



Research on the Impact of Booth Image Design on Purchasing Intention of Purchasers Based on MEC Means-End Chain

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Abstract. With the continuous development of exhibition economy and the continuous improvement of exhibition venues and facilities, how to use limited resources to design and display exhibitors is crucial to improve the transaction rate^[1]. In view of this, this article adopts MEC Means-End Chain and step interview research method to study the difference of the perception of the exhibition effect of exhibitors in commercial exhibitions, and analyze the psychological perception of purchasers and the affected purchasing intention in commercial exhibitions. Through the obtained chain information, we summarize the booth optimization related suggestions of some commercial exhibitions, and strive to increase the turnover rate from the perspective of exhibitors.

Keywords: business exhibition; trade fair; purchasing intention of purchasers; booth optimization

1 Introduction

As China's commercial exhibitions continue to increase, the exhibition economy continues to develop, and exhibition venues and facilities continue to improve, purchasers' aesthetic needs for exhibition displays are getting higher and higher, and their requirements for venue and exhibitor service levels are also getting higher and higher. Many scholars have studied and indicated that the exhibitor's booth image is very important in various exhibitions, especially commercial exhibitions. For example, Cai Songru and Ye Jianan pointed out ^[1] that booth design is a key exhibition and event planning task, and its primary task is to achieve exhibitor goals such as promoting sales. Jin Yangnan ^[2] pointed out that the booth scene and its booth image are important spaces for companies and audiences to obtain and exchange information. Purchasers repeatedly contact the booth through pre-exhibition promotion, exhibition visits, and post-exhibition return visits during an exhibition. Zeng Hongyan ^[3] pointed out that booth design is crucial to the effect of exhibitions. How exhibitors use limited resources to design booth

images is an important part of project management marketing plans and promotional activities.

In commercial exhibitions, companies can not only convey products and information but also directly shape and promote their corporate image, achieving both the goals of creating business opportunities and promoting products. Therefore, booth design in commercial exhibitions is related to many factors of corporate interests. With frequent global business contacts and increasing trade fairs, such research has certain significance. This article will correlate the transaction motivation of purchasers in commercial exhibitions with the booth design of exhibitors for further in-depth research.

2 Literature Review

In the existing research and report, In the existing research and reports, there is a solid foundation for studying the optimization of exhibitors' booth designs, regardless of whether it is from the perspective of exhibition organizers, exhibition organizers, or exhibitors.

Regarding the study of psychological behaviors of various participants in commercial exhibitions, China has already accumulated considerable research on the improvement of services and satisfaction levels of organizers, exhibition organizers, and exhibition venues. For example, Zhang Jiayu^[4] used factor analysis to extract public factors and weight indices of exhibition service indicators based on the needs of exhibitors and visitors, and constructed an exhibition service system. Yao Na^[5] aimed to achieve a win-win situation for both exhibition organizers and visitors by enhancing exhibition effectiveness through the design of interactive exhibition experiences using virtual reality. Many scholars have also constructed satisfaction models and logit ranking models to study the factors that significantly influence purchaser satisfaction. There is a certain foundation in the relatively microscopic research on the psychological impact of booth image on purchasers. Xu Mengyan^[6] mentioned in related research that psychological set reactions such as "first impression", "empathy effect" and "regional cultural psychology" are widely applied in exhibition design.

In terms of research on the transaction rate and psychological factors of purchasers in commercial exhibitions, many scholars have explored the relationship between purchase behavior and psychology. For instance, psychological budgeting partially mediates the relationship between booth layout, promotional materials, booth decoration, and impulse purchases. Additionally, there are scholars who have analyzed the reasons for unsuccessful transactions. While the above research focuses on consumption factors and behaviors, this study primarily analyzes the motivations and value pursuit.

3 Research Design

3.1 Process of Design

This study aims to delve into respondents' perception of specific attributes, and how these attributes influence their consequences, ultimately reflecting their values. To

achieve this objective, the study adopts the Means-End Chain theoretical model and its mainstream analysis methods [7], combined with the soft ladder interview approach [8] for one-on-one in-depth interviews. Through this approach, we seek to explicitly define the intrinsic connections among key perceptual elements within the framework of attributes (A), consequences (C), and values (V).

