



Social Differentiation and Spatial Patterns in a Multiethnic City in the Nineteenth Century: Potential Uses of GIS in the Study of Urban History*

Gábor Demeter and Róbert Bagdi

Research Centre for the Humanities, Hungarian Academy of Sciences

demeter.gabor@btk.mta.hu

This study is a GIS-aided quantitative statistical analysis which aims to explain the spatial patterns of sociodemographic phenomena in an urban community in the era of transition from preindustrial to industrial society. It is also a methodological attempt to use a unique source type and compare different methods used for social classification. Using the Hungarian census data from 1870, we tried to assess the wealth levels of different social groups indirectly and compare the internal inequalities within these groups with internal inequalities within social groups in other regions. The source also provided material on the basis of which we were able to reconstruct social networks, migration patterns, different strategies adopted by different religious communities, patterns involving occupation and age group, etc. We were able to compare the potential uses (and limits) of this source with the uses and limits of other sources. Our main goal was to put more emphasis on a spatial-regional approach, which is underrepresented in the Hungarian historiography, while geographers tend to refrain from putting their research into historical frames and contexts.

Keywords: HGIS (GISStory), urbanization, spatial patterns, social stratification, classification methods, quantitative analysis, wealth, 1870 census data

Aims

Although our study essentially aimed to (1) analyze and explain spatial patterns of sociodemographic phenomena in an urban community in the era of transition from preindustrial to industrial society by testing the potentials of a unique source (the census of 1870), other, primarily methodological aspects also arose which are worth further discussion and which put this article into a broader context. We have attempted (2) to outline three different methods which

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can help researchers identify different social layers in urban societies. We also attempted (3) to give an indirect estimate of the wealth levels of different social groups in the late nineteenth century by using the census data and to compare local internal inequalities with inequalities measured in other urban settlements and regions. We also considered (4) the potential applications and limitations of the source in question in attempts to reconstruct social networks and migration patterns, and we compared the uses of this source to other source types.

The applications of HGIS¹ might be familiar to geographers and historians in the West, but the use of this method in Hungarian historical research is underrepresented at the moment (the only existing concise database, compiled for the city of Debrecen on the basis of census data from 1870, remains unevaluated).² Geographers dealing with GIS-aided planning refrain from engaging in research focusing on the past, though the lack of knowledge of the histories of peripheral areas may lead to the adoption of mistargeted policies in development planning. Historians use a “vertical” (sociological) approach instead of spatial (regional) one, but recent studies have shown that the regional diversity in Hungary was not negligible. Thus, generalizations based on small datasets extrapolated to the whole country (and terms like “average”) can be misleading. Our fifth goal, therefore, was to test the applicability of GIS in the field of history. This study can be considered a draft project for the later, more broadly framed projects, such as GISta Hungarorum (2015–2017).³

Data

The source on which we based our inquiry was chosen because of its uniqueness, which enabled us to investigate and map certain phenomena into which other sources yielded no insights. The census of 1870 was the first modern census

1 HGIS = Historical Geographical Information System (or GISStory, or GIS-aided historical research). For GIS-aided historical research the term HGIS is more common than GISStory. See Gregory, Ian N. *A place in History: A short introduction to HGIS by the lead developers of GBHGIS*. <http://hds.essex.ac.uk/g2gp/gis/index.asp>; or <https://www.gislounge.com/find-gis-data-historical-country-boundaries/> and <http://www.hgis-germany.de/>, <http://www.hgis.org.uk/resources.htm#top>. GISStory is also accepted (see GIS and the City conference in Darmstadt, 2018: <https://www.geschichte.tu-darmstadt.de/index.php?id=3633>). Many thanks to János Mazsu for drawing our attention to the terminological problems.

2 Project OTKA 81 488. Principal investigator: János Mazsu. The reconstruction of social and spatial patterns of Debrecen, 1870–72 was considered the predecessor of this investigation. Recently, Réka Gyimesi initiated a similar project.

3 For the results, see <http://www.gistory.hu/g/hu/gistory/gismaps> and <http://www.gistory.hu/g/en/gistory/otka>.

taken by Hungarian authorities, and (far more importantly) it was the only state inquiry that was based on household level (Figure 1) and not on individual data sheets (later censuses were based on individual data sheets). Furthermore, almost at the same time, a cadastral mapping was also done in 1865 indicating every house with its identification number, which was identical with that of the numbers used in the census sheets.⁴ This temporal proximity and the survival of the original unpublished sheets in some counties⁵ (data were published officially only at the district level in the census volumes) made it possible for us to illustrate sociodemographic phenomena on maps at the household level and even to assess wealth levels based on property at the beginning of the era of industrialization.

The original census sheets from 1870 contained the name, age, address, birthplace, occupation, and religion of the head of the family, and these data were repeated for the wife, children, coworkers/employees, servants, and housemaids living in the same “household.”⁶ The sheets also provided the number of rooms, kitchens, auxiliary buildings (storage areas, stables, cellars) for each household. As the census did not contain income data, some of the abovementioned variables were utilized as proxies for wealth in order to divide the population into social (i.e. income-related) layers. Beyond wealth, general sociodemographic phenomena with or without spatial patterns (such as the average number of children of different occupational groups, the average number of children of groups belonging to different religions, migration patterns, interreligious marriages, territorial aspects of marriage patterns, territorial distribution of religious groups, etc.) were also traced using the aforementioned variables.⁷ The data also made it possible to create new indicators beyond those given in the census, such as population density (room/person) and ratio of earners per family. These derived data were also used as proxy variables to approximate wealth.

Our household-level database contained 2,150 entities (families, *Wohnparthey*), cca. 1,000 houses with approximately 10,000 persons and a dozen

4 Source: MNL–BAZML SFL XV. 83. box. 77–79. Now www.hungaricana.hu and www.mapire.eu (containing settlement level cadastral maps) offer new instruments to find maps with good resolution and information on identification numbers.

5 The data sheets from Zemplén, Ung, and Sáros Counties also survived almost intact in the county archives.

6 The term household and family are not synonyms: a word describing the situation more properly is the German “*Wohnparthei*”. In the following, we use the three terms as synonyms despite the minor differences.

7 Demeter and Bagdi, *A társadalom*.

indicators. Phenomena with spatial pattern were analyzed using GIS (ArcGIS 10.1), while within-group and intergroup differences (like religious composition of occupation groups, differences in wealth levels of religious groups and occupations, ageing, migration, differences in fertility rate, etc.) were evaluated using SPSS.



Figure 1. Pages from the census, Nagy Piac str., nr. 9.

Source: MNL-BAZML SFL XV. 83. box 77–79.

The Place

The selection of the town of Sátoraljaújhely (the county seat of Zemplén County) as a sample area was ideal from several perspectives. The original census sheets were available for 2,150 households, thus offering substantial material for quantitative statistical analysis, and even the timing of the census itself (1870) was fortunate from the perspective of our inquiry, which focuses on the identification of persisting and transforming urban structures. As a basic step towards industrialization, the railway was opened in 1870, while guilds were dissolved only in 1872, and this implied the parallel coexistence of both traditional and modern social patterns and social layers. In addition, the town had had an inherently positive geographical position for centuries, as it was located along the market line, where the goods produced in the plains and in the mountains were exchanged. The physical geographical conditions allowed a north-south pattern of migration from the peripheries of Zemplén County (the border of which was also a state border) to the county seat, while in the

southern part of the county an east-west migration route developed from the Great Plains towards the capital, Budapest. Although in 1775, the county seat was so peripheral that it was unable to extend its attraction zone very far even within its own administrative district, between 1810 and 1870, its population tripled, and this population growth was among the largest in comparison with the neighboring towns (Table 1). The nearby city of Eger, which was similar in size and had similar functions (it was also a county seat), showed only a 40 percent increase. By 1900, 50 percent of the inhabitants of Sátoraljaújhely were registered as not indigenous (i.e. born in a different locality),⁸ a figure which confirms the great role of horizontal mobility and migration. As the average number of children per household was only 1.8 in Sátoraljaújhely (1870), without migration, the population would not have increased at all.⁹ The acceleration of urbanization processes became more evident during industrialization (the population increase was only 50 percent between 1784–1825 and 1825–1870, but then it doubled in the next 40 years, exceeding the country average), making a melting pot of the town. This was reflected in its religious diversity. In 1870, 35 percent of the population was of Jewish origin, Roman Catholics constituted 30 percent, Calvinist protestants 12–14 percent, Greek Catholics approximately 18–20 percent, and there were some Lutheran inhabitants too.¹⁰

8 This value is high compared to neighboring towns and towns with similar sizes and functions. In Mukačeve (Munkács) the same figure was only 45 percent. Dányi describes Sátoraljaújhely as a “paracenter.” Dányi, “Regionális vándorlás,” 99–103. Despite its development, the town was still unable to attract its larger “Hinterland” in the nineteenth century (despite the high birth rate the population decreased in the northern part of Zemplén County and in the northern part of Sáros County by 20 percent between 1880 and 1910 due to massive emigration to America and not to local centers.

9 While Eger became peripheral as major railway routes bypassed it, Sátoraljaújhely became a traffic center, an intermediate station of population movements towards Budapest. The main source area was Upper Hungary: the proportion of migrants arriving to Sátoraljaújhely from this direction was higher than that of migrants arriving from Zakarpatiya and from the regions beyond the Tisza River. Demeter and Bagdi, “Sátoraljaújhely,” Table 3.

10 The *country averages* were as follows: Roman Catholic: 52 percent, Greek Catholic: 10 percent, Calvinist: 12,5 percent, Israelites: 4.5 percent, Lutheran: 6.5 percent. So Greek Catholics and Jews were overrepresented and Roman Catholics and Lutherans were underrepresented in the town compared to national average. Katus, *A modern Magyarország*, 483.

Table 1. Population increase referring to the rate of urbanization (1825–1900) in Sátoraljaújhely compared to the surrounding significant towns

Town	Population increase (1825–1900)	Population in 1,000 (1825)	Population in 1,000 (1900)
Eger	+40%	17.5	24.5
Kassa (Košice)	+180%	13	38
Miskolc	+80%	22	40
Sátoraljaújhely	+200%	4 (1784), 6.3 (1825)	10 (1870), 19.9 (1910)

Source: Beluszky, *Magyarország településföldrajza*.

