1. Exploring experiments and data

Select the third-year undergraduate students who have the same level of familiarity with the experimental scene as volunteers to ensure that they have the same educational background and age characteristics, and using the Purdue University Mental Cut Test (MCT) of Purdue University, the subjects were homogenized and divided into 4 groups (The specific grouping can be seen in the file "Experimental personnel's spatial cognitive ability data"). When grouping, the test scores of the subjects were used as the main reference index, so that the mean value of the overall spatial cognitive ability test scores between the groups was the same, the distribution of men and women was even, and the age distribution was similar, so as to ensure that the test process of each group was the same except for the independent variables. Then, two different indoor shopping malls near the school were selected as the test sites. The subjects walked along the designed route from the starting point to the end point in a "shopping" state. After reaching the end point, the subjects independently recalled and recorded the POIs they saw during the trip. Finally, the collected experimental data are cleaned and sorted, and the main influencing factors of indoor POI significance are determined through the questionnaire survey of the subjects. The test data are shown in Table 1(This table can also be found in the file "Information statistics table of the recall elements and influencing factors of the verification experiment in Starlight Square"). The number of recalled persons(The survey results for recall can be seen in the file "Popularity Questionnaire Results Form") and popularity in Table 1 are calculated based on the

average of the questionnaire survey results of 118 test personnel, and the spatial location, uniqueness and relative scale are the results of the field investigation of the test personnel.

Tab.1 Information statistics table of the recall elements and influencing factors of the verification experiment in Starlight Square

POI	Recall	Brand-awareness	Location	Uniqueness	Size
Adidas	89	7.8	Entrance	No	Middle
Nike	72	7.6	Channel	No	Small
Watsons	67	6.3	Entrance	No	Middle
MUJI	59	6.2	Multi-channel intersection	No	Small
UNIQLO	55	7	Channel corners	No	Large
ANTA	52	7.5	Channel	No	Middle
New balance	48	6.6	Elevator entrance	No	Small
Yidiandian	44	5.3	Entrance	Yes	Small
Puma	43	5.7	Multi-channel intersection	No	Middle
Shuyi	42	6.6	Channel	Yes	Small
Vans	38	5.8	Channel corners	No	Small
Juewei	36	7.2	Channel	No	Small
CONVERSE	34	6.1	Multi-channel intersection	No	Small
Ayogurtcow	32	6.3	Channel	Yes	Small
LDK	32	5.5	Multi-channel intersection	No	Middle
Fila	30	5.2	Channel	No	Middle
Hotwind	30	4.4	Entrance	No	Middle
Westlink	29	4.2	Entrance	No	Large
Apple	28	7.2	Channel	No	Small
NBA	25	5.6	Multi-channel intersection	No	Small
Dickes	20	4.9	Channel	Yes	Small
Huawei	19	7.1	Channel	No	Small
Zhouheiya	19	6.4	Channel	Yes	Small
Happylemon	18	4.4	Channel	Yes	Small
Keds	17	4.2	Multi-channel intersection	No	Small
GXG	16	3.9	Multi-channel intersection	No	Small
UR	15	3.6	Elevator entrance	No	Middle
Purcotton	15	3.7	Elevator entrance	No	Middle
Takoyaki	13	4.1	Channel	Yes	Small
Sanfu	12	4.5	Channel	No	Middle
Kappa	12	5.1	Channel	No	Small
Boy	11	4.1	Channel	Yes	Small

Shuajiazj	11	4	Channel	No	Small
SKECHERS	11	3.8	Channel corners	No	Small
YEARCON	10	4.3	Channel	No	Middle
Bafangyudan	10	3.4	Channel	Yes	Small
Zippo	10	3.8	Channel corners	No	Small
Bingo drinks	9	4.4	Multi-channel intersection	No	Small
Lee	9	3.7	Multi-channel intersection	No	Small
O.C.E	7	3.6	Multi-channel intersection	No	Small
ANTA kids	7	5.1	Channel	No	Small
Gialen	7	3.7	Multi-channel intersection	No	Small
RED DRAGONFLY	7	4.3	Channel	No	Middle
CR Vanguard	6	4	Channel corners	No	Small
Dan nong	6	2.4	Channel	Yes	Small
Ugly crispy meat	5	3.3	Channel	Yes	Small
AK club	5	2.9	Multi-channel intersection	No	Small
Bowl chicken	5	4.2	Channel	Yes	Small
Weizifu	5	3.8	Channel	Yes	Small
PEACEBIRD	5	4.1	Channel corners	No	Middle
Meiweimeike	5	3.5	Channel corners	Yes	Small

2. Processing of sample data

(1) Classification of recalled person-times: Using natural discontinuous clustering to process POI recalled person-times of Starlight Square, POIs of different levels can be obtained. This method classifies POIs with recalls of 42 and above as level 1, POIs between 15 and 42 as level 2, and POIs below 15 as level 3. The results are shown in the "Grading" column of Table 3(This table can also be found in the file “Information statistics table of the recall elements and influencing factors of the verification experiment in Starlight Square”).