By utilizing this systematic and structured research design,

We hope to reveal respondents' deep-level cognition towards a particular phenomenon or product, providing valuable reference for future research and practice.

Since there is no mature theoretical framework for the value motivation of purchasers and transactions in commercial exhibitions, this study adopts soft ladder to conduct semi-structured interviews with 7 respondents with rich exhibition experience.

Researchers first provide several different types, different design style of booth rendering, ask the respondents in each kind of booth to which booth is most interested in, and then ask the booth to the attraction of the respondents to get attribute level motivation, then ask each attribute level motivation to the importance of the respondents to obtain the result level and value level of motivation, this process has continued to the respondents are unable to provide more information. To ensure the accuracy, consistency and completeness of the data, the data were cleaned.

The population information of the respondents is shown in Table 1, in which 42.9% are male and 57.1%; the proportion of social people is 100%, and the interview subjects are mostly businessmen and private economic operators. Due to the certain limitation of such occupations, the age is basically 35-40 years old. The information is showed in table 1.

Table 1. Interviewee information

Respondents	Gender	Age	Occupations
T1	W	36	jeweler
T2	W	27	Imported snack merchants
T3	M	45	The exhibition company recruits the exhibition staff
T4	W	30	Jewelry Industry Sales
T5	W	39	Building materials company exhibitors
T6	M	30	Design Director, Coating Company
T7	M	29	

3.2 Data Analysis

1) Data Encoding

The researchers conducted a coding analysis of the interview data based on the theoretical framework of the Means-End Chain, and logically categorized them into attributes, consequences, and values. A correlation table was then created. Drawing from relevant literature on value pursuit [9][10][11], the data were further summarized into the categories of attributes, consequences, and values, as shown in figure 1 below.

Level 2 coding			Interviewer serial number							Level 1 coding
Attributes	Consequence	Value	T1	T2	T3	T4	T5	T6	T7	
A1 Beautiful modeling	C1 Eye-catching	V1 Brand identity	This one (Pandora's booth) is simply premier, or it's more graceful in its linearity		The shape of this booth is regular, I like it.		Streamlined booths that are more tech-savvy and more in line with digital products. More eye-catching.			a1 Beautiful lines a2 Regular shape a3 Strong sense of technology a4 Attractive to the eye a5 Conforms to the characteristics of the product
A2 High-quality color scheme	C2 Esthetic sympathy	V1 Brand identity	Its color scheme would appeal to me more than the others, more techy.	(The light-colored booth) feels a bit low-end to me. With the darker booths, it has a high-end feel to it, because at the very least it makes it feel like (the brand) is more subdued. I don't like those light-colored booths) because the color scheme makes it feel cheaper.		It is brighter and looks wider (Darker colors) Not as visually appealing	The color scheme feels more advanced than the others, but I think the color scheme might be slightly darker, and it might work a little better if you mention the highlights now.	It reflects the high style of the brand	The color of the door head is relatively bright, too conspicuous, after watching it basically feel that they already know, but a certain curiosity, so that the audience does not want to go back in. It also makes people feel too bland and ordinary, no big highlights and highlights, it is recommended to optimize the color matching, so that the color style is more advanced.	a6 Color scheme is aesthetically pleasing a7 High-end style a8 Visually pleasing a9 Color is conspicuous a10 Plain design
A3 Booth Size	C3 Brand trust C4 Positive emotions	V1 Brand identity	Generally, if the booth is small, there are not many products, but I feel that if the booth is bigger, it may be better than the small booth. I feel that if the booth is bigger, it may be better than the products in the small booth, both in quality and quantity.				It looks wider.			a11 High number of products
A4 Overall style	C4 Positive emotions C5 Negative emotions	V2 Brand recognize		I prefer a booth with a minimalist setup.	The booth is more open, people can see what's there from a long way away when they walk to the sides. This booth, which is designed like a gas station, is airy, but you can't see what's inside when you're next to it.	neat and tidy	Keep it simple and have an inclusive feel	Decor is flashy and bejeweled, the sense of space should be appropriate; too permissible will have the feeling that there are fewer kinds of exhibits, and the sense of privacy is not strong, and the psychology is not willing to carry out further understanding, too crowded will feel depressed and cluttered.		a12 Simplicity of style a13 Translucent layout a14 High visibility a15 Strong sense of inclusion a16 Flamboyant décor a17 Simple arrangement
A5 Logo Attention	C6 Visual Impact	V1 Brand identity		If the logo is noticed, the brand style is displayed more clearly. Because I may not go in when I walk by, it's easier for me to get information if the logo is visible. The following kind (logo is not obvious) I have to ask the exhibitor branding questions in person and then communicate with them, which takes up too much time and I'm not interested.	It's name is on it, and it's noticeable at first glance.					a18 Message clear a19 Name noticeable
A6 Exhibit Contents	C7 Determining factor	V3 Signing rate	We have a purpose to explore, but we don't really care about these booth arrangements.	It still depends on the product, which is the first priority.	It's not big. We still need to pay attention to the products they sell themselves.					a20 products as the main focus
A7 Individualized design	C8 Curiosity	V4 Pedestrian flow	That's fine for me. If you don't look at jewelry, you will go around its house first to see its appearance	Choose a few good works, which can also show some of their shooting styles and are representative.		Yes, I am someone who is quite attractive.	I may value these more and have a stronger sense of design.			a21 has a strong sense of design a22 has strong representativeness
A8 Arrangement of exhibits	C9 Exhibit Accreditation C10 Exhibit Interest	V2 Brand recognize V1 Brand identity						Abundant exhibits, finely categorized exhibits with a wide range of types, and see the full view inside.	People feel that standing outside the booth allows them to see the full view inside.	a23 highlights a24 rich exhibits a25 display system a26 detailed classification
A9 Number of exhibits	C9 Exhibit Accreditation	V2 Brand recognize		Select a few representative works for exhibition.				Moderate quantity		a22 has strong representativeness a23 has moderate quantity
A10 Space Design	C11 spaciousness	V1 Brand identity							The construction of spatial distribution gives people a good sense of space.	a25 has a strong sense of space

