

# The use of an indirect methodological approach on the perception of elderly respondents to the interior features of Sheltered Housing

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**Abstract:** Research relating to the concerns of elderly people and their perceptions of interior environments has been subject to significant growth in recent times. The researcher seeking to discover and learn the views of people in relation to environment is confronted with direct techniques (e.g. observation, questionnaires). However, an individual's attitude toward the research topic or interviewer might influence on interviewee's responses. As a result, the aims of this study is to examine and apply indirect-methodologies to improve the effectiveness of data gathered from elderly respondents and to understand their awareness of the interior environments they inhabit, in order to facilitate an improvement in the design of sheltered housing. The findings provide a greater understanding of how elderly people observe unfamiliar space and the research demonstrates that by using indirect method approach, this could provide unique evidence to support the findings of the study.

**Keywords:** *User-centred methodologies, Spatial design, Environment behaviour.*

## 1. Introduction

Much of the research into the design of interior environments, for the elderly, is principally focused on the physical needs of residents e.g. studies by Green (1975) [1], Valines (1988) [2] etc. The researcher seeking to discover and learn the views of people in relation to environment is confronted with a choice of three main techniques: observation, questionnaires, and interviews. However, as some previous studies suggest, the impact of a design environment is frequently subliminal (Holahan 1978 [3]). Moreover, it could be argued that an individual's attitude toward the research topic might have a significant influence on his/her responses to any questions asked (Gillham 2000) [4]. Nonetheless, there is a possibility that participants may be unwilling to provide truthful answers or supply the researcher with answers they think are acceptable and therefore it is that results will be significantly effected and unreliable. Furthermore, most current research has revealed that, consultation and involvement can be viewed as key tools in maintaining and improving recent design (Hackney and Waddington 1988 [5]), therefore in this study, elderly people had been seen to be both contributors and consumers in the research process. In addition, the NHS Institute for Innovation and Improvement (2007) [6] argue that the main difficulty apparent in studying people's experience and perception in general is that, "as an inner subjective, immaterial phenomenon, it can never

be accessed or observed directly, but only indirectly through other methods to recall their experience". As a result, the principal aims of this study is to examine and apply in-direct methodologies to improve the effectiveness of data gathered from elderly respondents and to acquire knowledge on elderly people's perceptions toward sheltered housing design. In order to achieve these aims, the objectives were:

1. To review the relevant literature.
2. To discover how the elderly observe spaces and their priority in relation to the defined "five individual spatial areas" (entrance area, common room, common kitchen, laundry, and common shower room) within the sheltered house scheme by the use of "Visual Record survey".
3. To determine the order of priority related to five selected spatial areas by the use of "Sketch Map"& "Detail Recall surveys".
4. To evaluate the research methods and results via a questionnaire survey for the elderly subjects and interview interior design related professionals for their opinions and suggestions concerning the methods used.
5. To analyse the results from the methods used and form conclusions.

## **2. Research methodology and process**

### **2.1 Participants selection**

The candidates chosen for this study were elderly residents from Leicester City Council housing schemes. There were 8 participants comprised: three males and five females with an average age of 74 years and without mental disorder and able to manage their own daily activities. They living in 5 different sheltered house schemes and have lived for an average length of 6 years in sheltered housing.

### **2.2 Visual Record survey**

The aims of this method were to achieve an understanding of how the elderly subjects explore an unfamiliar space and to make observations of any special behaviour they exhibit during the visit. In order to achieve these aims, each participant was asked to assess the a completely unfamiliar sheltered housing scheme, while envisaging that they were looking for a new accommodation to move into and participants were provided with specially designed 'Visual Witness glasses' (VWG) (Figure 1.) to be worn during the visit. Therefore, the whole process of what the participants viewed could effectively be recorded, without inaccuracy, during their visit.

To analyse the result, the recorded video was reviewed by using "Ulead Video studio 6" software to calculate how long each subject spent in each of the five different identified areas. Moreover, the author reviewed the videos and notes were taken during the review, to record individual behaviours or actions by each participant during the visit.

### **2.3 Memory Recall survey**

Two distinct memory recall methods were adopted to determine the elderly participants' awareness of the selected interior spatial areas.