General Features of the Urban Society

The evaluation of the urban society began by creating a correlation matrix containing the quantifiable variables of the database. The correlation between demographic indicators was weak in many cases (no connection was observable between number of children and family wealth or between the proportion of earners and wealth) (Table 2), thus many of the recorded indicators can be interpreted statistically as independent variables. However, some of the indicators still showed correlations with other variables. Therefore, in order to interpret these phenomena, diagrams illustrating the internal distributions were also created. Some of the variables were not quantifiable (like religion), thus correlations could not be calculated. The relationships between these variables and other indicators were also illustrated on diagrams. In order to illustrate the internal differentiation within the dataset, both mean and standard deviation values were calculated for the whole population and were used as reference points when comparing subsets (Tables 3–11).

Table 2. Correlation between the quantifiable variables (for each family). Strong correlations are indicated by grey background

Indicator	Age	Servants	Coworkers	Total inhabitants	Proportion of earners	Number of rooms	Proportion of children	Inhabitant per 1 room	Wealth 1	Wealth 2
Age	1.000	-0.011	-0.134**	-0.047*	-0.006	-0.141**	-0.099**	0.099**	-0.158**	-0.171**
Servants	-0.011	1.000	0.097**	0.427**	-0.276**	0.513**	-0.071**	-0.122**	0.369**	0.537**
Coworkers	-0.134**	0.097**	1.000	0.408**	0.240**	0.236**	0.074**	0.152**	0.113**	0.426**

Indicator	Age	Servants	Coworkers	Total inhabitants	Proportion of earners	Number of rooms	Proportion of children	Inhabitant per 1 room	Wealth 1	Wealth 2
Total inhabitants	-0.047*	0.427**	0.408**	1.000	-0.560**	0.424**	0.610**	0.501**	-0.197**	0.103**
Proportion of earners	-0.006	-0.276**	0.240**	-0.560**	1.000	-0.194**	-0.539**	-0.330**	0.234**	0.183**
Number of rooms	-0.141**	0.513**	0.236**	0.424**	-0.194**	1.000	0.063**	-0.530**	0.613**	0.710**
Proportion of children	-0.099**	-0.071**	0.074**	0.610**	-0.539**	0.063**	1.000	0.523**	-0.416**	-0.304**
Inhabitant per 1 room	0.099**	-0.122**	0.152**	0.501**	-0.330**	-0.530**	0.523**	1.000	-0.796**	-0.601**
Wealth 1	-0.158**	0.369**	0.113**	-0.197**	0.234**	0.613**	-0.416**	-0.796**	1.000	0.911**
Wealth 2	-0.171**	0.537**	0.426**	0.103**	0.183**	0.710**	-0.304**	-0.601**	0.911**	1.000

Explanation:

Coworker: inhabitant living together with the family-head but having his or her own earnings but not his or her own home (servants are not included in this group, but craftsmen-students are); employees of the family head, or grown up relatives of the family head employed elsewhere.

Wealth 1: indicator for the economic potential of the “Wohnparthey” calculated based on an equation containing the number of household servants, coworkers, economic buildings, number of rooms, and family size.

Wealth 2: indicator for the economic potential of the “Wohnparthey” containing the number of household servants, coworkers, economic buildings, and number of rooms but not family size.

** significant, p=0.05. Calculated-derived indicators are indicated by italicized letters.

Base data: MNL-BAZML SFL XV. Census data from 1870.

Table 3. The size of “Wohnparthey” in Sátoraljaújhely in 1870 (prs and %)

Family members	1	2	3	4	5	6	7	8	9+	Total
household number	123	381	415	345	305	198	162	84	134	2,147
%	5.73	17.75	19.33	16.07	14.21	9.22	7.55	3.91	6.24	9434

Table 4. Inhabitant/room values for the “Wohnparthey” in Sátoraljaújhely (prs and %)

0–1	1.1–1.5	1.6–2	2.1–2.5	2.6–3	3.1–4	4+	Altogether
214	125	375	120	352	391	529	2,147
9.97	5.82	17.47	5.59	16.39	18.21	24.64	100

The general sociodemographic features of the town can be summarized as follows. The town had cca. 1,000 houses, but 2,150 registered “families,” which means that on average one house was home to at least two *Wohnpartheys*. (For example, one kitchen was often used jointly by two or three families). The average family size was 4.4 people for one *Wohnparthey* in 1870 in Sátoraljaújhely. 25 percent of the households had six or more and 23 percent had two or less members.¹¹ The average population density was three people per room, but there was significant variety. 25 percent of the households were characterized by density above four people per room. In 10 percent of the families, at least every second family member was an earner, while in 8 percent of the families the earnings of one person were enough to maintain a family of ten. The average number of rooms per family was 1.5 in the town, but here too there were considerable discrepancies, and the average value was hardly greater than the value measured in villages.¹² 50 percent of families had only one room, and 8 percent had less than one, while only 10 percent had three or more rooms.¹³ In Hungary, the average was 3.8 people per room in 1869 (and 3.5 in 1910). In Sátoraljaújhely, it was three people per room.¹⁴ Servants were abundant in only 25 percent of the households. They constituted 7.3 percent of the society. The average number of servants was 0.33 per family for the whole town. Earners without their own *Wohnparthey* constituted 10 percent of the population (978 persons), but only in 10 percent of the *Wohnpartheys* do we find more than one coworker, and 75 percent of the families had none. 28 percent of the “families” had no children (the family head was too young or was older and the children had already left the family home). In Belgrade, this figure was only 17 percent in 1900.¹⁵ On the other hand, 30 percent of the *Wohnpartheys* had more than two children (in Belgrade this was 26 percent). The average number of children was 1.8 per family. Jewish families had 2.4 children of average, Greek Catholics had only 1.4, and Roman Catholics and Calvinists had 1.6. Only 11 percent of the family heads were younger than 30. 11 percent was older than 60 (the average

was 39). Altogether, 39 percent of the total population was under 18 years of age (the figure was similar for the whole of Hungary).

Table 5. Proportion of earners in the “Wohnpartheys” of Sátoraljaújhely in 1870 (prs and %)

0	0.1	0.2	0.3	0.4	0.5	0.6–0.9	1.0	Total
70	173	676	467	116	401	104	140	2,147
3.26	8.06	31.49	21.75	5.40	18.68	4.84	6.52	100

Table 6. Average number of rooms / family (Wohnparthey) in 1870 in Sátoraljaújhely (number of rooms and %)

Number of rooms	under 0.5	1	2	3	4	5+	Total
households	170	1,175	488	150	69	55	2,147
%	7.92	54.73	22.73	6.99	3.21	2.56	100

Table 7. The number of servants in family households in 1870 in Sátoraljaújhely (prs and %)

Servants (prs)	0	1	2	3	4+	Altogether
households	1,665	336	91	34	21	2,147
%	76%	15.65	4.24	1.58	0.98	730

Table 8. Number of coworkers and earners (not in family-head position) in Sátoraljaújhely in 1870 (prs and %)

Coworkers	0	1	2	3	4+	Altogether
households	1537	383	143	46	38	2,147
%	71.59	17.84	6.66	2.14	1.77	100

Table 9. Number of children in the Wohnpartheys/families in Sátoraljaújhely in 1870 (prs and %)

Number of children	0	1	2	3	4	5+	Altogether
households	619	462	424	303	165	174	2,147
%	28.83	21.52	19.75	14.11	7.69	8.10	100

In Belgrade these figures were 17, 34, 24, 11, 7, and 7% respectively around 1900.

Table 10. The distribution of family heads in Sátoraljaújhely based on their date of birth (prs and %)

Year of birth	–1809	1810–1819	1820–1829	1830–1839	1840–1849	after 1850	Altogether
family heads	238	447	578	645	236	3	2,147
%	11.09	20.82	26.92	30.04	10.99	0.14	100

11 The average for Pest County in 1896 was 4.6. Őri, “Család és házasodás,” 75. For Istanbul, this figure was 4.1 people around 1900. In some of the immigrant-dominated quarters it fell below 3.8. Based on a sample of 2,500 people, the average Bulgarian and Muslim household size in towns in the 1860s was 4.4 and 4.7 people respectively, while in Muslim villages this reached 4.9. Todorova, “Situating the family,” 452.

12 In 1930, 70 percent of the houses in Slovenia had only one room. Malojčić, *Selo i tuberkuloza*.

13 Three rooms are considered as a minimum to consider a family “middle class” according to Gerő. Thus, in Sátoraljaújhely, approximately 13 percent of the households fit into this category. Gerő, *Dualizmusok*, 149.

14 Ibid., 148.

15 Malojčić, *Selo i tuberkuloza*.

Table 11. Demographic indicators in Sátoraljaújhely in 1870 (prs and %)

Indicator	Lutheran	Greek Cath.	Jew	Calvinist	Roman Catholic	Altogether
Total number of children	71	519	1,655	483	1,153	3,881 (39%)
%	1.83	13.37	42.64	12.45	29.71	100
number of families	41	373	692	302	735	2,143
%	1.91	17.41	32.29	14.09	34.30	100
children/ Wohnparthey	1.73	1.39	2.39	1.60	1.57	1.81

Source: MNL–BAZML SFL XV. Census of 1870.

Local Mobility – Local Networks

As the registry of 1870 offers only a “snapshot” of the social situation, and as its structure differs from the later censuses, the usefulness of this material (unlike the usefulness of parish registers, for example) to identify social networks and relationships or to trace patterns of change of residence among members of the younger generation is rather limited. But in certain cases, the registry still offers significant data on the basis of which one can venture hypotheses concerning trends or patterns in household composition. The marriage of the Calvinist noble landowner family Evva, which played a crucial role in the life of the county and had five rooms and an additional two rooms rented to Jewish grain merchants, and the influential and rich Catholic Farkas family (a lawyer dynasty with eight servants and coworkers, owning six rooms and renting two rooms to merchants) offers an example of the unification of two elite families with different social roots and belonging to different denominations. (Inter-denominational marriages were relatively rare, coming to only 15 percent of all marriages). The old family head András Evva (1805–1888) had already been mentioned prior to 1848 as the leader of the reformist political opposition in Zemplén.¹⁶ He managed to keep his position even after the repressions between 1849 and 1867, and he became the president of the county jurisdiction. His wife, Teréz Balásházy, also hailed from an old, local noble family, mentioned early in the eighteenth century as one of the “urban” noble families.

¹⁶ Veliky, *A változások kora*.