Fig. 1. encoding analysis

2) Build a Meaning of the (Association)Matrix Table

The meaning matrix serves as the foundation for hierarchical analysis and the construction of Hierarchical Value Mapping (HVM) [12], exhibiting the associative relationships and frequencies among attributes, consequences, and value elements. Among the three hierarchical components of attributes, consequences, and values, attributes are directly linked to consequences, and consequences are directly linked to values. Based on the number of times that basic concepts in various categories of attribute A-consequence C and consequence C-value V were associated in the ladder-type interviews,

two meaning matrix tables, A-C and C-V, were constructed, as shown in Tables 2 and 3 below.

Table 2. A-C association matrix table

Attribute result(A-C) correlation matrix of interviewees											
	C1	C2	C3	C4	C5	C6	C7	C8	C9	C10	C11
A1	3										
A2								6			
A3								2	2		
A4								5	5		
A5								2			
A6								3			
A7								3			
A8								4	4		
A9								2			
A10								1			

Table 3. C-V association matrix table

Result Value Attribute(C-V) Correlation Matrix of Respondents				
	V1	V2	V3	V4
C1	1			
C2	1			
C3				1
C4				2
C5				1
C6	1			
C7				1
C8				1
C9				2
C10				1
C11	1			

3.3 Drawing CLASS Map (HVM)

1) Introduction of the Value Class Map (HVM)

The Hierarchical Value Mapping (HVM) reflects the primary relationships among elements of different hierarchical levels. To highlight the main relationships within the matrix, it is necessary to set an appropriate threshold before creating the graph. Relationships with a frequency of association below this threshold will not be represented in the diagram [13]. Research indicates that to identify the primary relationships within the matrix, the threshold should fall between 2 and 5, with different numbers representing different degrees of association among various factors [13].

2) Defining the Threshold

Threshold (cut-off value) is defined as the minimum frequency of association required for a relationship to be considered significant and worthy of discussion. Relationships with frequencies below this threshold are considered individual cases and are not discussed in detail (i.e., they lack general research significance). By filtering the data based on this threshold, effective data can be obtained. In this paper, a threshold of 3 is chosen, and the bold entries in the table above represent the effective data, while other data are not discussed in detail.

