

A Quest for Visualizing the Data through an Inquiry on Alternative Household Types

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Abstract

This paper tackles the social and spatial needs and expectations of non-traditional alternative households (lone-person households, single parent families, dinks and house sharing friends) as the neglected actors of the built environment in Turkey and Istanbul in particular. The proposed research model makes use of both qualitative and quantitative methods in a dialectical relationship so as to obtain methodological triangulation. Such a mixed method, which allows taking advantage of diverse data collecting techniques and instruments (a short questionnaire, semantic differential scale, semi-structured interview, photo interview, field notes, photos and sketches), requires experiments on analyzing and displaying the data. At this point, architecture provides a basis to enhance different ways of data visualization, especially the qualitative one. This paper puts a special emphasis on data display techniques.

Built environment in different scales -ranging from domestic to city scale- is a space of relations and activities and the formation of place depends on these two concepts. Different household types define different relations and activities, so the ongoing trend of considering the nuclear family a standard design input in Turkey should be reassessed. This research relies upon the idea that non-traditional alternative small households in Istanbul might introduce different dynamics to the use of space and carry out the potential of interrogating current space organizations. Noticing such details might orient decision making in design to the production of a more flexible built environment that satisfies the needs and expectations of different user groups, including alternative and small household types.

Introduction

Architecture as a field of research has both advantages and disadvantages. As a multi-faceted discipline in contact with various fields (such as sociology, human geography, archeology, philosophy, engineering and etc.), it has the potential to borrow research strategies from other

disciplines and to mix different methods. On the other hand, it is hard to dominate the whole research literature. The vast amount of choice it offers can result in the lose of control or the misapplication of methods. Nevertheless, architecture seems to be an experimental area open to innovative ideas on research, ranging from the development of research strategy to data gathering, analyzing and displaying processes. Designed to be a mixed method research, this study aims to make use of the experimental potential of architecture in relation with various disciplines.

Exploring the socio-spatial needs and expectations of non-traditional alternative households (lone-person households, single parent families, double income families without kids (dinks), and house sharing friends) in Istanbul, the paper is structured in two parts: The first part focuses on the definition of the research problem by elaborating the situation of alternative households and current housing stock in Istanbul. It is strongly believed that, to manifest the historical and contextual basis of the problem will clarify the need for a research on the 'others' of the built environment. The second part on the other hand, explains the research strategy, its contextual framework and methodology putting a special emphasis on data display techniques. The methods used for data visualization are exemplified through some findings.

Part 1: Definition of the Research Problem

Alternative Household Types in Istanbul

In his article 'Nontraditional Family Forms', Elenaor D. Macklin (1980, p. 905) defines the non-traditional as: "All living patterns other than legal, lifelong, sexually exclusive marriage between one man and woman, with children, where the male is the primary provider and ultimate authority." Nowadays, the number of people who choose such an alternative living pattern has been increasing rapidly, and definitions that express the new household types and new living patterns have emerged.

Without a doubt, as the households in all geographies diversify, in addition to the common needs and expectations of the households worldwide, they would also bear some unique needs and expectations emanating from the dynamics, and dwelling culture of their respective 'place's. Within this context, Istanbul is a metropolis with unique assets due to its household size of 3.6 even at the end of the 19th century, the relative large number of non-family groups and the urban development dynamics experienced via existing economic and political conditions. A research by Alan Duben and Cem Behar (1996) shows that the inhabitants of Istanbul were the first to use

considerable birth control, they had the lowest fertility rates and late age of marriage in the late 19th century compared to the rates in other Muslim cities. The 1907 census in Istanbul reports that the nuclear family comprised 40% of all the households and 37% of the Muslim population, which is rather low in respect of today's statistics¹.

Despite the high age at first marriage, the rate of marriage in Istanbul has always been high. The family/household structure used to become complicated and conflicting due to the effects of a cultural structure in which family bonds were strong (Duben and Behar 1996). The dwellings of Istanbul were rather fluid spaces that congregated and separated according to the changing needs, with their varying dimensions and composition over the years (Duben 2009). It could be stated that Istanbul still maintains this asset and thus has a different social structuring than the Western metropolis. Even though life conditions and the communication technologies in the globalizing world isolate the individuals, it is observed that especially in times of crisis the family members living separately tend to bunch up and that the family bonds are mostly stricter than they are in the West. However, the insufficiency of the social support mechanisms is believed to be one of the important reasons of this strong solidarity. It could be assumed that this situation creates a vicious circle. Due to the political system that continuously underlines the importance of family bonds and the related protracted development of social support mechanisms; the individuals seek to overcome hard times with family solidarity. Despite this dependency in families, the demographic data show that the household size in both Turkey and Istanbul gradually decreases. Cigdem Kagıtcıbası (1998) developed the 'emotional interdependence' model to explain the contextual and familial changes that take place in societies dominated by dependency culture due to socio-economic developments. This model is founded on the assumption that individual and group family could co-exist.