Another example of the decreasing role of religion within the noble elite is given by the Catholic Spek family. Irma (1847–), a relative of Antal Spek (1804–) who was a member of the local town council, married the Lutheran lawyer Ignác Boros and settled down in the main street of the town (Kazinczy Street) near the widow of Ferenc Spek (house nr. 651 and 655). Thus, they were able to look after each other. Furthermore, the elder daughter of the latter widow married a royal official, thus broadening the family network. We may point out *that, while at this time the intermingling traditional landowner and administrative elite had already accepted the “honoratiour” layer* (highly educated non-nobles in important position) *as equal partners, the traditional elite living in the town still refrained from entering into relationships with the new financial elite.*

The tightness of the relations among relatives can often be measured through territorial concentration, as the above example showed. Social networks had spatial patterns too, but there were remarkable differences in the cases of different strata. For example, the innkeepers of the town also tended to enter into family relationships with one another, but they settled relatively distant from one another as their main aim was to distribute the market between the possible competitors in order to maximize income and minimize competition.

A comparison of other (earlier) registries with ours offers even greater potential as a method of identifying networks, social (vertical) mobility, migration processes (horizontal mobility), etc., but it also requires more work. The noble Kapy family, the richest at the end of the eighteenth century with 90 hectares of land, had almost disappeared by 1870. Apart from one young child, only one person from this family was registered as an inhabitant in Sátoraljaújhely, the wife (1837–) of Calvinist county official József Bárczy.¹⁷ The Marchalko family was also a prominent noble family in the eighteenth century in the town, but by 1870 only one person, the Roman Catholic wife (1817–) of another Calvinist, István Somogyi, bore this name.¹⁸ This also indicates that the fusion of the elites of different origins and denominations was in an advanced phase by that time. Protestants traditionally held leading positions in the urban and county administration in Zemplén (this is a specific feature of the county), and they were overrepresented compared to their proportion in the whole urban population. Roman Catholics were mainly landlords, and their weight in the county council and the urban government was smaller in the first half of the nineteenth century.

¹⁷ Of course, migration was not the only factor. A family name might go extinct if there were no sons, and this limits the relevance of our investigations.

¹⁸ Barta, *Ha Zemplén vármegyét*, 298. 312–13.

Intermarriage and the general decline in the number of Protestants enhanced their position first on the urban council and then on the county council.

Family and kinship networks which existed at the time the registry was drawn up can also be traced, but only within limits.¹⁹ The maiden name of the wife of tailor János Keller, who lived at Papsor nr. 474, was Sztropkovics. Her mother also lived in the same household, while in the same house, but in another 'Wohnparthey' a Sztropkovics boy established a family. In this case, the relatives remained relatively close to one another because of their limited financial means. The house was divided between the two Sztropkovics descendants, and the husband moved into his mother-in-law's house. Another example of relatives from different communities living relatively close to one another reveals family and business strategies. Eszter Hell, the widow of a Jewish textile merchant (haberdasher) named Svajger, and the textile merchant Salamon Hell (who was her close relative) also lived in neighboring households (nr. 475 and 477). Another relative of her sons (the Svajger-children), Samuel Svajger also lived in the neighborhood (nr. 490, Széchenyi Square). Samuel Svajger was also a textile merchant (haberdasher). Adolf Hell, another haberdasher and relative, lived at nr. 498. Kinship and family ties also influenced business behavior. The marriage between the Svajger and the Hell merchant families promoted accumulation of capital, while it decreased competition. At the same time, the relative closeness made it easier for members of the families to provide care for widows, orphans etc.

Spatial Patterns: Religion, Occupation, Population Density

Though the town was depicted as a melting pot, the Jewish community had not been granted full rights in all fields of life in the 1860s. This naturally raises a question. Was there any segregation observable between religious communities despite the diversity? Based on the map illustrating the religious distribution of the population (Figure 2),²⁰ Jewish households were concentrated in the center of the city (they did not own the houses, but rather rented them from the local protestant elite). These houses were predominantly located at some of the major crossroads (Óhíd Str., now Dózsa Str.; Újhíd Str., now

Rákóczi Str.; and Malom Str., now Munkácsy Str.) which ran perpendicular to the main road, which led in a north-south direction. Despite the presence of some clusters of houses inhabited exclusively by Jews²¹ and the prohibition of interreligious marriages between Jews and Christians at the time, *we cannot speak about the segregation of Jews* for two main reasons. First, the area of the settlement in which Jews lived in high concentrations included the road where the local elite lived and the major scenes of urban life (community spaces, administrative buildings) took place. The presence of Jewish residents of the town was also traced in the secondary main road leading eastward through the Ronyva-bridge, which means that they were integral part of the town. The fact that Jews *were able to pay the high prices for rental properties in the center of the town* and that *the families of the elite lived alongside Jewish families* (see the example of the Evva family) means that (1) the *Jewish society* (or societies) *was a differentiated one* and (2) *the elite tolerated their presence, because Jews served as significant source of income for the traditional local elite, which refrained from capital investment in industry*. The second reason is that still there were intersections and blocks of a religiously mixed character.²²

Calvinists lived in houses along the main streets running north to south. Some of these streets bear the names of traditional handicrafts (Gubás Str., now Esze Tamás Str.). Thus, protestants living in homes on these streets represented the imprints of the traditional socioeconomic structure (and this also reflects their once higher proportion and prestige within the population). Their spatial pattern originally showed a continuous line along the main road, but this was broken up by 1870, and the rich Calvinists (based on population/room, total number of rooms, etc.) in the city center became separated from the Calvinists craftsmen who belonged to the lower middle-class.

Greek Catholics lived in the northern and southernmost outskirts of the town, near the vineyards (which lay to the north and northwest) and the arable lands (which lay to the south). This clearly indicates their sectoral distribution and social position. Most of them were agrarian wage laborers or craftsmen of less prestigious occupations. Roman Catholics were abundant in the city center

²¹ The blocks inhabited by Jews cannot be considered fully homogeneous because of the Christian servants and maids. The sources provide no information regarding the separation of Orthodox and Neologue Jews: in Sátoraljaújhely each group had a synagogue.

²² Most of the Jews in Debrecen also lived in the city center (along Hatvan Str. and Piac Str. near the Great Church of the Calvinists): 40 percent of the Jewish households dwelled in six streets. See Mazsu, "Inside borders" and Mazsu, "Piac, kereskedelem, kapitalizálódás." In Sátoraljaújhely the preference of north-south and east-west main roads was observable among Jews, and *though the east-west axis was of secondary importance regarding migration routes, it was a non-negligible direction concerning the movements of goods* (grain trade).

¹⁹ The census does not mention family ties between the *Wohnpartheys*. This hinders reconstructions without the aid of parish registers. The same constraints are valid for the investigations of matrilocality or patrilocality.

²⁰ <http://www.gistory.hu/g/hu/gistory/gismaps>. See maps: chapter 8, urban society.

(mixed with Protestants) and on the fringes, which indicates advanced social differentiation among them. Jews also had a lower-class layer located on the outskirts, which was separated from the richer layers.

To summarize, though there were relatively homogeneous blocks or street sections (the Jewish blocks in the center, the streets in the north and the southeast—Kis Pázsic, Baracz—which were dominated by Greek and Roman Catholics, and the quarter inhabited by Protestant craftsmen in the south), segregation was not as characteristic of Sátoraljaújhely as it was of Bonyhád, for example.²³ *The spatial differentiation among people who belonged to different religions or denominations and people who pursued different occupations was advanced by 1870 and this differentiation was more based on social position than on the denominational differences.* Interreligious marriages constituted 15 percent of the total,²⁴ though half of these took place between Greek and Roman Catholics and 23 percent between Roman Catholics and Calvinists. Houses were often inhabited by families belonging to different denominations, and sometimes even the distribution of markets was observable: the Jewish butcher shared a house with a Greek Catholic bacon-maker. This strange phenomenon drew our attention to another one: *among butchers, Jews were overrepresented. They met the demands of their co-religionist population, but also those of other denominations. This indicates practical trust and reception of Jews in our interpretation, who were also overrepresented among merchants* (Figure 3). Another (rather symbolic) sign of their emancipation was the fact that Jews and Greek Catholics (the latter constituted the poorer half of society) were also found among the urban and county officials (represented by 1-1 scribe), who were primarily Calvinists (Figure 9).

As for the *spatial pattern of occupations*, our general observation is that industrialization was not yet advanced enough (two years before the abolishment of guilds) to ruin traditional old structures completely. Tanners still lived along the Ronyva River, as water was essential to their craft. Their downstream and upstream concentration was also not surprising. Because of the stench (a by-product of their work), they were pushed out from the surroundings of the bridge across the Ronyva, which functioned as the main supply route leading to the town's railway station. Tanners who were living downstream along the Ronyva did not affect the urban neighborhood negatively with their activity.

²³ Gyimesi and Kehl, "Spatial analysis of the socio-economic structure."

²⁴ Pozsgai registered 5–7.5 percent in the two districts and cca. 40 settlements in the rural Torna County in 1870. Compared to this, Sátoraljaújhely was really functioning as a melting pot. See Pozsgai, "Görög és római katolikus nemzetiségek."



Figure 2. Spatial patterns of religious and denominational belonging (family heads) in Sátoraljaújhely in 1870
Source: MNL-BAZML SFL XV. 83. box. 77–79.

