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Universal Housing — Evaluation of the Spatial Qualities of Apartments in Albania

Anna Yunitsyna

Epoka University
Rruga Tiranë-Rinas Km 12, 1039 Tirana, Albania, ayunitsyna@epoka.edu.al

Abstract

Composition and spatial organisation of the dwelling can vary due to the multiple factors, such as economical, climatic and cultural, but the functional organisation of dwelling is defined by basic human activities. There is a desire in the new paradigm of construction the dwelling, which may satisfy the constantly changing needs of the inhabitants. Universal dwelling can be based on principle, so that every room can easily adopt the basic living activities without significant structural changes. Universality in use can be achieved by several techniques – by creating the spaces with equal size, access and similar spatial qualities. Contemporary housing in Albania is constructed without following of any housing space standards, which makes it important to evaluate the spatial qualities of the existing housing developments and to propose the basic guidelines for construction. Within the study 90 apartments built during last 25 years are analysed and the general tendencies of the changes of the spatial properties of the habitable rooms are explained. The concept of universality is used as an instrument, which allows to evaluate the design solutions.

Keywords:	Dwelling space standards, Universality in use, Housing in Albania
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1. Introduction

Contemporary housing architecture in Albania takes the specialized and mainly mono-functional room as design unit. At the same time with the increasing costs of land and construction there is a tendency towards the reduction of the area of habitable rooms of dwelling. The size of dwelling is decreasing until the minimum one, which could be accepted by planning and design state controllers. The demand for the space within dwelling, which could be used differently and potentially can adapt several living actions, is also not reflected in the housing market. The user's desire towards the housing structure is shifting from the homes with consequent arrangement of predefined spaces, such as kitchen, living room and several bedrooms towards the spaces with lower specification [1]. It becomes an inhabitant's individual decision, where to place a single living function, and which variety of activities should be kept in house.

In Albania, the approach towards the dwelling construction during the last 35 years has been radically changed. At the communist period (1980–1990) there was a strong influence of the ideology to the dwelling design. The size of the apartments and rooms, the variety of spaces and the ways of their interconnection, the building materials and construction technologies were limited. The same set of "typical projects" of dwelling was applied in all areas of Albania. Within the typical project, all apartments had the same spatial structure, the rooms with similar areas and proportions; the living room was always joined with kitchen. The construction of housing was done according to the state standards and all the rooms were projected as specialized spaces.

After the communist period approach towards the dwelling design was radically changed. The space standards, which limited the minimal and maximal areas of rooms, were cancelled and the variety of the apartment typologies was constructed. The overall size

of the apartments increased, but the spatial quality of design without the state regulation appeared to be very low. Within the dwelling some habitable rooms and especially the service spaces like bathrooms became oversized, the bedrooms became smaller, and some spaces had lack of the natural light. The access to the apartment could be organized directly to the living room without designing any buffer area or corridor.

During the contemporary period of housing design in Albania, there was no specific attempt to design the dwelling with the habitable rooms without the predefined function, but due to the lack of state housing space standards the apartment's designs may have the prerequisites to be universal. Within the present study the large collection of the apartments has been tested in order to show the trends of the changing spatial qualities of the habitable rooms and to evaluate their possible universality in use.

2. Universality in apartment

There are several theoretical presumptions regarding the minimal size of the room. For the mono-functional space the first attempt to define the universal size was done in 1950 by Le Corbusier. He proposed a living unit with dimensions 2.26×2.26×2.26m, "alveolar volume" – "a container of men, cellular volume, which allows a great variety in composition" [2]. The unit was understood as container, which could hold only one function – bed, table, kitchen etc. Those containers could be attached to each other in order to create infinite number of layouts [2]. According to B. Leupen minimal dimensions for the social space in house are 4×4 m [3], which gives a certain degree of universality – every space with such size can potentially have this function, and if there are more, than one of the spaces in unit can overtake function allowing exchanged between those spaces. Bernard Leupen proposes 6 basic activities: working, sleeping, eating, cooking, bathing and getting together. Each of these functions requires a specific space and also each has different importance for the human life.

Adaptability is defined by Kevin Lynch as "generalized adjustability of the environment or artefact with minimum effort to future changes of use" [4]. In other words, for greater adaptability any shape or structure must be simple, averaged suitable for majority of users. In physical setting this type of flexibility can be achieved by using the unspecialized forms. The house with one simple square room is more adaptable than one with the elaborated design and complex organization.