According to the report by TUSIAD (1999, p.18), *"the demographic transformation in Turkey has almost been completed. Demographic transformation is the period in which high birth rates and high death rates are taken over by conscious birth control and decrease in death rates"*. The first indicator of a completed demographic transformation is the rapid decline in birth rates. In Turkey, the birth rate since 1945-50 dropped from 6.9% to 2.7% in 1993. In line with this rapid decline in fertility, it is expected that the total fertility rate (TFR) in 2025 would be 1.61 children born to a woman (TUSIAD 1999). Verifying this projection the TNSA 2008 data report that the total fertility rate in Istanbul is 1.78 and 2.152 in Turkey by the year 2008 (Yavuz and Türkyılmaz 2009). The comparison between 1998 and 2008 shows that the rate of never-

married woman in cities increased from 27.7% to 31%, the rate of married dropped from 69.1% to 65.2%, the rate of divorced increased from 1.5% to 2.3% and age at first marriage increased from 21.3% to 22.3% (HIPS 2010). On the one hand, living alone occurs as a personal choice, on the other hand, with the increase in divorce rates the number of single parent families increases, and with the effects of economic conditions more people choose to reside together without marriage or kinship.

Stating that the amount of small households in Turkey has increased since the 1960's 'in absolute terms and proportionally', Murat Balamir (1996) furthers in his article 'The Other of the Housing System: Small Households' that whereas the rate of one-to-three person households in urban areas has gone up to 35% in 1990, it would be approximately 40% in 1996. *"The number of one-person households in urban areas has duplicated every ten years. This growth is twice the increase rate observed in the other household groups"* (p. 523). Whereas the average household size is 4 in Turkey, in every 4 dwelling out of 10 (40%) there are less than four people (TNSA 2003). The comparison of the household size profiles by neighborhood in 'Istanbul Metropolitan Area: Social and Economic Indicators 1990-2000', yet-to-be-published urban atlas by Murat Güvenc, demonstrates clearly the diminution of the size of households by neighborhoods in Istanbul, spreading from the center to periphery in a decade.

Current Situation of Housing for Alternative Small Households in Turkey

According to the 2000 general census, the number of rooms per housing unit in Istanbul does not change in proportion to the household size. Regardless of the size of the household, the most common type is three-room housing unit, followed by four-room and two-room housing units. This indicates a serious problem. Because although four-person households were still the majority (693.998) in 2000 census, one-person households reached 161.860 and two-person households increased to 403.314 (SIS 2000). As the discussion on the extent to which building stock is suitable for the contemporary family and life style continues, the alternative and mostly small households strive for finding housing by reducing the criteria to a minimum and without any expectations of environmental and social support.

The inclusion of demographic factors among factors that determine the urban housing need in Turkey in the development plans and reports of specialization commission took place only in the Third Five Year Development Plan (1973-1977). The conclusion section of the report by Tugyan Dinc (1978) emphasizes the

necessity of arranging housing production in relation to household structure, household size and number of rooms in present housing stock.

Balamir (1996) draws attention to the rapid decline in the small housing stock and the unavoidable rise of three-to-four room housing units. The ordered and proportional production between 1965 and 1975 turned upside down after 1975. Yet, especially in big cities, the rent of one-to-two room housings are higher than three-to-four room housings. Although it seems to be due to the scarcity of small units, this situation is now permanent. The construction industry still did not realize the importance of production of small housing units. Hereof, Balamir (1996) points out to the conditionings. Deeply rooted traditions and some norms in the society have defined normal 'family' and 'households', and the small households identified with some inconvenient behavior are conceived of as threatening (Balamir 1996).

Beyond the disturbed balance between the household size and housing unit size, the meanings attached to the houses and the living environments of alternative (and mostly small) households both by themselves and other people, and their space use patterns diversify inevitably. Although household type is as effective as socio-economic status differences and culture in diversifying the use of space, it is still an overlooked subject in Turkey.