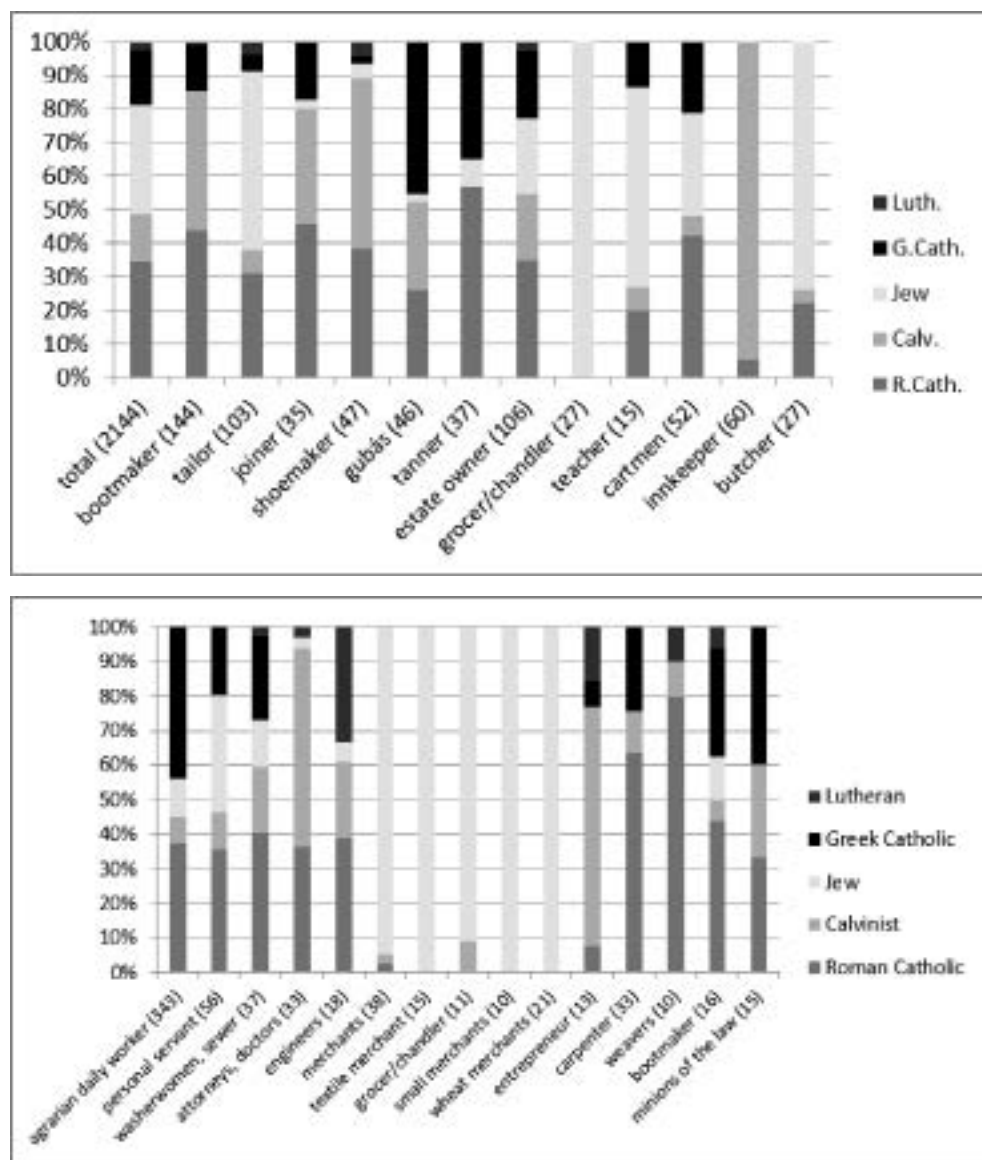


Figure 3. Religious differentiation (occupations)

western fringes called Zsólyomka, which was also among the poorer districts. Joiners (middlemen, based on Table 22) lived scattered and evenly dispersed, while butchers were lived to the west of the main road (no butchers lived in the northern districts). Tailors lived around the town center (Figure 8).

Investigations (discussed later in detail) proved that *the location of the residences of people who pursued different occupations (i.e. the distance from the functional center of the town) correlates with the people’s wealth or social prestige*. Urban and county officials lived along the north-south axis (teachers, school inspectors, state attorneys, judges, crown counsels, prosecutors), surrounded by representatives of freelance professions²⁵ (pharmacists, architects, vets, doctors, goldsmiths, private lawyers, house owners). The outer circle of the town center was dominated by assistant officials, clerks (urban, financial, insurance, postmen, policemen) and by financial experts (banking). This was followed by the zone which was inhabited by craftsmen and the outermost circle, which was inhabited by agrarian workers (Figure 8). (Servants and agrarian daily wage-laborers dominated in the northern districts, the southeastern parts of the settlement, and the west, in Zsólyomka.)

Inns, mansions, and restaurants were concentrated in the center or around the bridge over the Ronyva and in the western parts of the town near the vineyards and arable lands, from where daily-wage laborers returned tired and thirsty day after day. The first houses along the streets leading to the town also functioned as inns or restaurants to offer shelter to those who arrived on foot or by cart from the surrounding regions. (The persistence of these suburban inns indicates that railway had not yet modified the traffic patterns; Figure 8). Merchants were concentrated in the town center and the west-east road leading to the Ronyva bridge, while shopkeepers (including chandlers and grocers) targeting different layers frequently lived in the eastern and western outskirts along the main roads leading to the arable lands.

²⁵ Supplemented by craftsmen serving the high-elite with their specialized knowledge.



Figure 4. The spatial pattern of population density (person/room) in Sátoraljaújhely in 1870

The Social and Religious Composition of Migrants

In urban environments, the role of natural reproduction in population growth has usually been smaller than that of migration. Even in the introverted Eger, which had an increase in its population of only 40 percent between 1825 and 1900 (the population of Sátoraljaújhely tripled over the course of this period), more than 75 percent of the increase was the result of migration, as the natural growth rate until 1873 was critically low (demographic pattern was characterized by high mortality beside the and a high birth rate).²⁶ In Sátoraljaújhely, the main source of population growth was also migration, which played a key role in the transformation of the city's character.

The transformation of traditional structures can also be examined by measuring the *frequency of migrant intermarriages* (and the *spatial pattern of migrant intermarriages*) alongside the frequency of *religious intermarriages* or the *spatial pattern of occupations*. (The latter two can also indicate these transformations: a dispersed spatial pattern usually indicates the dissolution of original structures). Altogether, 33 percent of family heads were indigenous to the settlement, while the proportion of local-born wives was somewhat higher, reaching 45 percent. This means that the male population was more mobile and also that local-local marriages could not have been more than 30 percent in the town.²⁷ In contrast, in the more traditional southern districts (note the abundance of guildsmen occupying certain jobs *niches* based on religious differences), which comprised 33 percent of the households, *marriages between local born males and females* reached 50 percent (178 cases). This indicates a higher degree of *introversion* in this district of the town. On the other hand, *immigrant-immigrant marriages* were overrepresented in the north. The latter indicates the belated integration of certain layers. Immigrant-indigenous marriages had no spatial pattern.

The *changes in religious proportions* also refer to transformations. The proportion of Calvinists decreased from 18 percent in the 1840s below the country average by 1870,²⁸ while that of the Jews increased from 17 percent to 35 percent (their share among children was even higher, 42 percent in 1870). It fell back to 29 percent by 1910. (The increasing presence of Jews usually indicated industrialization and the emergence and spread of capitalism in Hungary). The proportion of Greek

²⁶ The demographic transition in Hungary began only after the last great cholera epidemics (1873).

²⁷ The proportion of the indigenous population reached 50 percent only together with the children, among whom immigrants were rare.

²⁸ Their representation in the urban and county elite was traditionally higher.

Catholics gradually decreased from 23 percent to 15 percent, which, given their primary occupations (for the most part, they were agrarian wage laborers and low-prestige craftsmen and artisans), also indicates transformations in general (Table 12).

These changes were partly driven by the changes in migration patterns and social strategies and partly by the different birth rates of the different denominations. Our database offers possibilities to estimate the role both of migration and natural growth rate for religious communities, and to reconstruct the social strategies of classes and denominations.

Table 12. The change in proportion of religious denominations in Sátoraljaújhely between 1840 and 1910

Year, %	R. Cath.	Greek Cath.	Calvinist	Lutheran	Orthodox	Israelite	Altogether
1910, prs	7,936	2,943	2,878	381	34	5,730	19,902
1910, %	39.9	14.8	14.5	1.9	0.2	28.8	100
1870, prs*	3,335	1,676	1,195	155	12	3,215	9,946*
1870, %	34.5	17.0	12.5	1.6	0.1	33.5	100
cca. 1840, prs	2,401	1,464	1,174	120	26	1,125	6, 310
cca. 1840, %	38.1	23.2	18.6	1.9	0.4	17.8	100

* only 9587 known cases.

It is not surprising that the proportion of immigrants was higher among the cohort of 20–30 year old (over 65%), than among the inhabitants between 50 and 60 years (50%). More interesting conclusions can be reached when investigating the subsets of the social classes, occupation groups, and denominations. The proportion of indigenous people exceeded the urban average only among the Jewish family heads (45 percent) and their wives, so the Jewish community must have been the most insular. This is surprising compared to old *topoi* and their behavior in other towns.²⁹ The growth in numbers was the result of the high internal reproduction rate (an average of 2.4 children/Jewish *Wohnpartbey*) and not of immigration (Table 11). The decrease in the proportion of Jews in the town after 1870 (Table 12) despite the high number of children may indicate that Jews reached the “saturation

²⁹ In the larger city of Debrecen (which at the time only had 2,000 Jewish inhabitants), only 30 percent of the Jews were local-born. Another 20 percent was indigenous in the county, and another 30 percent arrived from the northeast. The average size of the 340 Jewish households indicates larger family sizes (5.5) than the town average, as was also true in Sátoraljaújhely (4.5). See Mazsu, “Inside borders.”

point”: the town as a market did not have a demand for the professions typically practiced by Jews at that stage and pace of development, and this made it less appealing for potential Jewish immigrants and increased competition for the niches among the different factions.³⁰

In contrast, *Lutheran family heads were dominantly immigrants.* Many of them were foreigners with special skills and occupations who came as experts to meet the demand generated by industrialization, which Hungarian schools were not yet able to cope with. The number of Lutherans in the town tripled between 1840 and 1910, a pace of growth which equaled the average growth rate of the whole town. The average number of children among them was only 1.8, which means that migration played a larger role than natural growth. (On the other hand, Lutheran family heads were somewhat younger than the average, as were Greek Catholic family heads, and this also explains the low birth rate within their households).

Among the *Greek Catholic* family heads, the proportion of newcomers was 75 percent, thus *the gradual decrease in their share of the total population can be explained by their low birth rate* (an average of 1.4/*Wohnpartbey* in 1870) and by religious intermarriages. They were also relatively poorly off from the perspective of their social situation (the proportion of *Wohnpartbeys* with only one room or less was the highest among them). The proportion of indigenous Roman Catholic family heads (compared to local Roman Catholic family heads) was also below the town average. The *Calvinists* tried to “balance” their bad demographic indicators (an ageing society with less than the average number of children) by relying on immigrants. Regarding the origins of wives and husbands, there was a great difference measured in the case of both Roman Catholics and Calvinists: *mainly the men were newcomers, while most of the wives were local born inhabitants* (Table 13).

