

CENTRALISED OPERATION OF RESIDENTIAL BUILDINGS: A CASE STUDY OF THE OLD BUDAPEST

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Abstract

With the age of Big Data in Facility Management, new systems of centralised operation are now available. How do those systems meet inhabitants' requirements? As a case study from the past, socialist Budapest provides 40 years of experience for developers of new building operation systems. Budapest's residential housing stock was operated by a single mega organisation, one centralised, state-owned company. The author has researched historical Budapest records of building operation from 1950 to 1985, gathering data on the resources used for maintenance and renovation. In parallel, data were gathered on customer satisfaction based on selected local daily publications. Under Hungarian Socialism, the residential segment and housing was a topic about which the public had limited opportunities to voice their criticism. This criticism appeared in various forms: letters to the editor, jokes and journalist reports. The housing stock, the applied resources and inhabitants' opinions were analysed together in order to identify trends in the period of centralised operation. The study may be used as a significant input for new, intelligent systems of centralised Facility Management; however, the study's applicability may be limited as the political context changes.

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1. Introduction, relevance of the subject, hypothesis

Now considered common knowledge, the real estate sector, and more specifically real estate operation, is entering a revolutionary new era. With Big Data, Artificial Intelligence (AI) and the Internet of Things (IoT), new, larger than ever, centralised operation systems can be created. The expected benefits of this new era are well known; however, many years of experience are still needed to be able to obtain and evaluate practical results and consequently fine-tune those systems. The research presented here aims to build on the knowledge of the past to inform the future design and deployment of large real estate operation systems.

The period of socialism in Hungary (1946-1990) can be considered as a kind of great experimental laboratory. As such, the period has been interpreted as a societal "Petri dish" by scholars who wrote critical analyses of socialism as a social order (see [1], [2] and [3]). We believe that this period and its social phenomena can also provide useful lessons for the new era of the real estate sector (see our previous study on the SMART initiative's forerunner [4]). During the various periods of socialist central control in Hungary, increasing resources were allocated to the maintenance and repair of housing units. In Budapest, building operation was centralised to a significant extent during this period. In this study, we wish to examine how end-users, i.e. residential perceptions, reflected the increase in resources; simply put, whether the additional expenditure incurred by centralisation paid off.

Our analysis here is not based on using Market Value, as defined by the RICS [5], but the "community value", or "public good", which is becoming increasingly common in housing market analysis [6]. This approach is independent of the prevailing market and price level, so the results obtained in this way can be independent of the economic factors at the time and their changes over time. Under socialism, the community's opinion, the "voice" (see Kornai for details, [3]) was mainly expressed through the various press products, and the press amplified that voice towards decision-makers and bureaucrats.

Accordingly, the research uses a statistical approach to the contemporary press thereby mapping the methodology of Stated Preference of community evaluation [7].

The hypothesis of the research is that the increase in resources allocated to centralised operation in socialist Budapest increased inhabitants' satisfaction.

The research period starts in 1960, following the post-World War II reconstruction cycle and the consolidation period after the Hungarian Revolution of 1956. The period ends in 1985 with the beginning of the mass privatisation of public housing, making the overall study period 25 years.

After the introduction above, the study follows the following structure: the first section presents the relevant literature, first the history of socialist housing operation, and then the literature on modern, centralised real estate operation. The second section describes the research methodology and the data sources used. The third section presents the research findings, and, in the final section, the lessons promised in the introductory part are drawn, the hypothesis is evaluated, the limitations of the research are described and the future research programme is presented.

2. Literature research

Socialism in Hungary lasted from 1948, "the year of the turning point", until the change of regime in 1989, and this period can be divided into four phases [8]. The first phase between 1948 and 1953 was the period of post-war reconstruction in terms of the housing market, and the institutional system of forced centralisation was also established then. The defining event of the second phase is the 1956 Revolution and the slow consolidation that followed, a period of turbulence that is also not suitable for our analysis. The third period, from 1960 onwards, is called the early Kádár era, while the later years of Kádárism, known as Goulash Communism, lasted until the regime change in 1989. During this period, from 1985 onwards, mass privatisation of housing began [9], and with that the erosion of the previously established centralised system [10]. As such, the period chosen for the present study stretches from 1960 to 1985, which can be considered as a roughly homogeneous period from the aspect of the real estate market.