Different household types use the same houses, neighborhood and urban space each in their own ways, and attach different meanings to built environment. For instance, a lone-person household may tend to render the domestic space multifunctional and flexible, whereas two house sharing friends might have well-defined private and social areas in home. Semra Aydın (2004) states that, meaning functions as an interface that defines the relationship between the dwelling and the user. Dwelling includes a layering of meanings by the shared values. In Istanbul, despite the diversifying households and newly emerging values, the housing units become increasingly the same. Dwelling is a phenomenon that by definition necessitates the continuous interdependence of qualitative and quantitative values. What matters is the experience in the dwelling, and hence, it should be questioned the extent to which these experiences could diversify in a standardized housing stock. Especially since a few decades, some housing concepts such as residences and lofts are adopted from foreign cultures and countries for marketing purposes that address high-income groups under the disguise of 'innovation'. It would be proper to point out the lack of experiment and experience in alternative solutions. The uniformity of the present housing stock in Istanbul does not allow non-traditional small

households to make choices and satisfy their expectations. Therefore, it is significant to explore the diverse needs and common denominators of varying household types in that it bears a potential for presenting new design criteria.

Part 2: Research Strategy & Data Display

This research primarily seeks to answer how the dynamics of metropolitan life (in Istanbul) impact and diversify dwelling culture, and how the transformations that could be read through the concepts attachment, privacy, flexibility, fluidity and temporariness influence the interaction between the alternative small households and the socio-physical system in all the three scales: Istanbul, neighborhood, and domestic space.

From an ideological perspective, the study embraces critical theory in that it tackles the transformation of the relationships between the different scales of the built environment and the non-traditional households as the alternatives of the smallest social institution, the nuclear family. Hence, it may function as a tool for self-questioning for the individuals that participated in the study (Creswell 1998). It is believed that, understanding the physical (spatial), social, and emotional needs and expectations of the often-neglected but crucial actors who also participate to the constitution the social and systematic relationships in the society is particularly significant.

The research adopts an inductive and interpretive approach, and it is designed as cross-sectional and exploratory. The research is formulated in a way that would grasp, even for only once, both the linear and cyclical temporal experiences (past experiences, current satisfaction and expectations for the future) within the life cycle of the individuals.

It is unattainable to share in this paper, all the findings and results that are obtained by a data gathering and analyzing process built upon the main concepts of the multi-scaled and stratified contextual framework of this research. Thus, rather than a broad discussion of the findings, this paper concentrates on the research strategy and visualization of data. After introducing the contextual framework and methodology of the research, the techniques of data display will be exemplified through findings on the chosen concepts.

Contextual Framework

Shelley Mallett (2004) underlines that home is a space inhabited by family, people, things and belongings where particular activities and relationships are lived. "Home is a 'socio-spatial system' that represents the fusion of the

physical unit or house and the social unit or household” (p. 73). Therefore, the basic forms of social relationships and institutions occur and reproduce themselves in this physical environment. The physical aspects of home -location, design, size, etc.- render different forms of relationships and activities possible or limit them. A comprehensive examination of home should not overlook the interaction between place and social relationships. Likewise, Ozan Karaman (2004) states that space could only be conceptualized correctly by means of the relationships it entails, and thus, a process-based perspective could be possible only if ‘place’ is considered as relational. The review of the human-environment and household studies with a viewpoint that considers place the basis for human interaction and communication generated the foundation of the contextual framework of the present study: Psychological processes, physical environment and temporal qualities described by Carol M. Werner, Irwin Altman and Diana Oxley (1985), and three categories of socio-physical system (place, activities and relationships) defined by Toomas Niit (1993).

Brigitte Franklin (2006) criticizes the environment-behavior studies for neglecting the institutions and organizations of the society and proposes a very inspiring, three-layered contextual framework -composed of structure, actor and representation- that would incorporate them into the actors that shape the built environment. However, it is not possible to claim neither the existence of a built environment oriented towards alternative households nor these actors being prominent in Turkey. Therefore, the study at this phase primarily focuses on the non-traditional alternative households (their evaluations, perceptions, meanings they attach to and use of space) who represent only one group that is effective in shaping the built environment. Nevertheless, it could not be neglected the necessity to expand this study so that it would cover the other actors in the society (institutions, architects, developers, etc.).

What follows is the proposed contextual framework for explaining the interaction of people (as households alternative to the nuclear family) with the built environment (Fig. 1). The relationships, activities and place definitions of the alternative households are examined by means of the concepts attachment, privacy, flexibility, fluidity, and temporariness which are believed to be suitable for questioning the transformation of dwelling culture in the 21st century metropolises.