Considering the group of *coworkers and employees*³¹ the share of Jews reaching 25 percent was well below their proportion measured among family heads and wives. This means, based on the general character of this social category comprising dominantly craftsmen,³² that *among Jews, the significance of traditional guild-industry was of secondary importance.* Though after 1848, Jews were allowed to work in guilds, they still tended to take other occupations. The proportion of *Calvinists* among employees (18 percent) was higher than their share of the total city population (12–13 percent), which *implies a more traditional social structure* and a strategy differing from that of the Jews. In the case of the Calvinists, employers

³⁰ The Jews in Sátoraljaújhely were divided among traditionalist, modernist, and “status quo ante” factions.

³¹ Without own home/*Wohnpartbey*, cca 1000 persons.

³² Pharmacists, assistant teachers, waiters, and merchant-assistants were also grouped here.

showed a preference in their selection of employees/coworkers for other Calvinists. This preferential cooperation meant that a Calvinist guildsman was more likely to choose a Calvinist apprentice. This does not imply exclusiveness, however. Calvinists also hired Roman Catholic apprentices. This also meant that the children of lower middle-class Calvinists were more likely to turn to handicrafts than to pursue other occupations, and they were more likely to pursue these crafts than the children of Jews and Lutherans. *These differences in strategies based on religion/denomination indicate the persistence of old structures.*

Among the social group of *servants*, the proportion of Greek and Roman Catholics (26 and 41 percent respectively) exceeded their share of the total population, while Calvinists (9 percent) and Jews (15 percent) were underrepresented. This also reflects the different strategies they adopted in the pursuit of a livelihood. Jews, for example, tended to employ non-Jewish immigrants as servants, much as Calvinists tended to employ non-Calvinists.

Among *employees and coworkers* (without their own *Wohnparthey*), the proportion of *local-born* (except for the Jews with their 51 percent) remained under the city average (40 percent) (Table 13). The high share of local-born Jews among employees also indicates an insular society and a strategy differing from that of the Christians. In contrast with Jews, Calvinists preferred immigrants as coworkers and employees. The proportion of Roman Catholics among immigrant employees reached 40 percent (overrepresented compared to the proportion of Roman Catholic family heads and their wives). The share of Calvinists reached 22 percent (also overrepresented, much as Greek Catholics were too, with their 22 percent), while the proportion of Jews in the town remained around 20 percent. In contrast, *in the whole set of coworkers and employees* (including indigenous and immigrant), Roman and Greek Catholics were underrepresented compared to their share of the total population (24 percent vs. 33 percent of family heads and 11 percent vs. 17 percent of family heads, respectively). This means that the proportion of indigenous Greek Catholic employees was small and also that their proportion was high among *servants*. In the case of these two denominations, low-prestige fieldwork dominated among immigrant employees (as their geographic location within the town confirmed earlier).

Among *the local-born servants and housemaids*, Roman Catholics were overrepresented (while among employees they were underrepresented). *85 percent of the servants and housemaids were immigrants*, which indicates that *the strategy of local-born, lower-class/declassed people aimed to avoid these lines of work by becoming apprentices or coworkers*. Among *newcomer* servants, Greek Catholics comprised 26 percent (a

higher value than their share of the total urban population), while Jews reached only 15 percent (Table 14).

Table 13. The proportion of immigrants among occupational (family head-earners; employees-coworkers; servants and maids) and denominational groups

Family-heads*	Total persons	Local-born (%)	Local-born (%)	Wives	Total persons	Local-born (%)	Local-born (%)
Lutheran	41	12.2	0.7	Lutheran	33	27.3	1.1
Gr. Cath.	373	24.4	12.5	Gr. Cath.	309	33.0	12.6
Jew	692	44.5	42.5	Jew	619	47.3	36.2
Orthodox	3	33.3	0.1	Orthodox	5	60.0	0.4
Calvinist	302	35.8	14.9	Calvinist	193	60.6	14.4
R. Cath.	735	28.8	29.2	R. Cath.	552	51.6	35.2
Altogether	2147	33.8	100	Altogether	2147**	37.7	100

Coworkers, employees	Total persons	Local-born (%)	Local-born (%)	Servants, maids	Total persons	Local-born (%)	Local-born (%)
Lutheran	10	20.0	0.8	Lutheran	8	0.0	0.00
Gr. Cath.	109	24.0	10.8	Gr. Cath.	135	9.6	21.6
Jew	146	51.4	31.4	Jew	80	12.5	16.6
Calvinist	110	25.5	11.7	Calvinist	50	10.0	8.3
R. Cath.	212	27.0	23.8	R. Cath.	216	14.4	51.6
Altogether	600	40.0	100	Altogether	520	11.5	100

* Including widows (women) registered as family-heads.

** The difference between the number of *Wohnparthey* and the partial sums is due to the cca. 200 widows and widowers (10%) divorced and yet not remarried.

Table 14. The distribution of immigrants (%) based on religion and social groups

	All family heads as a %	Immigrant family heads as a %	Immigrant wives as a %	Immigrant employees as a %	All employees as a %	All servants as a %	Immigrant servants as a %
Lutheran	2.0	2.7	2.7	2.2	1.6	1.5	1.7
Gr. Cath.	17.0	19.8	22.2	21.0	18.1	26.0	26.5
Jew	33.2	27.0	36.3	19.6	24.3	15.4	15.2
Calvinist	12.5	13.6	8.4	21.7	18.3	9.6	9.8
R. Cath.	35.1	36.8	29.6	41.0	35.3	41.5	40.2

The theoretical aggregated value in columns is 100% – differences are due to lack of data and rounding errors.

Social stratification of immigrants

With regards to the social elite (the methods according to which we have defined this group and identified the people who belonged to it are discussed later), in the case of family heads, 25 percent were born in Sátoraljaújhely. In the case of wives, this figure was a bit higher, 33 percent. This indicates the generally smaller horizontal mobility of women at time. Compared to the figures in the city of Eger, this still indicates an open society.³³ Among the lower-class and deprived (for instance agrarian wage laborers and washerwomen, sewers, bread-makers, etc.), the proportion of local-born people was also low, around 30 percent (in the case of their wives, it was 37 percent), while in the case of the middle class (for instance merchants, innkeepers, shopkeepers, and chandlers), the figures were 40 and 48 percent, respectively. In the case of landowners, the proportion of local-born urban dwellers was around 50 percent, and in the case of people earned their livelihoods doing handicrafts, it was similarly high (41–58 percent). Thus, the latter two occupational groups can be considered the basis of the *indigenous* middle-class (Table 15).

Table 15. The proportion of *local-born* husbands and wives in 1870 in Sátoraljaújhely

Group	Husband (persons)	Wife (persons)	Husband, (local) %	Wife (local), %
elite, official elite, freelance professions	59	81	25	33
merchants, chandlers	140	166	40	48
artisans, craftsmen	278	396	41	58
poor, lower-class (cartmen, footmen, sewers, rag-pickers, washerwomen, itinerant merchants, etc.)	156	208	30	36
smallholders and large estate owners	54	57	46	49

The abovementioned “openness” of Sátoraljaújhely (which is a feature of towns which were becoming increasingly industrialized) is indicated by another fact: *among the immigrant earners, the share of those who belonged to the elite was higher than among the local-born society* (Table 16), in contrast with the situation in Eger.³⁴ In Sátoraljaújhely *local-born earners were overrepresented within the middle class, while lower layers were dominated by newcomers*. However, the proportion of immigrants working

33 Demeter, “A dualizmus kori Eger.”

34 In Eger, the elite was underrepresented within the immigrant society. In the middle class, artisans were overrepresented, while lower “national” officials (porters, policemen, postmen) were recruited from local-born people.

in the agrarian sector did not exceed the proportion of local-born working in the same sector. From the perspective of their numbers and their share of the total population, *newcomers were overrepresented among the industrial and tertiary low-wage earners*.

The comparison of earners in the comparatively secluded city of Eger (a nearby county seat), the small town of Varannó (Vranov; a district center in Zemplén County), and Sátoraljaújhely (the county seat of Zemplén) yielded interesting results (Table 16). The lower middle class was the largest in the traditional Eger (this was particularly true of the autochthonous population), and the lower classes and middle class were both thinner (partly because of the larger lower middle class, partly because of the lack of industrial workers). The elite was also the broadest in Eger (15–20 percent vs. 3.5 and 7 percent; with its *Lyceum*, the town was able to reproduce its intelligentsia),³⁵ despite the smaller significance of the elite among immigrants.³⁶ In Varannó, the lower class was thin among immigrants, while among the autochthonous population lower layers were underrepresented).³⁷

Table 16. The social stratification of the earners’ society in Eger, Varannó and Sátoraljaújhely towns

Layer	Varannó, total (%)	S.újhely, total (%)	Eger,* total (%)	Varannó, migrant (%)	S.újhely, migrant (%)	Eger,* migrant (%)	Varannó, local-born (%)	S.újhely, local-born (%)	Eger,* local-born (%)
Elite	7.1	3.4	20	8.1	3.8	12	5.8	2.5	22
Middle	48.3	41	33	40.8	36	49	58.2	50	25
Lower middle	6.1	3.5	24	8.6	3.3	12	2.9	5	28
Lower	38.5	52	22	42.5	58	25	33.1	39	20
Total (prs)	100% (720)	100% (2,656)	100% (800)*	100% (409)	100% (1,783)	*	100% (311)	100% (873)	*

35 In the case of Eger, the use of sources of a different character, namely the parish registers, limited the reliability of the classification and the comparison. The statistics were based on 167 marriages from 1883, where the occupation and place of origin of the husband, the husbands’ father, and the wives’ father were mentioned too.

36 In Eger, the local elite was also stronger compared to the immigrant elite society (22 vs. 12 percent).

37 In Varannó, the officials, bureaucrats, and lower-ranking state officials were all immigrants. Lacking a secondary school, the townlet was unable to reproduce its elite. Merchants, artisans, and entrepreneurs were underrepresented among immigrant earners (constituting 57 percent of all earners in Varannó, but 67 percent in Sátoraljaújhely, Table 17). 60 percent of the locals were classified into the middle classes (among migrants, this figure was only 40 percent). 33 percent of the local-born society was poor. 42 percent of the migrant society was poor.

Social stratification based on Ferenc Erdei's theory of "staggered society" and the prestige of occupations according to Max Weber.