T. Shneider proposed two general methods in achieving flexibility, which are defined as "hard" and "soft" techniques [5]. Soft techniques are expressed through bringing the certain indeterminacy in design solution, to adapt the dwelling plan according to the needs of users. Hard techniques, as opposite, are related to the prescription of the way house and the house design may be used. In this case the physical limits of the space are predefined. Soft use is primarily associated with the vernacular housing. The dwelling belonged to one family and it was built to meet the changing demands of it, to adapt in one house children and elderly. These traditional houses usually included one bigger space for the family gathering and certain number of rooms of the similar size equal in access. The approach of the soft use for the designer means "to provide a physically fixed, but socially flexible layout".

B. Manum examined the potential usability of dwellings by evaluation of the level of its generality or specificity [6]. Generality is the ability of dwelling to accommodate the variety of demands without making any physical changes in it. Specificity is the opposing strategy and aims to respond precisely to needs and demands of the inhabitant, to follow the detailed requests. The key factors affecting generality according to Manum refer to the physical properties of the room such as size and shape of the room, daylight conditions and technical equipment and to the context of the room such as accessibility and surrounding rooms

In the "Timeless Way of Building" Christopher Alexander explains, that the quality of the place, even being the result of the individual perception of human, depends on the pattern of events and what could happen there [7]. In housing the room becomes such agent of the living pattern. The quality of building depends on the usual everyday actions happening there, and if more events can happen, then more liveable the place becomes. This statement is supported by Charles Jencks, who preferred multivalence in architecture in opposition to polyvalence [8].

Universal space can adopt to the wide variety of the living actions within one household without structural changes of the dwelling space. Within the universal room all four basic living actions can be performed. The application of such type of space can reduce the financial and resource waste for the adaptation and make the dwelling more sustainable. Universal dwelling can easily reflect on the changing demands of the inhabitant.

Universality in use is directly connected with the size of the room, which means, that the biggest required size for the living activity (getting together, which is represented by living room) is the minimal size of the room to become universal. The width of the room is the second key factor, which defines the universality in use. Minimal width is established for the living room, kitchen and bedrooms and may vary according to the number of inhabitants. The maximal width is required for the living room, which established the minimal width of the space

to be universal. Access to the room is a third factor, and the highest restriction by access is applied for bedrooms. From this side of view rooms with just one points of access are considered to be universal. The criteria of universality are developed after the analysis of the 31 state European and 7 regional European dwelling standards.

3. Selection of the case studies and data patterns

Present study concentrates on the development of apartment with three rooms, which is the most constructed typology in Albania during last 30 years. The universality of the room is understood as a possibility of it to host any of the four living actions, which are represented in dwelling as kitchen, living room, double and single bedroom. The rooms of the apartment supposed to be projected as specialized. Within 90 studied examples the majority is located in Tirana and the rest in the regions of Albania. The selected apartments are designed as one-floor apartments in order to exclude the extra circulation space of the stair. Case studies are separated in three groups according to the year of construction: the apartments of communist period (1980-1990), the apartments of the period of transition (1991-2000) and contemporary apartments (2001-2013).

The further extraction of required data proceeded through the graphical analysis of each apartment. The plan of the apartment was analysed using the following technique: the raster image was imported into vector program, rescaled and redrawn. Within each apartment four target habitable rooms were indicated. For the analysis it was assumed, that each room has not any predefined function. The rooms were numbered from 1 to 3 according to the size. For each room its area, width and the number of access points was measured and noted. During the graphical analysis each space was tested consequently against three criteria of universality, and the resulting diagram of universality was developed.

3.1. Universality of the room by size

Diagram of the Figure 1 presents the distribution of the areas of the analysed four rooms of selected cases during last 35 years. Within each apartment the comparison is performed consequently for the groups from biggest to smallest room.

In given distribution there is a clear division in size between the first room and two others. The areas of the rooms 2 and 3 are close to each other. The overall figure shows increase of the area of the room 1, which is as usual the aggregate living, dining and cooking room and decrease of the area of the smaller rooms with time. The maximal, average and minimal areas of the analysed spaces are presented in Table 1.