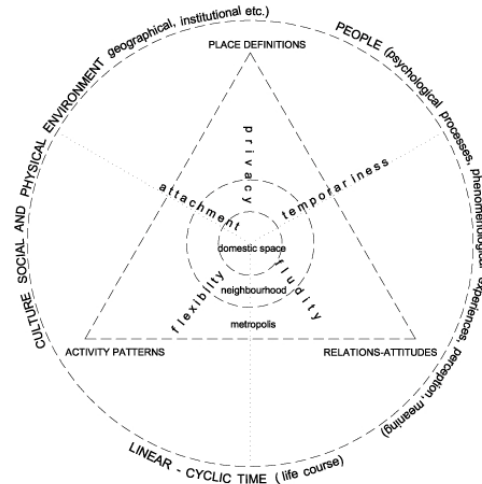


Figure 1: Contextual framework

Research Methodology

The research model of this study makes use of both qualitative and quantitative methods in a dialectical relationship so as to obtain methodological triangulation. The data collection instruments are a short questionnaire, semantic differential scale, semi-structured interview, photo-interview, field notes, sketches and photographs.

The stratified and purposeful sample is composed of four sub-groups (lone-person households, single parent families, dinks and house sharing friends). 5 households from each group with the total number of 20, comprising 30 household members formed the sample.

First, each participant answered the short questionnaire, which included questions on personal information, closed-ended questions on significant subjects that might enable triangulation and multiple-choice questions about activity patterns. Then, the interviewer posed some questions to understand the past and present dwelling experiences of the participants, rather than focusing on certain concepts. Subsequently, the semantic differential scale was applied to evaluate the degree of satisfaction and attachment in all three scales of the built environment (Istanbul, neighborhood, and domestic space). When disparity was observed, more profound questions were directed to the participants to reveal the underlying reasons. Data collection proceeded with the semi-structured interview with questions grouped according to the concepts of the contextual framework of the research. The interviews took place in the houses of the participants. Each and every member of all households (ranging from one-to-three)

participated in the research. Both the interviews and the photo-interviews were made individually in order to avoid the possible exterior influences.

The researcher, as a participant observer, took notes on how household members used the domestic space, their attitudes towards the visitors and other general impressions. Moreover, sketches of the houses were drawn in order to facilitate the application of photo-interview technique, which expects from the participants to answer questions by taking photos and to explain the reason for taking them.

A Quest for Visualizing the Data

The variety obtained by using multiple methods in data gathering reflected itself also in the analysis and the display of the findings. In addition to the quantitative evaluation of the questionnaire and the semantic differential scale, the method chosen to analyze the qualitative main body of data was content analysis. The initial activity of content analysis, data coding, was executed in a general framework by introducing some pre-categories and themes and new codes were added to the list in process. Finally, the data were reorganized within the system derived from coding and thematic coding to achieve specific themes.

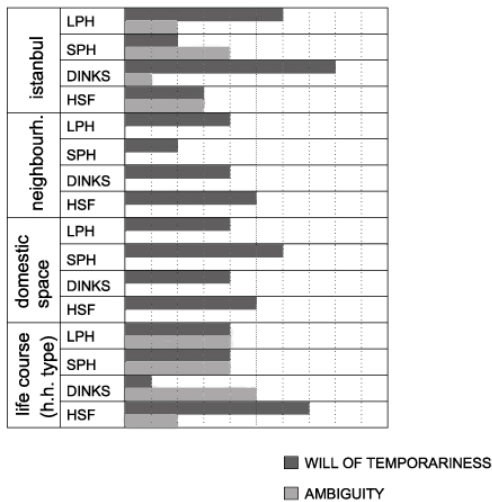


Figure 2: Will of temporariness according to household types

One of the main concerns of this study was how to comprehensively visualize and present the data collected with different techniques and required diverse methods of analysis for each concept that helps question the interaction of the alternative household members with the

built environment. For instance, the chart above compares the will of temporariness of different household types in three scales of the built environment and life-course (Fig. 2).