Hungarian housing statistics have a long tradition, with very long time series and comprehensive analyses available [11]. However, the detailed data of the period are only available in processed form, and there is no doubt that authors of the period interpreted such data according to the political needs of the moment. It is against this background that we need to assess the available data publications and statements.

The housing stock of Budapest changed significantly over the period. The Second World War caused enormous damage to Budapest's housing stock. According to the data of the census of March 1945, more than 70 percent of all residential buildings in Budapest, i.e. over 66,000 housing units, were damaged, of which 23.1 percent were severely damaged and 3.8 percent (13,588 residential units) were completely destroyed [12]. Data on housing construction in Budapest during the period under review is shown in Figure 1. The total number of housing units built exceeded 300,000, resulting in an increase of nearly seventy percent on the previous housing stock. At the same time, overcrowding did not decrease and housing shortages persisted [13].

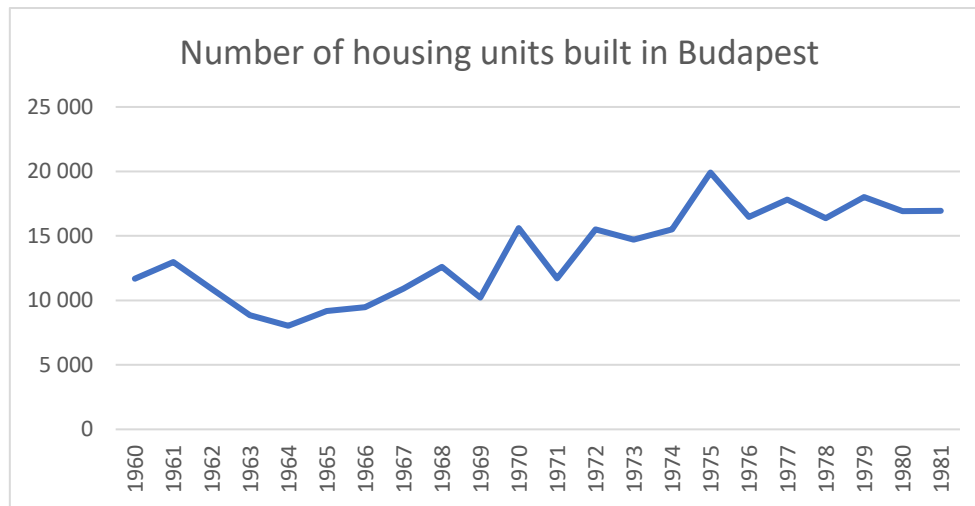


Fig. 1. Number of newly built housing units in Budapest. Source: [14]

In the period under review, i.e. from 1960 to 1985, the central body of state construction management was the Ministry of Construction and Urban Development [15]. The first department of the Ministry was responsible for housing management, while the sixth department was responsible for real estate operation [15]. The actual functions of housing operation were transferred to state or local council-owned companies [16]. In Budapest, the Budapest Property Management Company (Fővárosi Ingatlankezelő Vállalat, FIK) and its directorates coordinated the tasks related to the operation and maintenance of state-owned real estate [17], so, in today's real estate terminology, FIK performed property management tasks.

Nationalisation was a key step in the centralisation of housing management. In 1952, all properties with more than six rooms and all state-owned corporate properties with more than 50% state ownership were transferred to the ownership of and managed by the Hungarian State [18]. The institutionalisation of property management continued until 1960. Direct supervision was transferred from the state to the city councils, which set up property management companies for implementation purposes. From 1960, records were added to a unified technical register, and this date marks the beginning of an institutionalised and permanent centralised operation [15]. In 1971, a so-called housing reform was introduced, which regulated and partially opened up the housing market [19]. A change of approach occurred in 1981, when the government made housing modernisation and maintenance a priority, recognising that mass construction could not address a significant part of society's housing problem [17].