The specific method for defining the threshold is as follows:

Drawing on the threshold selection criteria proposed by Reynolds and Gutman, Bagozzi and Dabholkar suggested constructing a matrix of the number of cells and associations under different threshold conditions. By comprehensively considering the balance between data simplicity and completeness, an appropriate threshold is selected. This method of threshold selection has received widespread recognition from scholars. Based on this, the present study adopts the method proposed by Bagozzi and Dabholkar^{[12][13][14]} to select the threshold.

First, calculate the total number of available chains (and the total number of chains coded from the interview data) and the total number of possible chains meeting A-C-V attribute-result- value logic relationship according to the total number of chains, called the total number of interview chains, and the results are respectively 47 and 91;then calculate the number of unit chains with the threshold from 1 to 6,the total number of available chains, the total number and percentage of the statistical matrix.

After observation, when we set a threshold of 3, the number of chains greater than or equal to the threshold accounts for 35% of the total number of logically associated chains, and accounts for 1.36% of the number of available chains which can exist, and the data is relatively concise.

And when we set a threshold of 3, the number of chains that are greater than or equal to the threshold accounts for 68% of the number of chains mentioned at least once in this interview, and the data correlation is well reflected. Therefore, considering the simplicity and completeness of the data,3 was selected as the threshold in this study. Data outside the threshold will not be discussed. The defined threshold value process is detailed in Table 4 below:

Table 4. define threshold table

The threshold is assumed	Greater than or equal to the total number of assumed threshold cell chains	The ratio of unit chain to all Codes (arrangement combination)4x11x10x7=3080	Number of active cells as a proportion of all cells mentioned at least once	The ratio of the unit chain to all logical associated chains is 13x7=91
1	47	0.0152	1	0.51
2	46	0.0149	0.98	0.5
3	32	0.0136	0.68	0.35
4	23	0.007	0.5	0.25
5	11	0.003	0.23	0.12
6	6	0.002	0.13	0.07

4 Conclusion

4.1 Draw MEC Means-End chain

According to the value class map HVM, in all the association relationships, if A and B are associated, and B and C are associated, the ABC chain can be built. The analysis obtained 8 chains.

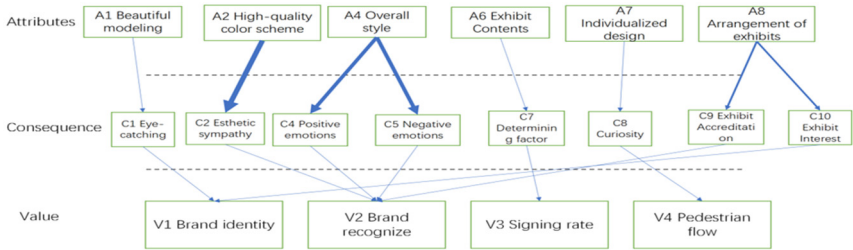


Fig. 2. Eight Means-End Chain information

As shown in Figure 2, the thickness of the lines in the figure represents the degree of correlation. The thicker the line, the higher the degree of correlation. And show in table 5.

Table 5. Chains introduction

number	Chain structure, the Structure of chains	Chain connotation description	Implication of chains
Chain 1	Beautiful shape-Brand Style (A 1-C1-V1)	Beautiful exhibition modeling to attract the sight of purchasers, so that purchasers think the brand level high-end.	
Chain 2	Color matching senior-Aesthetic resonance -Brand Recognition(A 2-C2-V2)	Purchasers think that the color matching of a booth is advanced, produce aesthetic resonance, and then improve the identity of the brand.	
Chain 3	Overall style-Positive sentiment-Brand identity(A 4-C4-V2)	The overall style of the booth makes the purchasers feel happy, and then have a certain brand recognition of the booth.	
Chain 4	Overall style-negative sentiment-brand identity(A4-C5-V2)	The overall style of the booth makes the purchasers feel the negative emotions such as narrow, and then affects the brand identity of the booth.	
Chain 5	Content-determinants-signing rate(A 6-C7-V3)	The exhibition content of the booth is a decisive factor for whether the buyer signs the contract.	
Chain 6	Personality Design-Curiosity-Human Traffic(A 7-C8-V4)	When facing the booth with personalized design, they are generally curious about the booth, thus increasing the flow of people in the booth.	