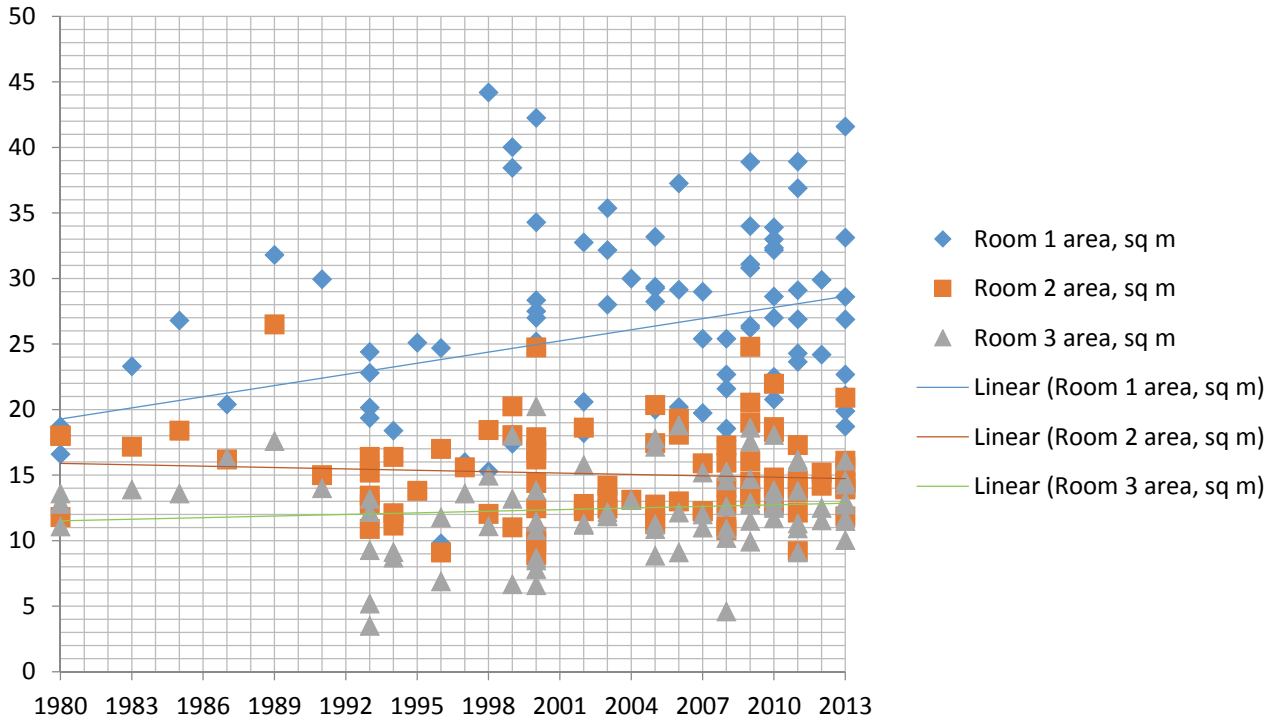

Figure 1. Size of the rooms 1–3, sq. m. and the year of construction

Table 1. Minimal, average and maximal areas of the rooms 1–3, sq. m.

Room №	Maximal area, sq. m.			Average area, sq. m.			Minimal area, sq. m.		
	2000–2013	1990–2000	1980–1990	2000–2013	1990–2000	1980–1990	2000–2013	1990–2000	1980–1990
Room 1	41.60	44.20	31.8	27.5	23.3	21.8	10.6	10.6	18.70
Room 2	24.79	20.25	26.5	15.0	14.5	18.0	9.2	8.9	11.80
Room 3	20.25	24.40	13.6	12.9	10.8	14.0	4.6	3.5	11.08