Housing management served as a channel for defusing social tensions, and was one of the few topics on which the population could express their opinions and criticisms [1]. This opinion was the social "voice" that appeared in public discourse, in the daily and weekly press, in literary works and in films [3]. There are countless examples of this, but, in Hungarian film art, films parodying the housing situation were released almost every year. Undoubtedly, the publications of the period do not represent a complete record of public discourse, but their intensity, or changes in intensity, became significant pieces of information.

Real estate operation, or Facility Management (FM) in broader terms, is increasingly characterised by centralisation [20]. Integration is possible through the combined deployment of Building Information Modelling (BIM), and the Internet-based sensors and actuators (commonly called IoT) developed in conjunction with it [21]. The solution is a combination of decentralised control tools and centralised management. This minimises the use of human resources while keeping energy costs at an optimal level. Such an automated system is easily adaptable and meets flexibility requirements [22].

Various communities, large companies and municipalities have chosen and are choosing to centralise FM activities. In Sri Lanka, the FM integration of similar companies has been proposed by Weerasinghe

and Sandanayake [23]. In Denmark, 96 municipal FM organisations have been merged into a central system [24]. Goulden and Spence [25] argue that, in energy procurement practice, centralised FM service providers have greater business opportunities. According to Per Anker, the centralisation of FM is an advantage for international firms, as it simplifies the management of their business partners [26]. Overall, the relevant literature cited here as an example clearly favours the centralisation of FM systems, in other words real estate operation.

3. Research methodology

The literature of the period, which is still available today, is of course rather limited, but there is a summary publication that provides a comprehensive, chronological picture of the real estate operation of Budapest [16]. The data presented in this publication were compared with other available sources and, as they were found to be of a reasonable order of magnitude, this data set was used for the maintenance and renovation section. The national data for centralised real estate operation are not known in aggregate, as they were allocated to separate regional companies and their reports were not made public. Therefore, in this research we assumed that the change in volumes in the capital and the change in national volumes (over the period under study) occurred proportionately. Data on the expenditure in Budapest are shown in Table 1 below. Please note that there were no significant price increases in the period under review, so any inflationary effect can be discounted in the following analyses.

Table 1. Housing operation expenditures of the municipality of Budapest. Source: own editing

	1951	1952	1962	1970	1972	1975	1980	1981	1982
Number of buildings managed by the capital	14,848	34,326	35,573		35,264				
Number of flats managed by the capital	176,250	358,504	388,289		400,776				
Proportion of flats to the total of housing units in Budapest	37.90%				60.50%				
Amount spent on housing renovation (million HUF)	0	0	620	518	1,027	702	1,056	1,255	1,483
Amount spent on housing maintenance (million HUF)	29	148	380	336	513	558	1,072	1,248	1,341
Housing maintenance cases (units)	33,773	197,036	656,196		441,299				
Total number of blue-collar employees of Budapest's property management companies				5,360		5,845	6,043	6,077	6,083

The Arcanum Digital Repository (www.arcanum.hu) and its built-in search engine were used for the social “voice”. This data repository contains the Hungarian press products, including national and county newspapers and weekly publications, in a digital and searchable form. Some specific journals have not yet been digitised in the repository, but those presumably also provided less space for the community “voice” to be heard. The database provides a unique opportunity to study the contemporary press, and is used by researchers from a wide range of disciplines.

The 1949 Constitution declared freedom of the press to be implemented “in the interests of the workers”. In the socialist period, the press was neither free nor independent, but people of the time could read “between the lines” and editors, depending on their individual preferences, did send such messages to the public [27].

In the Arcanum Digital Repository, we conducted a systematic search for word combinations that deal with the quality and maintenance of housing and its shortcomings and that may have appeared in nationally distributed newspapers. The search terms given in various combinations were: Property Manager, IKV1, Housing Unit, Complaint, Fault. For the period between 1960 and 1985, these complex searches returned results in about 300 publications. After reviewing each of those results, 216 different

¹ Common Hungarian abbreviation for Property Management Company

and relevant publications were found. Since the location concerned could not always be identified, it was assumed that the intensity of the national records was the same as that of Budapest.