Chain 7	Exhibit exhibits-Brand Recognition(A 8-C9 -V2)	Reasonable arrangement of exhibits can improve the recognition of the exhibits by purchasers, and then improve the recognition of the brand
Chain 8	Exhibit Arrangement-Exhibit Interest- Brand Style(A 8-C10-V1)	Advanced exhibits arrangement can arouse purchasers' interests in exhibits, and then improve purchasers' cognition of brand style

Chain1 A1-C1-V1 (beautiful shape-attracting eye-brand style) reflects the attention of the exhibition purchasers to the booth modeling, and thus the cognition of the booth and even the brand style. For purchasers, the image of the exhibition will affect the psychology of purchasers to a large extent, such as the "first impression" of the booth on the cognition of purchasers. In the process of the exhibition, purchasers tend to visit the booth with beautiful lines and shapes in line with the characteristics of the product. For example, "Streamlined, more technological, more digital. It is more eye-catching". This kind of booth is not only in line with the aesthetic choice of purchasers, but also fully reflects the theme content of the booth, so that purchasers not only attract the visual level, but also identify with the level of the participating brand in the value level.

Chain2 A2-C2-V2 (advanced color matching-aesthetic resonance- brand identity) reflects the buyer's value of the overall feeling of the booth color matching. The exhibitors think that the overall color matching of a booth has a sense of advanced, and has aesthetic resonance to the design of the booth, thus creating a certain sense of affinity to the participating brand, and increase the brand recognition of the brand. Similarly, purchasers will think the brand's products are cheap because they think low-end color matching. For example, "I don't like these ones (light colors), so his color scheme will make him feel cheaper. "In the overall tone style, the brightness is higher the is higher, the dark color booth gives people a calm feeling, more favored by purchasers.

Chain3 A4-C4-V2 (overall style-positive emotion-brand identity) and Chain4 A4-C5-V2 (overall style-negative emotion-brand identity) all reflect the impact of the overall style of the booth on the brand identity of purchasers: purchasers are more inclined to choose the overall style to make them feel bright, open and other positive emotions. At the same time, this kind of booth gives purchasers a strong sense of tolerance and transparent pattern, so that purchasers have a certain sense of brand identity. The too transparent or too crowded booth makes the purchasers feel depressed and other negative emotions, which prevents the purchasers to further understand the booth, and also reduces the identity of the purchasers to the brand. For example, "too transparent will have a feeling of less variety of exhibits, and not a strong sense of privacy, psychological unwilling to further understanding; over-crowded will feel depressed and disorderly.

Chain5 A8-C9-V2 (exhibition content-determining factor-signing rate) shows that the exhibition content of the booth is the determining factor of the transaction rate of the exhibition. The vast majority of purchasers believe that the excellent booth design attracts them to go to the booth for further understanding, but the determinant of signing is still in the product itself: "It still depends on the product, the product is the first.

Chain6 A6-C7-V3(personality design-curiosity-human flow) reflects the relationship between the booth traffic flow and the booth personality design. The personalized design booth stimulates the curiosity of purchasers, prompting purchasers to go to the booth for a deeper understanding, and then increase the flow of people in the booth, and enhance the popularity of the booth. Among them, purchasers majoring in design and other art majors are particularly affected: "I may value these more, and have a sense of design more.

Chain 7 A8-C9-V2(arrangement of exhibits-recognition of exhibits- brand identity) and chain 8 A8-C10-V1(arrangement of exhibits- interest of exhibits-brand style) reflect the influence of exhibits arrangement on the psychology of purchasers. The rich variety of exhibits, fine classification and neat arrangement will improve the value of the booth products in the hearts of purchasers, improve the interest of purchasers in the exhibited products, and then improve the value and style of the brand in the hearts of purchasers. On the contrary, the chaotic arrangement of exhibits with no emphasis is easy to make purchasers lose the desire to have a further understanding. For example, "People feel that standing outside the booth can basically see the whole picture of the booth intuitively, and few works are displayed, so purchasers do not want to go in to have a deep understanding".

5 Recommendation

Analysis of the above eight MEC chains gives the following suggestions:

The booth with beautiful shape and advanced color matching is more favored by the purchaser and can enhance the style of the overall style of the exhibitors and the recognition of the exhibitors to the purchasers. However, the above three suggestions can determine the signing rate. Exhibitors will attract many purchasers to understand the excellent booth design, but the selection and quality of the exhibition content is also a bottom line that cannot be ignored by exhibitors.

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