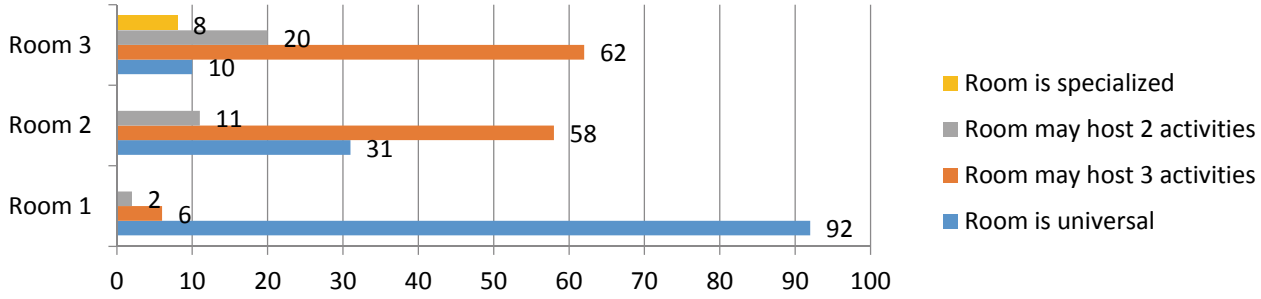

Figure 2. Universality of rooms 1–3 by area, in %

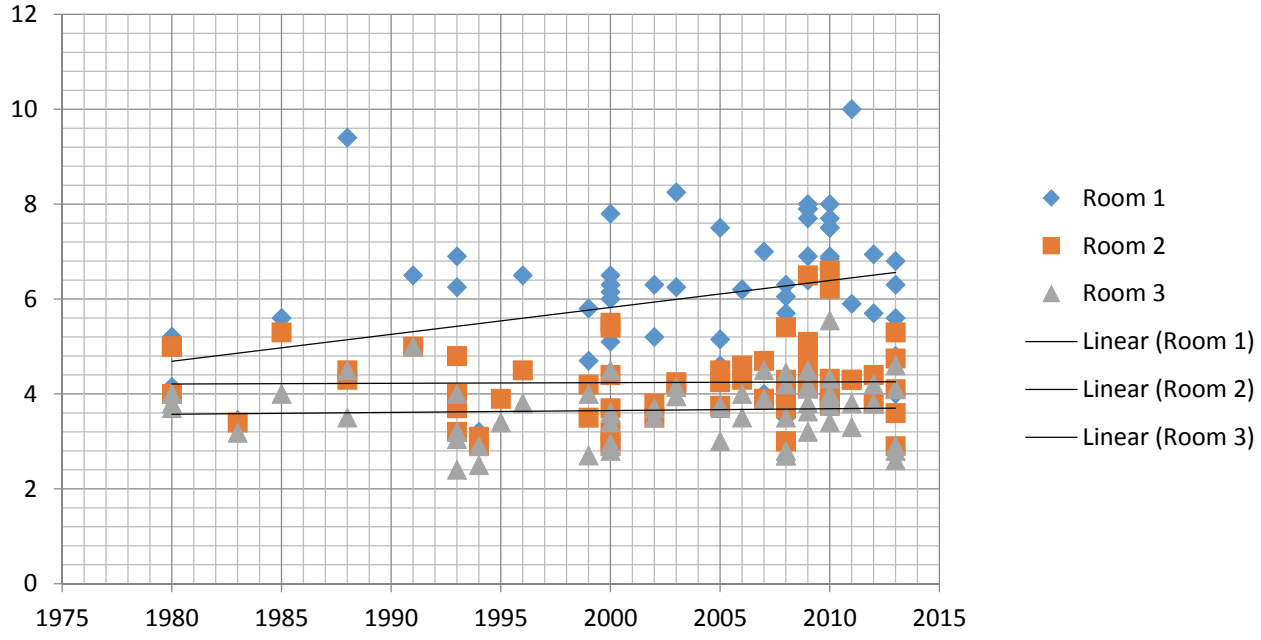

Figure 3. Width of the rooms 1–3, m and the year of construction

The further analysis (presented in Figure 2) shows the level of universality of each of the four rooms using the following criteria:

- Room is universal, if its area is more, than 16.4 sq. m.
- Room may accommodate 3 activities, if its area is 16.3–11.2 sq. m.
- Room may accommodate 2 activities, if its area is 11.2–8 sq. m.

– Room is specialized, if its area is less, than 8 sq. m.

The level of universality is decreasing with decreasing of the size of the room. In most of the analysed cases the biggest room of the apartment is universal by size. For the rest two rooms in more, than half cases the room may accommodate 3 activities, which presents relatively high level of universality. With further decrease of the size increases the number of rooms accommodating 2 activities. Room 3 can have very small size and be specialized.

3.2. Universality of the room by width

Figure 3 shows the distribution of the widths of the each of the four rooms of analysed cases during last 35 years. Within each apartment the rooms are numbered according to the size of the room.

The diagram (Figure 3) shows a clear division in minimal width between the first room and the others. The width of the rooms 2 and 3 are close to each other and have tendency to be unified. The minimal width of the room is consequently corresponding to its size. The overall figure shows increase of the minimal width of the room 1 during last 35 years, meanwhile the widths of the rooms 2 and 3 remain stable. The minimal, average and maximal width of the analysed rooms is presented in Table 2.

The further analysis shows the level of universality of each of the four rooms using the following criteria:

- Room is universal, if its width is more, than 3.1 m.
- Room may accommodate 3 activities, if its width is 3.1–2.5 m.
- Room may accommodate 2 activities, if its width is 2.5–2.2 m.
- Room is specialized, if its area is less, than 2.2 m.