* Data for Eger are from 1883 based on marriages in parish registers (sample size cca. 250. The town was predominantly Roman Catholic)

Sources for Sátoraljaújhely and Varannó: MNL-BAZML SFL XV. Census of 1870;

Source for Eger: MNL-HML IV-416. Marriage registers from 1883.

Table 17. The representation of migrants in different social layers of Varannó and Sátoraljaújhely

Layer	Immigrants (%) of the layer, Sátoraljaújhely	Immigrants (%) of the layer, Varannó
Elite	74	65
Middle	60	48
Lower middle	62	80
Lower	75	63
<i>Total</i>	<i>67 (1,783 immigrants)</i>	<i>57 (409 immigrants)</i>

Measuring Wealth and Social Differentiation:

Methods, Spatial Patterns and Internal Differentiation Among Layers

In order to illustrate both spatial patterns and the distribution of wealth among social groups, wealth levels first had to be quantified. As income data were not available, we had to rely on the indirect census data referring to wealth. Because of this, the relevance of our investigation is limited. In order to reduce the subjective elements when classifying the single families into social groups, three different methods were tested.

The first method was based on Marxist sociologist and politician Ferenc Erdei's concept of the so-called "staggered society." Erdei contended that, in Hungary, each traditional class had a modern, capitalistic variant, and these variants existed in parallel and coalesced only gradually. We combined this theory with Max Weber's classification based on the social prestige of given occupations. Though Erdei's theory has been challenged and the classification based on Weber is considered too subjective, abandoning these old classifications and relying only on modern ones would render our investigations incomparable with old results. The results of this classification, including a sectoral distribution too, can be seen in Table 18 and 19.

Table 18. Social groups based on Erdei's model of a "staggered" society and on the prestige of occupations (Weber) (method 1; prs and %)

e ¹	town and county elite	lawyers, chief clerks (state servants)	47	2.2% ²
f	landowners	mainly middle estate owners	116	5.4%
p	freelance civil professions	teachers, doctors, railway engineers, photographers, clockmaker	91	4.2%
h	officials	state (lower class compared to 'e') and private (in banking and finances)	108	5%
g	agrarian experts	not independent but highly skilled agrarian wage-earners	34	1.6%
n		policemen, pandurs, postmen, etc.	30	1.5%
kk	merchants	innkeepers, railway entrepreneurs, merchants	216	10.1%
k, ka		lower financial officials (clerks), poor merchants, chandlers, grocers	151	7.0%
m	craftsmen	guild members: tailors, potters, bootmakers, etc.	677	31.5%
q	lower tertiary	transportation: cartsmen, waiters	60	2.8%
s	poor	daily wage earners in agriculture, beggars, bakers (women), washerwomen, scrap-iron collectors	508	23.7%
ö	widows		101	4.7%

Layers wealthier than the city average are indicated by grey.

1 Abbreviations used in maps and in charts.

2 This table did not contain data on 1,100 coworkers and 700 servants, thus the percentage values refer to 2,150 people and not to 4,000.

Table 19. Hypothetic social stratification based on the prestige of occupation (family heads; %)

Group	Agrarian	Industrial	Tertiary	Private tertiary	Altogether	%
Upper	f (116)		e (47)	p (91)	cca. 250	12%* (7%)
Middle		kk (30)	h (108)	kk (190), h	cca. 550	25% (25%)
Lower middle	g (34)		n (30)	k (132)	cca. 500	23% (25%)
Lower	s (343)	m (677)		s (160), q (60)	570 + some craftsmen = 800	38% (43%)
Total	cca. 500	cca. 700	cca. 200	cca. 600	cca. 2100	+101 widow households
%	25%	35%	10%	30%	100%	

* Servants or coworkers *not registered as family heads were omitted*. See corrected % values including these layers in brackets.

These categories do not strictly refer to wealth or social status. Group “p” was traditionally considered as the part of the elite, although the wealth and economic power of the civil professions (including state teachers) was significantly weaker than that of groups “f” (landowners) and “e” (official-bureaucratic elite) based on number of rooms and the other two classification methods described later. Category “f” was also not homogeneous regarding wealth. Smallholders and large estate owners were also included here because of the lack of census data concerning estate size. Freelance civil professionals and state clerks were underrepresented in Sátorajújhely compared to other towns with similar functions, where their proportion exceeded 15 percent of the earners. Compared to this, the layer of merchants (kk, k) was quite strong (17 percent), possibly as the result of relatively high number of Jews in the town and its geographical location. The proportion of craftsmen (m) was high, but not remarkably. The same percent was measured in the larger city of Debrecen.³⁸

The sectoral distribution of these groups is given in Table 18b. 35 percent of the family heads were involved in industry, but modern industrial branches were represented only by some 10 percent of the total family heads involved in industry. Guilds still dominated in this transitional period. The private tertiary reached 30 percent, reflecting the transformations (urbanization), while agriculture had already lost its dominant position (25 percent).

The *second classification* was based on quantifiable socioeconomic indicators derived from the census sheets (number of rooms, auxiliary buildings, number of servants, number of employed workers, household size). We used an *equation* to aggregate the values of the single indicators for all families, resulting in a dimensionless number, which refers to the *per capita economic potential of the family*. Based on the method of natural breaks, the 2,147 *Wohnpartheys*/families were divided into 13 groups of different sizes. The aggregated values in group 9–13 (comprising 30 percent of the households) exceeded the total town average (Table 20).

Table 20. The sociodemographic features of the 13 “social groups” (i.e. groups with different levels of wealth) defined by the method based on the equation using socioeconomic indicators (values above the average are indicated by bold letters: the average represents intergroup differences, standard deviation represents within-group differences)

Social group based on equation		Average number of children	Average number of servants	Household size	Proportion of earners	Average number of rooms	Average number of inhabitants per room
1 (127, 6%)	Mean	2.09	0.01	4.07	0.29	0.51	7.84
	St. Dev.	1.60	0.09	1.73	0.20	0.39	3.61
2 (140, 6.5%)	Mean	2.24	0.01	4.32	0.28	0.81	5.31
	St. Dev.	1.75	0.12	1.90	0.19	0.30	1.63
3 (233, 11%)	Mean	2.26	0.03	4.37	0.24	0.99	4.70
	St. Dev.	1.50	0.20	1.60	0.10	0.29	2.43
4 (258, 12%)	Mean	1.65	0.04	3.81	0.33	1.06	3.60
	St. Dev.	1.62	0.20	1.91	0.19	0.37	1.51
5 (158, 7.5%)	Mean	2.36	0.11	4.63	0.28	1.20	4.10
	St. Dev.	1.77	0.32	1.92	0.16	0.49	1.65
6 (203, 9.5%)	Mean	1.87	0.11	4.17	0.33	1.22	3.52
	St. Dev.	1.89	0.33	2.19	0.15	0.49	1.62
7 (264, 12%)	Mean	1.43	0.18	3.64	0.45	1.36	2.75
	St. Dev.	1.73	0.40	2.24	0.30	0.58	1.64
8 (104, 5%)	Mean	1.94	0.36	4.55	0.35	1.60	2.91
	St. Dev.	2.00	0.59	2.55	0.20	0.77	1.50
9 (164, 7.5%)	Mean	1.63	0.37	4.37	0.39	1.78	2.64
	St. Dev.	1.62	0.59	2.42	0.25	0.83	1.58
10 (151, 7%)	Mean	1.28	0.49	3.90	0.43	1.95	2.10
	St. Dev.	1.61	0.70	2.33	0.27	0.77	1.39
11 (83, 4%)	Mean	1.51	0.70	5.01	0.42	2.17	2.52
	St. Dev.	1.69	0.79	2.95	0.30	1.07	1.65
12 (99, 4.5%)	Mean	1.60	0.88	5.14	0.41	2.59	2.18
	St. Dev.	1.70	0.97	2.99	0.29	1.28	1.45
13 (162, 7.5%)	Mean	1.69	1.87	6.57	0.37	3.73	2.04
	St. Dev.	1.89	1.62	3.87	0.26	1.66	1.64
Total (2,149)	Mean	<i>1.81</i>	<i>0.34</i>	<i>4.39</i>	<i>0.35</i>	<i>1.53</i>	<i>3.50</i>
	St. Dev.	<i>1.74</i>	<i>0.80</i>	<i>2.45</i>	<i>0.23</i>	<i>1.09</i>	<i>2.28</i>

³⁸ Widow(er)s (family heads) were treated separately, as we did not have information about their professions.

The *third classification* was also based on a quantitative approach using the same socioeconomic and demographic indicators, but this time *automatic cluster analysis* was used. (The subjective element here was the setting of cluster numbers. The reliability of this method was validated by discriminant analysis). As this classification did not contain family size as a variable, the results indicate the *economic potential of the Wohnpartbey as a whole*.

Though automatic classifications usually lack any preconception (unlike *method 1*, based on the prestige of occupation), *groups with well-definable social characteristics were generated when applying cluster analysis*. Cluster 6, cluster 5, and cluster 1 were easily distinguishable from one another based on their socioeconomic characteristics (Table 21: the success rate of reclassification was above 90 percent here).³⁹ The boundaries of other groups were unconsolidated, fuzzy (*groups 2, 3, and 4*).⁴⁰ The fuzzy cluster 2 had one specific, conspicuous, distinctive feature: the proportion of Jews here was over 50 percent, which exceeded the town average (34 percent) and the proportion of Jews measured in other clusters. It seems that automatic clusterization confirmed the existence of the so-called “*par excellence Jewish-middle class*,” a layer that evolved parallel to the traditional middle class during the process of emancipation and the spread of capitalism, as supposed by Erdei. Its “fuzziness” indicates its transitional, unconsolidated character (as well as its wealth conditions), which also reflects its potential for assimilation to other groups.

Table 21. General sociodemographic characteristics of groups created by automatic clusterization of households

Cluster 6:	the poor: high children ratio, low proportion of earners, number of rooms under one
Cluster 5:	the poor: no servants, small household size (3 prs!), number of rooms around one
Cluster 1:	the rich: more than 2 servants, a low proportion of earners (0.2 – contrary to groups defined by the previous method, where it was over 0.4 – revealing that the two methods of defining the elite are not equivalent!), number of rooms around 4
Cluster 2:	the proportion of Jews within the group is over 50%: ‘ <i>par excellence Jewish middle-class</i> ’

³⁹ Discriminant analysis was applied as a control for clusterization.

