The effects of the museum environment perception on visitors' experience

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Introduction

- Scarce importance has been given to the effect that the museum's environment has on visitor behavior.
- Studies done at minorist (commercial) environments, show that a combination of different environmental factors such as colors, lighting, etc., influence attitudes and responses of buyers. These ideas were applied by Regan Forrest (2014)* to environmentally assess museum spaces.
- Forrest's methodological proposal was used to evaluate the environment of five halls of a University Science Museum in Mexico.

* Forrest, R. (2014). Desing factors in the museum visitor experience. Doctoral Thesis. The University of Queensland.

Study aims

- This study explores the way visitors perceive the different environments of Universum, the Science Museum of the National University of Mexico.
- The study considers that the visitor's experience has affective, cognitive and cultural components.

A pilot study

- A pilot study was first applied using a semantic differential instrument.
- It was carried out using 22 environment descriptors that were grouped in three main environmental descriptors: Vibrancy, Spatiality and Order, (as proposed by Forrest).
- The outcome of this exercise was the definition of 15 semantic differentials that describe Vibrancy and Spatiality as shown in table 1 (following Forrest´s guidelines, the Order dimension was eliminated).

Dimension	Positive descriptor	Reference to	Opposite descriptor	Reference to
Vibrancy	Dynamic	It is remarkable to be energetic and active	Static	Has no movement, feels still
	Striking	Draws attention	Ordinary	It is common, regular and it looks like the others
	3-Dimensional	It is composed of three dimensions	Flat	That is flat, smooth, without reliefs
	Colorful	It has a diversity of colors	Neutral	It lacks distinctive features
	Dramatic / spectacular	Interested, moved, attractive and ostentatious	Simple / discreet	Lacking ostentation
	Active	Is moved	Passive	Lacks activity
	Energetic	Produces a vivid action	Serene	It is peaceful calm
	Varied	It is different in its composition	Repetitive	Repeats or contains the same things
	Complex	It is composed of different elements	Simple	It consists of a single element
	Bright	Stand out and shine	Subdued	It is low in color or brightness
Spatiality	Separated	There is a certain distance between the things of space	Stacked	Things are very close together in space
	Wide	It is extensive	Narrow	It is tight, tight
	Open	Is not delimited	Enclosed	Is delimited
	Baggy	It has excess space	Confined	Space is reduced
	Large	It is of considerable size	Small	It is smaller

Table 1. Descriptors of vibrancy and spatiality

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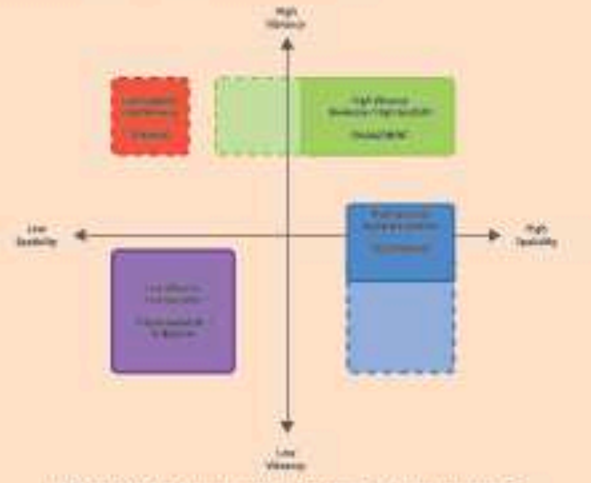
Application of the methodology

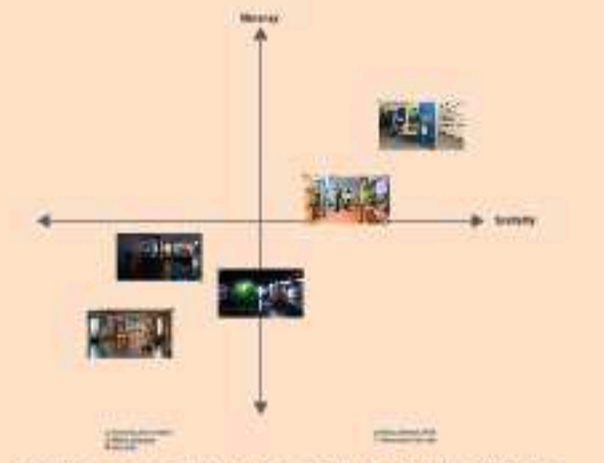
- The final instrument of this study was applied by two previously trained University students to 150 visitors along two months.
- The following procedures were carried out:
- The evaluation instrument was applied to 30 visitors for each of the selected museum halls. At the end, a total of 150 interviews were obtained.
- The first part of the instrument has a quantitative approach focused on the demographic data of the surveyed visitors.
- The second section of the instrument is a semantic differential with 15 different descriptors for the two above mentioned dimensions: Vibrancy and Spatiality.
- The semantic differential scale is composed of a series of descriptive characteristics with their corresponding opposite, ranging from 1 to 7, where 1 stands to for the positive qualification, 4 is for the neutral and 7 is for the negative one. Of these descriptors, 10 refer to Vibrancy and 5 to Spatiality, for each of the museum halls studied.

Results

- Databases were created for each of the five halls.
- With the systematized data, Vibrancy and Spatiality graphs grids were constructed for each hall.
- The average values of the descriptors were also obtained for each hall and located in the quadrants proposed by Forrest.
- The meaning of each quadrant resulting from the crossing axis for Vibrancy and Spatiality is of paramount importance to interpret the results obtained.
- When the descriptors of the hall are located in the upper right quadrant, there is a perception of high Vibrancy and high Spatiality, which shows that the visitor is cognitively and emotionally involved with the exhibition. Whereas in the upper left quadrant, the visitor experiences high Vibrancy and low Spatiality and as a result perceives tension in his visit. In the lower right quadrant the visitor perceives a high Spatiality with a moderate to low Vibrancy, which is possibly perceived as a restorative space. In the lower left quadrant with low Vibrancy and low Spatiality, the environment generates a disconnection with the visitor or produces boredom.
- According to the placing of the halls in each of the quadrants, it is possible to detect if the hall's environment promotes cognitive or affective gains according to a previous study applied by Forrest.



Relationship between the Perceived Atmosphere of Vibrancy and Spatiality and the visitor's experience.



Mapping diagram of the five rooms of the Universum Museum according to their Vibrancy and Spatiality scores

Conclusions

1. Visitors are able to describe the atmosphere in the exhibition environment according to the variables proposed by Forrest.
2. The perceived atmosphere in the studied museum halls can be described by two dimensions: Vibrancy and Spatiality.
3. Vibrancy is described by variables that detail the appearance generated by the design of the exhibition space. It is as well a dimension of the perceived atmosphere that refers to the perception of the design of an exhibition in terms of its eloquence, while Spatiality refers mainly to the perception of the gallery size and the height of the ceiling.
4. According to Forrest, these two dimensions are very useful to characterize the exhibition environment and to relate specific aspects of the perceived atmosphere with the visitors' experience.
5. It should be mentioned that according to Forrest's work, in particular the Spatiality measure offered the best correlation with the space characteristics, such as the gallery size and the height of the ceiling.
6. It is clear that the instrument can be used to characterize the museum environments in a novel and simple way by allowing different environments to be compared according to how visitors perceive them.
6. But more than anything else, this study has shown that it is possible to theoretically and consistently quantify the perceived atmosphere in a museum for the planning of new exhibitions.