Figure 4 shows the percentage of the space with different levels of universality by width for each of the 3 rooms.

The overall universality of the rooms by width is higher, than by area. Majority of the analysed spaces has sufficient width for accommodation of all basic living activities.

3.3. Universality of the room by access

The spatial structure and composition of the apartment in Albania depend directly from the period of construction. During the communist period in all country

Table 2. Minimal and maximal width of the rooms 1–3, m

Room №	Maximal width, m			Average width, m			Minimal width, m		
	2000–2013	1990–2000	1980–1990	2000–2013	1990–2000	1980–1990	2000–2013	1990–2000	1980–1990
Room 1	8.25	6.9	9.4	6.30	4.9	5.3	3.5	3.1	3.45
Room 2	6.60	5.0	5.3	4.26	3.9	4.6	2.9	2.9	3.40
Room 3	5.55	5.0	4.5	3.70	3.4	3.8	2.6	2.4	3.80

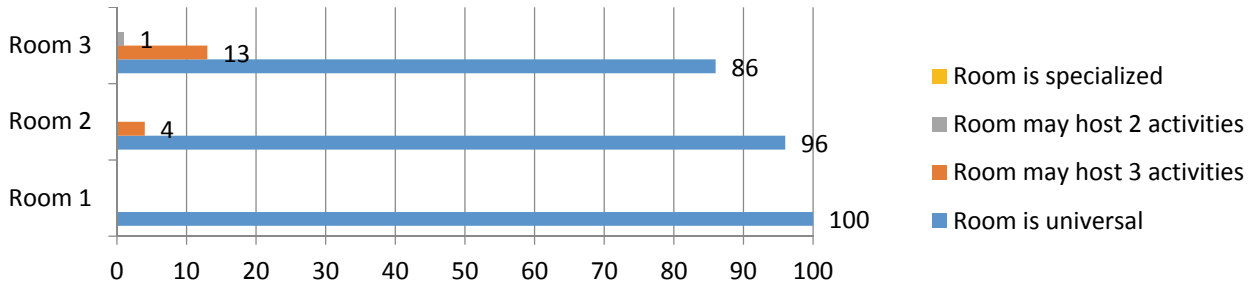

Figure 4. Universality of rooms 1–3 by width, in %

there were used few typical projects of dwellings, where the living and dining room and two bedrooms were accessed through the corridor, which was established in the construction regulation. Later periods are characterised by the lack of dwelling space standards. Within the analysed apartments there were found together with the traditional corridor scheme the arrangements, which had the outer door of the apartment opening directly to the living room, or the bedroom, which also should be accessed through it.

3.4. Universality of the apartments during the three periods

The main specificity of the analysed housing designs is the way, how the habitable rooms are changing from communist to contemporary periods. It is noticed the huge difference between the biggest room and two others, which is the result of the functionalistic approach in design. The main room is usually projected as the integrated cooking, living and dining area and it is almost double bigger in size the other two rooms. The other two rooms remain stable in size. The growing differentiation in areas shows the increasing specialization of the biggest room. Inclusion in its structure the kitchen with all technical facilities and equipment makes it's hardly possible to assign to this space another living activity. The other two rooms at the same time are differentiated and have very small area. By the criteria of the width the analysed rooms have the sufficient dimensions to be universal. Potentially any kind of furniture or equipment may be accommodated. The universality by circulation is declining with time, which is directly connected with the cancelling of the state housing standards. Every room of dwelling of communist period was designed to have one entrance, meanwhile during the later times the living room could have multiple entrances and circulation from bedrooms to the toilets could pass through it.

4. Conclusion

The study shows, that in Albania currently dwelling is constructed as a system of specialized spaces, but in the future development it is possible to solve the problem of the alternation of the specialized dwelling structure with the changing needs of the inhabitant. Creation of the universal dwelling can be achieved through the balance of areas of the habitable room with slight reduction of the living and cooking area and similar increase of the area of two smaller rooms until 16.4 sq. m. Second strategy may be the separation of kitchen from the living room with allocation of the separate entrance to it. The overall size of the apartment in both cases will not change.

In Albania there is no dwelling space standards, which regulate neither, minimal sizes and proportions of the habitable rooms nor the whole apartments. The study presents the current situation for these parameters, such as the area of the living dining and cooking room and bedrooms, minimal widths of spaces, which can be used as the guidelines for design.

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