(2) POI popularity: Popularity refers to users' familiarity with the indoor POI brand, and it was tallied through a user-facing questionnaire. During the online questionnaire survey, the popularity of POIs was categorised from low to high

on a scale of 1–10, and users were asked to score each POI individually. Then, the scores collected for each POI were averaged as its significance value.

(3) Spatial location: The location of a POI refers to the influence of different locations in the interior space on the salience of the POI. In this study, we classify location-influencing factors into five levels, including access, access corners, multiple access intersections, lift entrances and entrances, corresponding to quantitative values of 1–5, respectively.

(4) Uniqueness: The uniqueness of a POI refers to some of the unique features that the POI has that can attract the user's attention. In the exploration experiment, based on communication with users after the experiment, we found that many users mentioned the name and decoration of the POI and the difference between the POI and its surrounding features, which greatly affects their memory of the POI. The uniqueness of the POI was divided into four categories, namely, “nonunique”, “uniqueness of name”, “uniqueness of decoration” and “uniqueness of features”.

(5) Relative scale: The relative size of the POI is collected by measuring the length (l) and height (h) of the store near the aisle. By calculating the visual area (S), the visual area of the POI in the indoor space is divided into three grades, small, medium, and large, according to the gradient and quantified as 1–3, respectively.

The spatial location distribution, uniqueness and relative scale of POI are quantified according to the attribute refinement system shown above, and the quantified results are shown in Table 2.

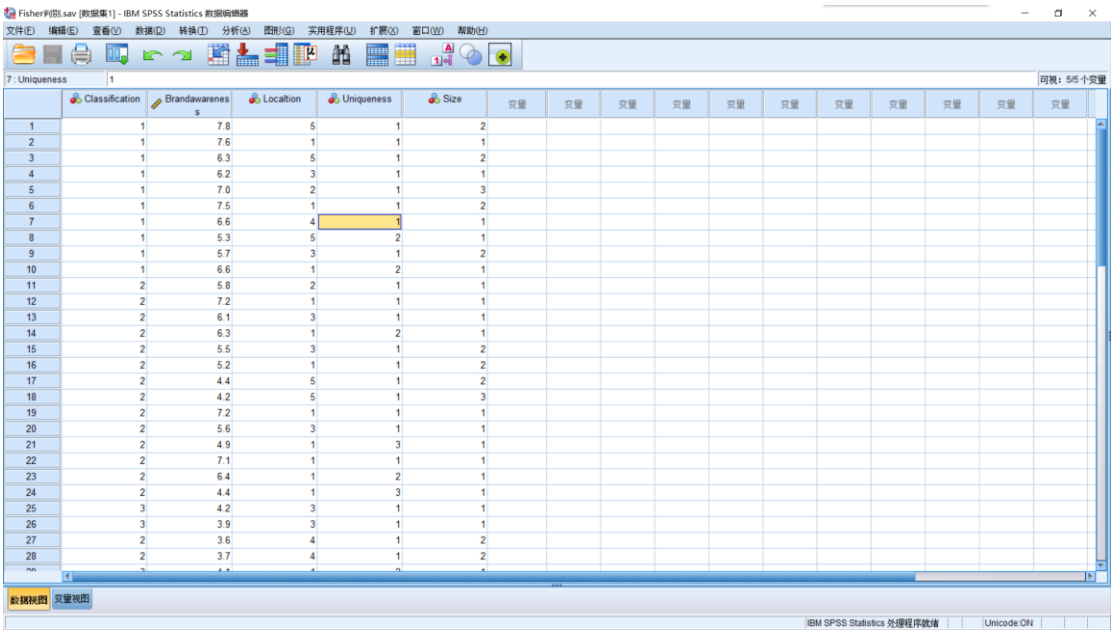
Table 2. Influencing factor information statistics table

