

Evaluating attributes concepts for build environment

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Abstract. Based on semi-structured interviews answered by professionals in Architecture and Interior Design areas, this research aimed to investigate, how these professionals develop their projects. Considering a real situation, the research tried to find out how these professionals consider users necessities and opinions. It was also verified which attributes are considered most relevant and how these professionals correlate them to uses demands about ergonomic aspects and intrinsic characteristics of each project. The paper is concluded presenting a list of attributes that were identified as the most important when developing a design for a home kitchen (as example), and some considerations about this topic are also presented.

Keywords: ergonomics in build environment, ergodesign, design attributes, semi-structured interview.

1. Introduction

Build environment where we live are ideas and conceptions of Architecture, Engineering and Design areas professionals, when they present a relevant social role. Regardless it is possible to verify that designers' interventions usually have the intention to adequate space to user's necessities and expectations. But sometimes these interventions are performed without a better understanding of users' behavior (Elali, 2002, apud Cartier, 1977; Sommer, 1973 p.65, in Del Rio org. 2002).

According to LEMOS (1989) home kitchen is the environment in which we can testify evolution and changes of a certain society. Recently it is possible to verify some changes about the society concept when considering a home kitchen, changes that could be seen since the 90's. It can be observed an evolution about the aesthetics setup, in some cases in furniture, kitchen appliances, covering or workbench. This can be explained if we consider that many times kitchen "invaded" the living room, and sometime it is a part of this space. The environment that usually belongs to "service area" is now a "social area". So, this space must be adequate to be presented to

family and friends. The 4th Design Forum Kitchens 2020 affirms:

"Kitchens are under big changes. Today these are the home environment for what we can verify more technology development, and also a change that begins in the family core and encloses routines and familiar habits changes."

This paper presents an investigation, using a semi-structured interview, to highlight how by professionals in Architecture and Interior Design areas develop their projects - using home kitchens as scenarios. And how these professionals correlate them to uses demands about ergonomic aspects and intrinsic characteristics of each project. This paper is concluded presenting a list of attributes that were identified by the interviewed professionals as the most important when developing a design for a home kitchen. This research is just a part of a wider one in which was developed a tool to help design professionals, based on psychological aspects of users about the build environment.

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2. Methodology

According to MORAES & MONT'ALVÃO (2007), interview is one technique in which the researcher is facing the respondent, and questions are formulated aiming to obtain - as answers - data that are important to the investigation.

Interview can be considered as a social interaction. These authors also affirm that is “*an asymmetric dialogue, in which one side aims data collection, and the other, is a source of information*”.

Comparing all interrogation techniques, interview is the one that presents a larger flexibility. Less structured interviews are developed in a spontaneous format, without a previous questioning model.

GIL (2007) explains that interviews can assume diverse formats as: *informal* – when is different from a common conversation because has as objective data collection. Can be *focused* – the objective is to understand the respondent's point of view rather than make generalizations about behavior. And the *semi-structured* interview is the one in which questions are asked when the interviewer prepare questions and goes on in this question list as he feels it is appropriate to ask them. And the *structured interview* involves one person asking another

person a list of predetermined questions about a pre-selected topic

Ergonomic/ human factors professionals usually draw on different types of interviews according the research phase and its main topic. In this research, at this phase, a semi-structured interview was chosen.

2.1. Interviewee profile

Respondents were selected randomly, but they must fulfill some requirements:

- a) Live and work with interior design at Rio de Janeiro city;
- b) Experience in designing home environments;
- c) Be graduated and working in this area, at least for ten years.

Considering these requirements, eight professionals with their own business were selected and three other professionals that work in big stores of planned furnishing. Summarizing all the subjects, nine are architects, one is engineer, and one is designer.

Most of the respondents are working in this area for around 21 years. Professionals were 09 architects, 01 engineer and 01 interior designer. (See Table 1).