#### **Sketch Map survey**

The main aims were to test the subjects' memory of each selected spatial area, in order to understand their awareness of the space. Each subject was required to visit an unfamiliar sheltered housing scheme and asked to produce drawings of their own scheme and the one visited.

To analyse the result, participant’s drawings were ranked by the researcher and, also one architect by considering three main parts: “overall recognition of the space”, “object recognition” and “the relation between objects”.

### Detail Recall survey

A questionnaire was developed to test the subject’s detailed memory of interior elements within both their own and the visited schemes. To analyse the result, the answers provided by each subject were compared with the pictures or videos recorded earlier of each sheltered house scheme. A points (score) system was then adopted to calculate the results achieved by each subject.

## 2.4 Finding

### 2.4.1 Visual Record Survey

The results demonstrate that, on average, subjects spent more time looking at the common room than the building entrance area, laundry and common kitchen. The least time was spent in the shower room, while visiting the unfamiliar scheme. To support the findings and avoid bias, each video recorded was reviewed in detail, paying particular attention to the subjects’ behaviour and attitude.

### 2.4.2 Memory Recall Survey

Table 1. shows the points each subject achieved from the Sketch Map survey and Detail Recall of each selected spatial area. Results from the Sketch Map and Detail Recall survey were combined to allow comparisons of the subjects’ memory between different areas, thereby revealing which selected spatial areas participants paid particular attention to.

## 3. Research evaluation

### Questionnaire

Most subjects considered that the “entrance area” was the most important spatial area that they would focus on (10 out of 24), if looking to choose this scheme to live in and the shower room as the least significant area (19 out of 24). Furthermore, a comparison of the results with the Visual Record and Memory Recall survey revealed many

**Table 1. Results from Sketch Map and Detail Recall survey**

	Entrance area	Common room	Common room kitchen	Laundry	common shower room
Average points for subjects from SMS	1.50	2.16	1.41	1.47	1.00
priority	2	1	4	3	5
Average points for subjects from DRS	4.19	3.5	2.81	3	2.31
priority	1	2	4	3	5
Total points for subjects in each area	5.69	5.66	4.22	4.47	3.31
priority	1	2	4	3	5

similarities, with the only difference being the choice of the first and second priority. Therefore, this provides evidence to validate the indirect methodological approach used in this study.

### **Interview with professionals**

The aim of the interview was to evaluate the research findings and methodologies used and, therefore, to develop and improve the methods following the suggestions and recommendations from professionals. There were 9 professional people selected for the interview survey, all with at least 7 years practice in interior design discipline.

The results shows that most professional interviewees agreed that the visual Record method is useful, in that it is an effective method to identify the subject's awareness of spatial areas. However, they were in partial agreement with the "Detail Recall method". One of the main reasons for this is that the professionals believe that the memory ability of an individual person might affect the final result. In relation to the Sketch Map survey, professional participants were agreed with this method used, as it could reveal more direct thinking from the elderly subjects, as opposed to the questionnaire. Moreover, about 6/9 interviewees think the overall project is a sound methodological approach.

### **4. Discussions**

Due to the nature of this study, i.e. involving elderly people as participants, there are inherent difficulties presented by ethical and privacy issues, making it problematic to locate willing and suitable subjects to participate. Therefore, as the sample was relatively small in size, it could be argued that the findings can only be seen as representative of the elderly people occupying typical sheltered housing situations. Moreover, very little relevant research had previously been carried out using the same techniques. Therefore, it could be argued that much of the analysis of this information was experimental and to some extent may be viewed as being subjective.

### **5. Conclusions and recommendations**

The basis of this study was to enable elderly residents, themselves, to make a definite contribution to the improvement of their own physical environment. The results obtained in this study tends to provide more evidence to support the findings rather than direct methods and more importantly because it catches people's first reaction and, therefore, more closely related to their subconscious feeling. Moreover, there is potential to overcome for a language or cultural barrier resulting in the misunderstanding of interview questions and difficulties in acquiring the true feelings of the individual. Furthermore, those methods could be applied to different age groups or buildings types to discover if there are any disparate behavioural issues between such groups.

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