From this chart, however, it is not easy to notice the interactions between modalities of two categorical variables, the household type and the scale of the built environment. Correspondence analysis allows the visual discovery and interpretation of these interactions. 'It is a statistical visualization method for picturing the associations between the levels of a two-way contingency table' (AIACCESS 2009). The label 'correspondence analysis', in French 'analyse des correspondances', is a term associated with the work of Jean Paul Benzecri (1992) where the term correspondence denotes a 'system of associations' between the elements of two sets (Bee-Leng Lee 2010). Diane Phillips (1995) claims Pierre Bourdieu's 'Distinction' as the 'locus classicus' of sociological correspondence analysis. Bourdieu (1986) used this analysis technique to provide a detailed illustration of his thesis that the determinants of taste, cultural discrimination and choice lie in the possession of two forms of capital, economic and cultural. Since correspondence analysis pictures the associations between the row categories and the column categories in the same space, it is easier to conceive the data and to interpretate it (Fig. 3).

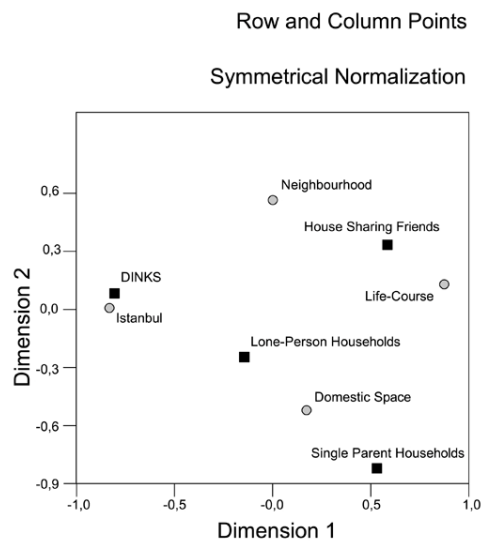


Figure 3: Correspondance analysis of will of temporariness

The visualization of the data from the 'Correspondence Table' by using the graphic technique developed by Jacques Bertin (1981) makes it more legible to recognize the over representations in the dataset (Fig. 4). What matters in this technique is not quantity. It is believed that this technique would be useful and explanatory for presenting the knowledge obtained from the qualitative studies that are conducted with few samples.

Scale	IST	NEIG.	HOUSE	LIFE-COURSE	% IN TOTAL
Hhtype					
DINKS	53,3	36,4	28,6	8,3	32,7
LPH	20	9,1	14,3	16,7	15,4
SPH	6,7	9,1	21,4	16,7	13,5
HSF	20	45,5	35,7	58,3	38,5
TOTAL	100	100	100	100	100
	28,8	21,1	26,9	23,0	100

Figure 4: Graphic representation of will of temporariness

Figure 3 and 4 make some of the themes about temporariness clearly legible. They show that the DINKS think about inhabiting Istanbul temporarily and leaving the city more than the other household types. The data gathered by the in-depth interviews reveal various reasons such as economic difficulties, lack of leisure time for interests or the self, fatigue, search for peace and nature, security concerns, and passing the senior years in the hometowns that lie behind this need. The groups that consider the least 'being temporary' in Istanbul, or in other words the ones willing to live permanently in Istanbul, are single parents and house sharing friends. The interviews show that the metropolitan life enhances the sense of freedom especially for the single parents, who are mostly women. The single parents are also the group that is willing to move to another house. They underlined their problems related to the dwelling size due to the economic problems they face. House sharing friends avoid having relationships with their neighborhoods because of fear of prejudice and they mostly think of moving to another neighborhood. In terms of life-course (and especially in terms of household structure), house sharing friends believe that they are experiencing a temporary period.