Table 1
Interviewee profile

Name	Bachelor degree obtained in	Degree	Working in this area for	Work place
A	1996	Architecture	18 years	Own business
B	1984	Architecture	26 years	Own business
C	1992	Architecture	20 years	Own business
D	1981	Architecture	29 years	Own business
E	1983	Architecture	15 years	Own business
F	1990	Engineer	10 years	Own business
G	1982	Architecture	30 years	Own business
H	1986	Architecture	25 years	Furniture store
I	1998	Architecture	10 years	Furniture store
J	1979	Architecture	30 years	Furniture store
K	1982	Interior Design	20 years	Own business and professor at university

2.2 – The semi structured interview

The research was carried out in August 2010. The intention of the initial questions was to better understand the design activity of each respondent, and verify in which way they mention or give details of ergonomic aspects involved in the project of these environments from his professional experience. The interview questions that were answered by the professionals were:

a) Which is your "starting point" when you begin the design process of a new home kitchen?

b) Which attribute (s) do you consider relevant for designing a home kitchen? Why?

c) Explain positive, negative aspects when designing a new home kitchen.

The intention of these questions was centered in a better understanding about the respondent's conception process, to verify which the main characteristics in each project were and if cited, which were the ergonomic aspects considered in a project

3. Results

The method that was chosen to deal with the interviews answer was the Content Analysis. For many years content analysis has most often been thought of in terms of conceptual analysis, where a concept is chosen for examination and the number of its occurrences within the data obtained (Busha and Harter, 1980). After content analysis was done **twelve attributes** were mentioned as the main ones in a home kitchen project. These attributes (or characteristics) were also defined by each respondent when mentioned. Attributes that represent similar aspects were grouped in a same "name", respecting the similarities. The most cited attributes for an interior design project - they were:

- a) **Access to cupboards** - easy reach and Access to cupboards considering standards for this kind of project;
- b) **Cabinet** - available space to perform tasks, as a workbench;
- c) **Beauty** - harmony when choosing proportion and topcoats; Proportion and alignment of doors and drawers. Color usage in details, enhancing contrasts. Proportion of the dimension of elements that compose the whole kitchen. Usage of materials that value the environment as wallpapers, wall painting, candles, decoration etc. Kitchen appliances should fit specific spaces or niches;

- d) **Circulation** - easy movement of users between the different sectors of the kitchen;
- e) **Integration between kitchen and living room** - a proposal where there are no walls or doors between kitchen and living room;
- f) **Durability** - materials with long-lasting quality that resist the kitchen continuous usage;
- g) **Natural and/or artificial illumination** - natural illumination is due to sunlight and artificial, by lamps;
- h) **Kitchen table** - dining table in a kitchen for fast meals and also helps in some tasks;
- i) **Organization** - kitchen sectors arranged in equilibrate way (preparation, cooking, storing), and this must take into account activities planning. The balance among closed cupboards and opened niches can be also understood as an organized space.
- j) **User profile** - profile of the people that will use the kitchen, considering habits, desires, style, home routine, family culture and expectancy;
- k) **State-of-the-art technology** – kitchen appliances that make easy kitchens tasks. Topcoats materials (for wall and floor), workbenches and furniture that are easy to clean;
- l) **Natural and/or artificial Ventilation** - natural ventilation is obtained from natural air flow and artificial, when using range hoods.

4. Final comments

Ergonomics speaks up for the user as a fundamental speaker in a scientific investigation - even so a detailed instruction was considered, even so a good observation of tasks was done, the main voice belongs to users.

In this research, in a "provocative", professionals responsible for interior environments projects were inquired, trying to find out in which way these experts assign priorities of the elements that will compose the whole project.

From interviews analysis it was possible to determine a "group of attributes" and verify which of these attributes are considered the most relevant and how the designers' choices can influence the final characteristics of the project.

It is important to highlight here the attributes that has direct relation with the scope of Ergonomics, even so none of the

professionals cited the word "ergonomics" or "ergonomically". Among these attributes it is possible to feature:

"Natural and/or artificial illumination", "Natural and/or artificial Ventilation", "circulation" attributes that are mentioned by specialists as important, and without the "environmental comfort" or "layout" words, these requirements are widely studied by Ergonomics field;

"Access to cupboards", "Cabinet"; "Organization" attributes are also understood by specialists but they don't mention the user x task relation;

"User profile" is the attribute that approximate the specialist point of view to users' necessities.

Analyzing interviews answered by specialists it was possible to find out specific attributes for home kitchens projects according their point of view. It was also possible to verify how they make decisions while designing an environment. In this way, a list of essential attributes was obtained for this group of professionals. This information is valuable for the development of a tool or technique that helps designers to understand the psychological aspects of users when imagining and expecting a new project of a build environment.

Once this paper is a part of a wider and research Project about users perception of build environment, it is possible to affirm that the contribution of professionals, answering the interviews, was fundamental to understand the designing process of these indoor spaces.

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