The 216 “voices of complaint” were processed as a time series and the results are shown in Figure 2 below. The number of records increases over time, with a clear surge in the late sixties, but the trend seems to have stabilised from 1971 onwards. Without doubt, these publications could have been influenced by several factors: on the one hand, newspaper editors select the topics, and, due to external or internal editorial principles (censorship) they cannot publish the same topic several times. On the other hand, the loosening up of the socialist system provided steadily increasing (of course still limited) freedom of speech, and negative opinions could become more easily heard. Given the very large number of press products included in the survey (4383 titles at the time of the query), we believe that these two aspects result in minimal bias.

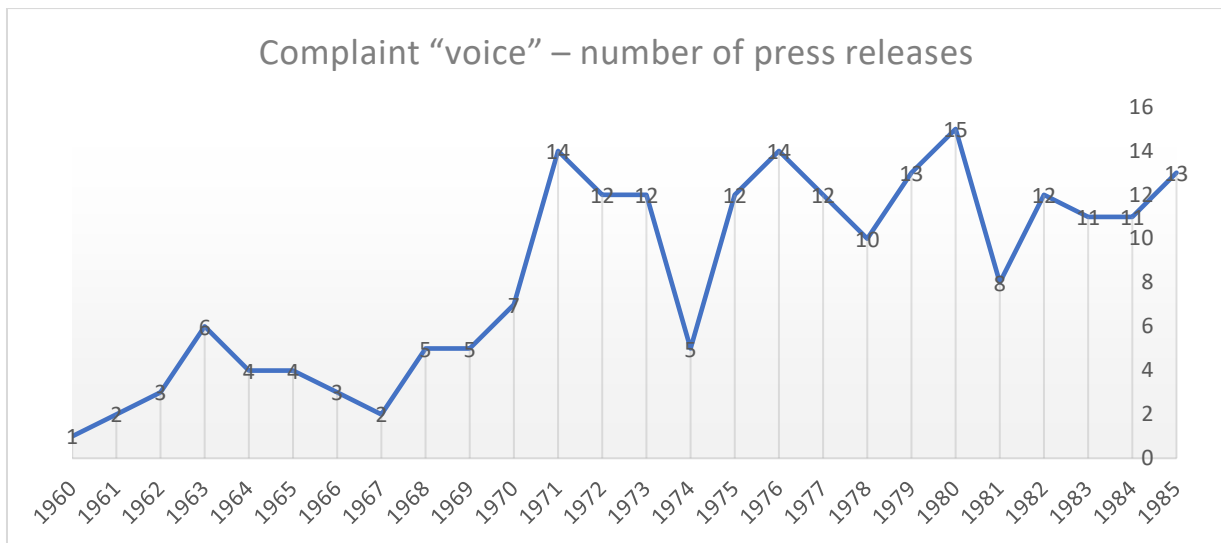


Fig. 2. Complaint "voice" - number of press releases. Source: own research

4. Research findings and their interpretation

The previous chapter presented the basic data for the research. To test the hypothesis, we produced a time series of changes in the managed housing stock, using the number of housing units built and the known variables from previous years. This time series for the number of housing units was then compared with the time series for operation and maintenance extrapolated from existing data. A resource index per housing unit was generated from the known maintenance data (total annual expenditure, headcount of maintenance staff, number of cases). The index was constructed from the available variables using the following formula while taking into account the relative weight of each item:

$$\text{Annual expenditure index} = \text{Maintenance amount per housing unit (HUF)} + \text{Maintenance cases per housing unit (number)} + \text{Physical maintenance staff per 100 housing units (staff headcount)}$$

The annual breakdown of the expenditure index thus produced is shown in Figure 3.