⁴⁰ The success rate of reclassification by discriminant analysis was low, under 50 percent.

To test the correspondence/overlap of the three methods, a cross-tabulation matrix was created, which proved that, although there was a 70-70-70 percent overlap between the results of the 3 methods and the correlation coefficient was higher than 0.7, the three classifications are not equivalent (Figure 6). For example, the richest three groups (11–13) consisted of 341 families (15 percent) in the case of the *second method* (i.e. the equation referring to per capita economic power), while the richest two clusters comprised 332 family heads (*the third method*), but only 192 of the cases were common (60 percent).⁴¹ This means that *the interpretation of the results is not independent from the selected method*. Thus, in order to avoid preconceptions during generalization (i. e. the classification of earners into “social groups”), the economic potential was calculated for the *different occupations* as grouping variables, too (Table 22). Lawyers and doctors (33 persons), the thin layer of engineers and entrepreneurs, the 60 merchants, and the 60 innkeepers proved the wealthiest according to all three different calculations (see rankings in Table 22), though their household structure was quite different (for instance the number of children, proportion of earners, etc.).

Was social differentiation advanced at the time? According to Williamson, income inequalities (including both spatial and social differences) regularly grew in the first stage of capitalist transformations. Due to the *lack of income data*, we cannot test the relevance of this thesis. But based on “*complex economic potential*” calculated on the basis of the equation comprising socioeconomic indicators, some sort of social differentiation became measurable. The richest 15 percent of the *Wohnpartbeys* comprised 20 percent of the cumulative wealth (for the sake of comparison, this figure could reach 40 percent in Ottoman towns in the eighteenth century).⁴² The second richest 15 percent was not significantly poorer than the first group. Altogether, one-third of the families (750) had higher per capita economic potential than the city average, and they accounted for 50 percent of the total wealth. The poorest 50 percent shared 25 percent of the total calculated wealth (see Figure 5 and compare it with the differences observed between the wealth levels and sizes of groups “e” and “s” in Table 18). In other words, *the richer 50 percent of the population was three times richer than the*

⁴¹ They could be considered the “core elite,” followed by a “buffer-transition” group of an additional 100 families.

⁴² Canbakal and Filiztekin, “Wealth and Inequality.”

Table 22. The sociodemographic features of occupations
(values under the average are indicated by *Italic letters*)

Occupation	Average number of children per family	Proportion of earners	Average number of rooms	Inhabitant / room (avg.)	Average wealth (equation)	Average household size	Average number of servants	Average coworker number	Relative ranking based on wealth (equation)	Relative ranking based on cluster-membership	Relative ranking based on number of rooms
lawyer and doctor (33)	<i>1.39</i>	0.36	3.64	1.43	4.01	5.36	1.91	<i>0.24</i>	1	1	1
innkeeper, restaurant owner (60)	2.9	<i>0.27</i>	2.32	2.77	2.39	5.73	0.68	0.42	5	2	2
landowner (106)	2.03	0.35	2.3	2.92	2.66	4.85	0.82	0.39	2	3	3
wheat and flour merchant (21)	2.48	<i>0.22</i>	1.81	3.69	1.35	5.62	0.57	<i>0.05</i>	11	4	8
merchant (38)	0.83	0.46	1.89	1.85	2	<i>3.28</i>	0.83	<i>0.06</i>	3	5	5
engineer (18)	0.83	0.46	1.89	1.85	2	<i>3.28</i>	0.83	<i>0.06</i>	4	6	6
joiner (35)	1.69	0.39	1.84	3.52	2.24	5.57	<i>0.23</i>	1.63	6	7	7
entrepreneur (13)	2.23	<i>0.23</i>	2.08	2.67	1.35	4.85	0.31	0.31	7	8	4
butcher (27)	2.15	<i>0.27</i>	1.56	3.76	1.25	5.04	0.44	0.44	9	9	10
tanner (37)	1.86	0.36	<i>1.27</i>	3.58	1.21	4.22	<i>0.19</i>	0.41	12	10	16
craftsmen who made heavy mantles (46)	1.57	0.37	1.34	3.06	<i>1.02</i>	<i>3.93</i>		0.7	17	11	13
bootmaker (144)	2.19	0.37	1.33	<i>4.01</i>	<i>1.03</i>	4.78			14	12	14
Total sample	1.81	0.35	1.52	3.52	1.49	4.4	0.34	0.46	13	13	11
grocer, chandler (27)	2.63	<i>0.25</i>	<i>1.19</i>	<i>4.39</i>	<i>0.81</i>	5	0.41	<i>0.11</i>	18	14	18
teacher (15)	2.27	0.32	1.77	2.91	1.22	4.67	0.53	<i>0.07</i>	10	15	9
tailor (103)	1.81	0.37	<i>1.33</i>	3.67	<i>1.16</i>	4.52	<i>0.17</i>	0.64	15	16	15
shoemaker (47) ¹	1.55	0.33	1.36	3.67	<i>1.16</i>	4.87	<i>0.19</i>	0.79	16	17	12
bread-maker and sewer women (37)	<i>1.51</i>	0.61	<i>1.2</i>	2.58	1.46	2.78	<i>0.03</i>	0.54	8	18	17
cartmen (52)	1.75	0.35	<i>1.03</i>	<i>4.05</i>	<i>0.87</i>	4.12	<i>0.17</i>	<i>0.19</i>	20	19	19
personal servant (55)	<i>1.36</i>	0.48	<i>1</i>	<i>3.93</i>	<i>0.79</i>	3.27	<i>0.11</i>	<i>0.29</i>	19	20	20
agrarian wage laborer (343)	<i>1.28</i>	0.39	<i>0.86</i>	<i>4.41</i>	<i>0.54</i>	3.28	<i>0.01</i>	<i>0.15</i>	21	21	21

¹ Shoemakers were not considered wealthy by contemporary writers. Among Jews, this was a despised (but frequent) occupation according to Sólém Áléchem.

poorer half. This inequality is not considered great compared to other regions in the world at the time.⁴³

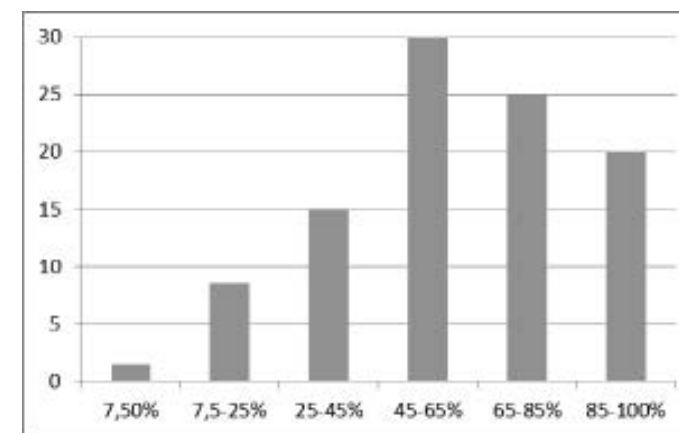


Figure 5. The distribution of economic potential (vertical axis) between groups of families (horizontal axis) as a %

The society was quite differentiated even based on single indicators, such as number of rooms, which indicated differing levels of wealth. Only 22 percent of the families had two rooms, and only 10 percent had three or more rooms (Table 6). On the other hand, the average 1.5 room/family is not greater than the value measured in Belgrade after 1900.⁴⁴ While the average population density was 3.5 persons/room (and in 25 percent of households there were four or more inhabitants per room), in wealth groups 9–13 (representing 15 percent of *Wohnpartheys*), this improved to 1.5 person/room.⁴⁵

The classification results also confirm, that our pre-defined categories (method 1: based on the prestige of occupation) “e,” “f,” “kk,” and “h” are considered the richest, followed by “p.” Thus, our preconception is not flawed (Table 23). The minor differences between the cluster-based and equation-based

⁴³ The richest 2 percent owned 25 percent of wealth in China. In New-Spain, the richest 10 percent owned 55 percent of the wealth in 1790. In Bihar (India), in 1804 the richest 20 percent owned 50 percent of the wealth, and in Naples in 1811 the richest 10 percent owned 33 percent of the wealth. Milanovic, Lindert and Williamson, “Measuring Ancient Inequality.”

⁴⁴ In Belgrade 60 percent of the *houses* had not more than one room in 1907 (as in the case of *Wohnpartheys* in Sátorajújhely), but the density was 3.5 prs/house, while in the Hungarian town it was 9 prs (calculating with two households/house). Vuksanović-Anić, “Urbanistički razvitak Beograda,” 458–65.

⁴⁵ The narrow elite (group 11–13) was characterized by a low number of children, but this was equalized by the auxiliary workforce (Table 19). The proportion of earners was higher than the city average. The average population density (prs/room) and number of rooms in the households of the elite (above two) were similar to the figures measured in groups 9 and 10.

classification are due to the fact that the latter measures *total wealth of a family* regardless of family size. Group “f” is considered poorer if *per capita wealth* is calculated (instead of household wealth), *because agriculture was (and remained) a labor intensive sector in Hungary, traditionally characterized by larger family size.*

As for the internal differentiation among these groups, 90 percent of family heads had two or more than two rooms in group “e.” This figure was 60 percent in group “f,” 70 percent in groups “kk” and “Hungary,”⁴⁶ and only 40 percent among households in category “p” (freelance professions).⁴⁷ In the case of layers “s,” “q,” and “n,” 60 percent of the families were classified into the poorest four categories (1–4), while this was under 10 percent among inhabitants grouped into categories “kk,” “f,” “p,” “e,” and “h.” In these latter categories, the wealthiest four (9–13) constituted 40–70 percent of these groups (Figure 6). This figure reached 70 percent in group “e” (official-bureaucratic elite) and only 40 percent in group “p” (freelance professions).

These data also reflect the *weakening of the traditional agrarian elite* (or the fact that smallholders were also included in this group), *but the merchant elite was not yet strong enough to take over the positions of the bureaucrats. The agrarian elite successfully transformed its economic power into political power, while the positions of people with freelance occupations were relatively weak compared to those of the state bureaucracy.* As groups 9–13 represent a broad swath of more than 600 hundred families, it is not surprising that some artisans (20 percent) also appear in these aggregated groups.