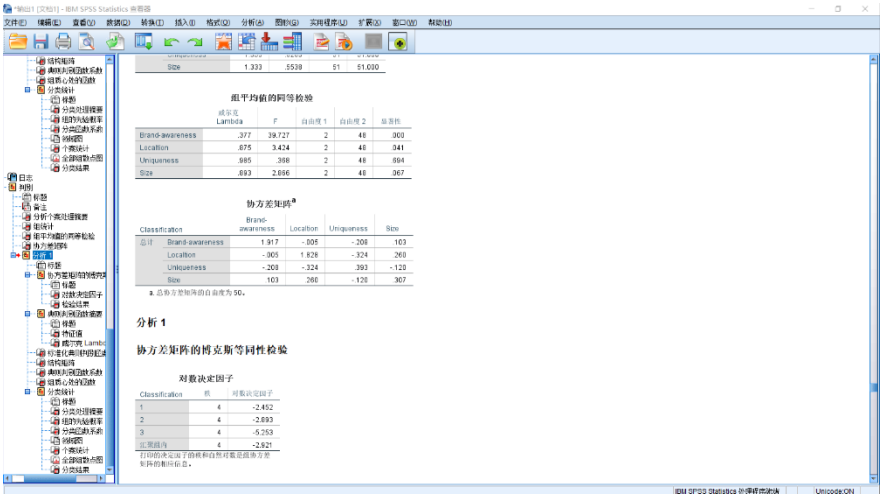
POI	Classification	Brand-awareness	Localtion	Uniqueness	Size
Adidas	1	7.8	5	1	2
Nike	1	7.6	1	1	1
Watsons	1	6.3	5	1	2
MUJI	1	6.2	3	1	1
UNIQLO	1	7	2	1	3
ANTA	1	7.5	1	1	2
New balance	1	6.6	4	1	1
Yidiandian	1	5.3	5	2	1
Puma	1	5.7	3	1	2
Shuyi	1	6.6	1	2	1
Vans	2	5.8	2	1	1
Juewei	2	7.2	1	1	1
CONVERSE	2	6.1	3	1	1
Ayogurtcow	2	6.3	1	2	1
LDK	2	5.5	3	1	2
Fila	2	5.2	1	1	2
Hotwind	2	4.4	5	1	2
Westlink	2	4.2	5	1	3
Apple	2	7.2	1	1	1
NBA	2	5.6	3	1	1
Dickes	2	4.9	1	3	1
Huawei	2	7.1	1	1	1
Zhouheiya	2	6.4	1	2	1
Happylemon	2	4.4	1	3	1
UR	2	3.6	4	1	2
Purcotton	2	3.7	4	1	2
Keds	3	4.2	3	1	1
GXG	3	3.9	3	1	1
Takoyaki	3	4.1	1	2	1
Sanfu	3	4.5	1	1	2
Kappa	3	5.1	1	1	1
Boy	3	4.1	1	2	1
Shuajiazj	3	4	1	1	1
SKECHERS	3	3.8	2	1	1
YEARCON	3	4.3	1	1	2
Bafangyudan	3	3.4	1	3	1
Zippo	3	3.8	2	1	1
Bingo drinks	3	4.4	3	1	1
Lee	3	3.7	3	1	1
O.C.E	3	3.6	3	1	1
ANTA kids	3	5.1	1	1	1

Gialen	3	3.7	3	1	1
RED DRAGONFLY	3	4.3	1	1	2
CR Vanguard	3	4	2	1	1
Dan nong	3	2.4	1	2	1
Ugly crispy meat	3	3.3	1	3	1
AK club	3	2.9	3	1	1
Bowl chicken	3	4.2	1	2	1
Weizifu	3	3.8	1	2	1
PEACEBIRD	3	4.1	2	1	2
Meiweimeike	3	3.5	2	2	1

3. Construction of POI saliency model based on Fisher discriminant method

The FDA-based POI significance evaluation model was established by using SPSS 25.0 software using the data in Table 2. （ Please see the file “SPSS data analysis instructions ” for details.）





组平均值的同等检验

	威尔克 Lambda	F	自由度 1	自由度 2	显著性
Brand-awareness	.377	39.727	2	48	.000
Location	.875	3.424	2	48	.041
Uniqueness	.985	.368	2	48	.694
Size	.893	2.896	2	48	.067

协方差矩阵[a]

Classification		Brand-awareness	Location	Uniqueness	Size
总计	Brand-awareness	1.917	-.805	-.208	.103
	Location	-.805	1.828	-.324	.260
	Uniqueness	-.208	-.324	.393	-.120
	Size	.103	.260	-.120	.307

a. 总协方差矩阵的自由度为 50。

分析 1

协方差矩阵的博克斯等同性检验

对数决定因子

Classification	秩	对数决定因子
1	4	-2.452
2	4	-2.893
3	4	-5.253
汇聚组内	4	-2.921

打印的决定因子的秩和自然对数是组协方差矩阵的相应信息。

典则判别函数系数

	函数 1	函数 2
Brand-awareness	1.596	.037
Localtion	.795	-.376
Uniqueness	1.314	1.194
Size	.848	1.203
(常量)	-12.537	-2.582

未标准化系数