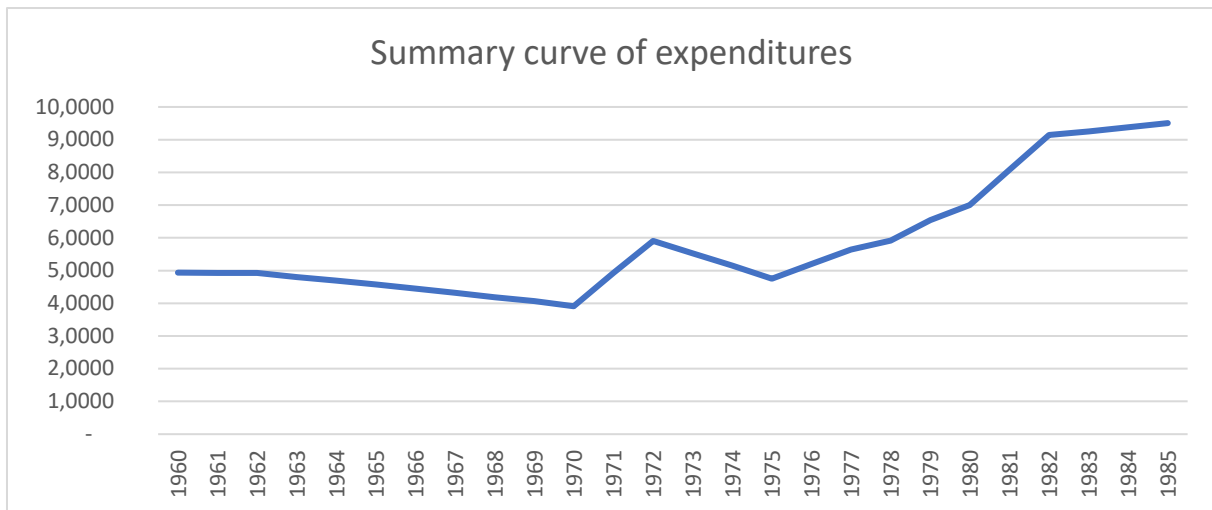


Fig. 3. Annual expenditure index Source: own editing

Comparing the second and third figures, it can be seen that the expenditure index is on an upward trend, while the number of complaints, i.e. the “voice”, is static. The period 1971-1974, when expenditure increased significantly is interesting; in 1974, the number of complaints fell significantly, presumably (although it cannot be verified statistically) due to the allocation of additional resources. This is the period of housing reform referred to in the literature review. The community was generally positive about the changes, so this may have been one reason for the “voice” being silent for a while.

However, in later years, the expenditure index doubled, clearly indicating central efforts for the maintenance of the housing sector as dictated by politics. The public voice, however, remained the same in character as in previous years. Starting in 1980, the number of complaints fell by about a third and remained at this level. It can be seen that as the number of housing units increased, the “voice”, i.e. the general dissatisfaction of society, did not become stronger, while the same “voice” did not react directly to the increase in expenditure, as the time series shows.

Our hypothesis that the increase in resources allocated to centralised operation increased the satisfaction of home-users is not supported by this research findings. At the same time, it can be concluded that, with the mobilisation of additional resources, the number of complaints in an increasingly liberated society stayed the same rather than increased.

5. Conclusion and further directions of research

Analysing the past can provide useful lessons for shaping our future. This universal truth is also applicable to the real estate sector. Another old saying is that social attitudes are deeply rooted and can only be shaped and reversed slowly. The findings of this research support this view: in the socialist Budapest of the past, society’s “voice” did not become silent, even after centralisation and the doubling of expenditure, yet these expenditures and political efforts were sufficient to keep criticism at its usual level and not to increase it.

So what is the conclusion to be drawn from today’s centralisation efforts? As the authors cited above argue, real estate operation and FM are moving towards centralisation. The trend cannot be stopped, but the creators of new systems must recognise that end-user attitudes are difficult to change. With proper communication and preparation, the intensity of complaints can be reduced, but it is expected that it will take a long time until the public do not criticise new initiatives but support them.

The present research is limited in that only partial expenditure data were available, and only the trend shown by them was used. If a complete time series can be found in archival data for an event in the period of socialism, the analysis will be richer and can be evaluated by statistical methods.

The socialist past in Hungary can serve as a good test case for analysing other recent changes in the real estate market. Such a test could be recommended on the efficiency of building management, the introduction of social housing units or the effectiveness of public regulation of real estate traffic.

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