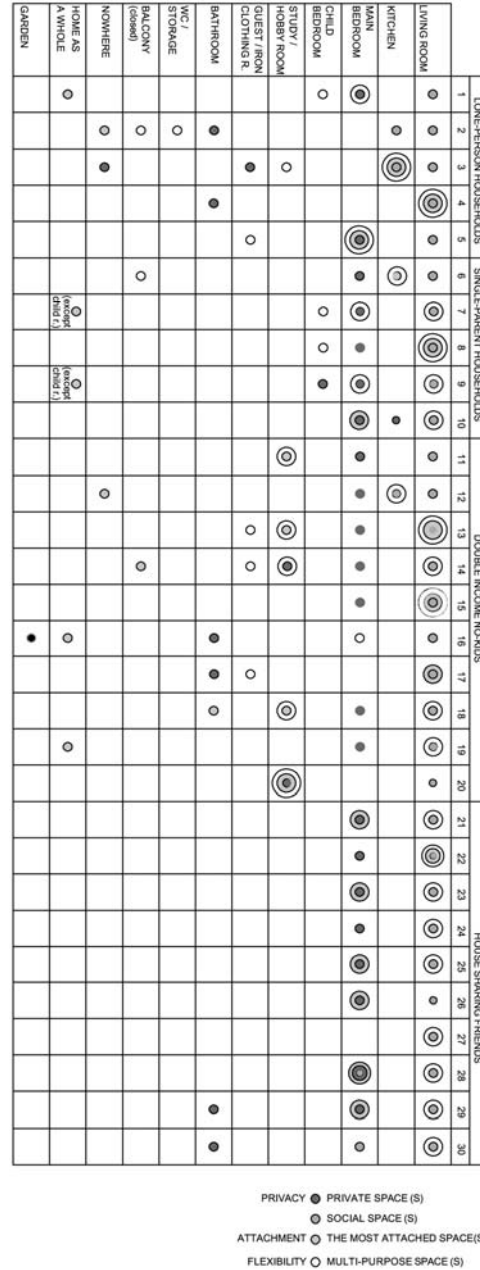


Figure 5: Scale and space depended comparisons among themes (privacy, attachment and flexibility)

One of the important goals of the research was to understand what kind of differences exists in terms of use of domestic spaces and meanings attached to them among different household types. Thus, the aim was to make a table that would enable a comparative evaluation of the

concepts (attachment, privacy, flexibility) in relation to the domestic spaces. The above chart (Fig 5) is prepared by overlapping the spaces described as the most private, social, flexible and as the ones that generate the most attachment according to the household types.

It shows how the symbolic meanings attached to the domestic space and the aim and pattern of uses diversify by each household type. Many interpretations may be done depending on this chart. A major one is that, the boundaries of the rooms seem to be strictly defined both functionally and symbolically for house sharing friends. Living rooms are the social and multi-purpose places, whereas bedrooms are the places of privacy and attachment. On the contrary the lone-person households use the whole domestic space more flexibly and attach further meanings to each space beyond general agreements.

Photo interview was one of the techniques used for data gathering. This method required participants to answer certain questions by taking photos that enabled them to see their homes through the visor. In addition, the data gathered by this technique incorporated participants into the research with all their senses, beyond verbal participation, which in turn enhanced the visual character of the data display². Participants also explained why they had taken the photo of 'that particular place/corner/furniture' and their answers were coded.

Among findings of the photo-interview two of them come into prominence. One is that, the desire for privacy at home could cause some spatial expectations that vary according to the household types. For example, especially for the house sharing friends, an entrance door directly to the common space, thus the lack of an entrance hall conflicts with the privacy expectation and causes annoyance. The other one is that, the idle or non-functional spaces become a source of anxiety for the lone-person households (Fig. 6).



Figure 6: Foto-interview findings

Conclusion

As it is well known, social research that examines people who inhabit and use the spaces of architecture serves for design research which focuses on the processes of shaping and structuring of places. Built environment in different scales is where relations and activities take place. The findings of this research help explain the relationship of alternative small households with the built environment. Although the findings of the research indicate the appropriateness of the concepts (attachment, privacy, flexibility, fluidity and temporariness) chosen to explore the place definitions, activities and relationships of alternative small households, some appeared to be more dominant in certain scales (metropolitan, neighborhood and domestic) for certain household types. However, what is critical is the significance of the household type as a considerable factor, with its potential to contribute to the transformation of dwelling culture. All four household types display both common and diverse needs and expectations concerning the three scales of the built environment.

Yet, people are involved in various household types in the course of their lifetimes. Hence, design of the built environment - both the city comprising the housing stock, and the housing units - should accommodate such diversity and flexibility. The ongoing trend in Turkey of considering the nuclear family a standard design input should be reassessed. The findings of this study emphasize the need for housing alternatives in Istanbul that allow for local values in a globalizing world and introduce non-traditional households as potential actors in the housing market.

Notes

1 According to (SIS, 1995), this rate in 1985 in Istanbul was approximately 60%. A more recent data of TUIK (2010) show that 63 % of the population in Istanbul is married (with or without children) by the year 2008.

2 This technique is inspired from the method employed by Dumreicher and Kolb (2006) within the scope of the 5-year research program, SUCCESS (Sustainable Users Concepts for China Engaging Scientific Scenarios). The SUCCESS project asked the participants, selected by a group of social scientists, to take photographs from their villages that reflect their personal opinions, and then to recount the topics of the photographs during the interview session. Photo-interviewing corresponded to the active, participatory process that generated data for photograph and text analyses. However, this research used photo-interview technique as a secondary data gathering method and asked the participants to reply some questions by taking photographs and to provide reasons for photographing that particular 'place'. Hence, the technique employed proved to be goal-oriented and controlled.

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