Table 23. The rankings of the social layers pre-defined by prestige of occupation – using the two different statistical classification methods (cluster-based; equation-based)

	e (47)	h (108)	f (116)	kk (214)	p (91)	ö (101)	Total (2149)	k (132)	m (677)	g (34)	q (60)	n (30)	s (508)
average cluster membership	2.45	2.8	3.2	3.06	3.71	3.85	3.93	3.91	3.97	4.21	4.49	4.48	4.75
ranking	1	2	4	3	5	6	8	7	9	10	12	11	13
average equation-based wealth	4.52	2.85	2.57	2.12	1.84	1.81	1.49	1.41	1.33	1.04	0.83	0.82	0.66
ranking	1	2	3	4	5	6	7	8	9	10	11	12	13

Compare with Table 22. The numbers in brackets represent the family heads classified into the group.

46 In 1926, a merchant family or the family of an official in Belgrade had 2.5 rooms, artisans had 1.9, and workers had 1.5. The former values are similar to the values for Hungary, while the latter is higher. Calic, *Sozialgeschichte Serbiens*, 323–25.

47 Or, using a different approach, in cluster 1 each family had two or more than two rooms (90 percent had more than 3), while it was only 60 percent in cluster 2.

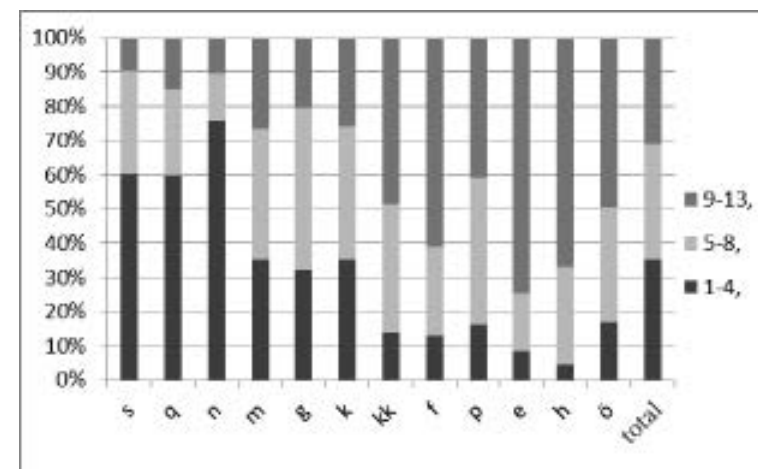


Figure 6. Internal differentiation among social groups based on the prestige of occupations
Groups 1–4 refer to poor, groups 9–13 are wealthier than the average.

Spatial Pattern of Wealth and Social Classes

We have already investigated the spatial pattern of religions and occupations, but the spatial pattern of wealth also shows interesting features. *The town was generally characterized by a concentric center-periphery accommodation pattern.* This is true both for social groups (first method) and wealth classes. The wealthiest families lived along the main street of the town, which formed a north-south axis (Figure 7). Perpendicular to this street another road led to the east across the Ronyva River, where the concentration of rich people was also higher compared to other parts of the town. *Based on the complex indicator of wealth, the northernmost and southernmost districts were inhabited by the poor.* The map showing the social classes (based on the modified Erdei-model, Figure 8) and the map illustrating the number of rooms per family (used as a proxy for wealth) also confirms this phenomenon. The picture becomes more complicated if population density is illustrated on the map (Figure 4),⁴⁸ because one can find both large and small families among both the rich and the poor. In other words, *the correlation between the size of the Wohnpartbey (or number of children) and wealth was insignificant.* On the contrary, based on these maps, there seemed to be *evident connection between wealth and certain religions* (Figure 2 and 7; Figure 9) *and between wealth and occupation* (Figures 7, 8, and 15).

48 The number of rooms per family was high along the north-south axis of the town, while population density was great in the north and on the eastern outskirts and in Zsólyomka.



Figure 7. Spatial pattern of wealth based on the method using an equation composed of sociodemographic indicators, 1870



Figure 8. Spatial pattern of social groups in Sátoraljaújhely in 1870
For the detailed legend see Table 18a.

These variables were previously omitted from the investigations as they were not quantifiable. In order to measure and compare the relative wealth levels of different religious communities and occupations, a statistical analysis was carried out (Table 23).

With regards to religious differences, the Protestants (both Calvinists and Lutherans) had the greatest economic potential, followed by Jews (Figure 9). Greek Catholics were poorer than the average. Differentiation within the religious groups also advanced by 1870. Standard deviation values were high (there were poor artisans among Protestants and beggars and scrap-metal collectors among Jews). Protestants were overrepresented within category “h,” while Jews were overrepresented among members of group “kk” (both constituting the part of the elite). Within group “e” and group “f,” no similar trends could be observed

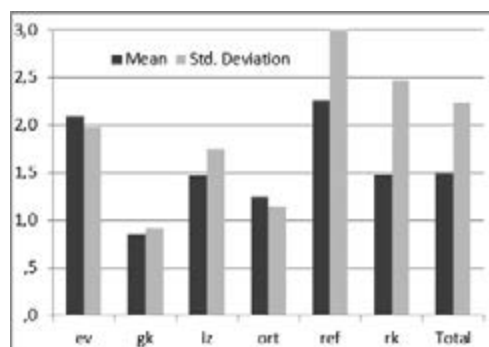


Figure 9. Connection between religion and economic potential based on the complex indicator (average, std. dev.)

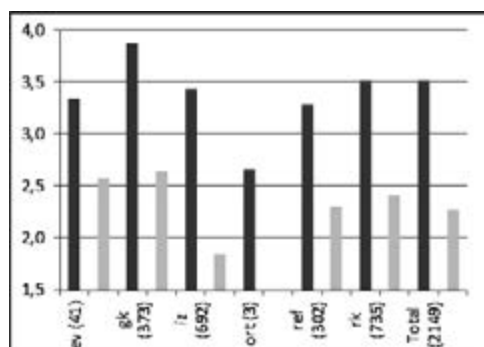


Figure 10. Differences in population density (inhabitants /room) based on religion (average and std. dev.)¹
 1 Mean is dark. Std. Deviation is indicated by light grey.

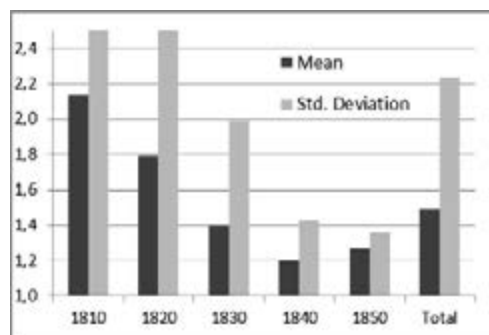


Figure 11. Connection between average economic potential (complex indicator based on the equation) and the age of the family head

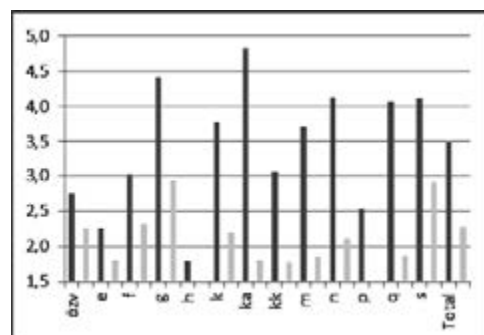


Figure 12. Differences in population density (inhabitants /room) based on social groups defined by the prestige of occupation (Erdei-Weber method) (average and std. dev.)

(Figure 13). The differences in population density (persons/room) regarding religions were also significant (Figure 10). *Age also influenced wealth* (Figure 11).

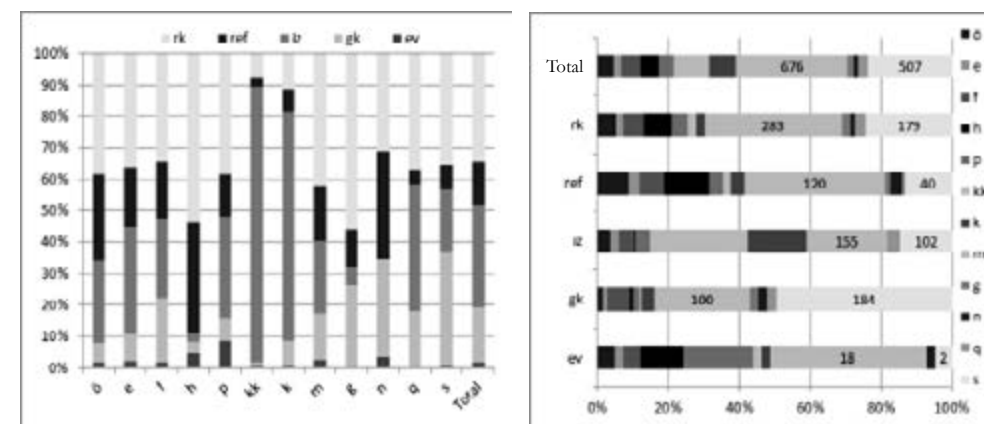


Figure 13. Differences in religious composition of different occupation groups (based on the Erdei-Weber method)

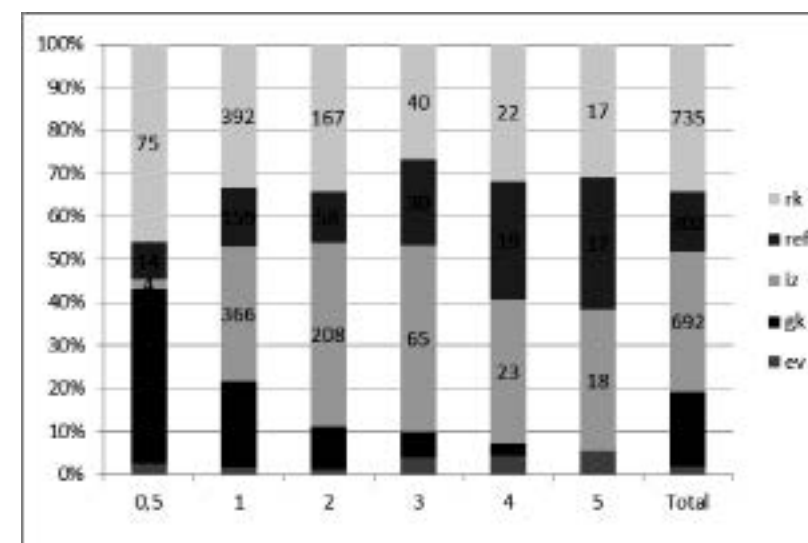


Figure 14. Differences in religions regarding the number of rooms / Wohnpartey

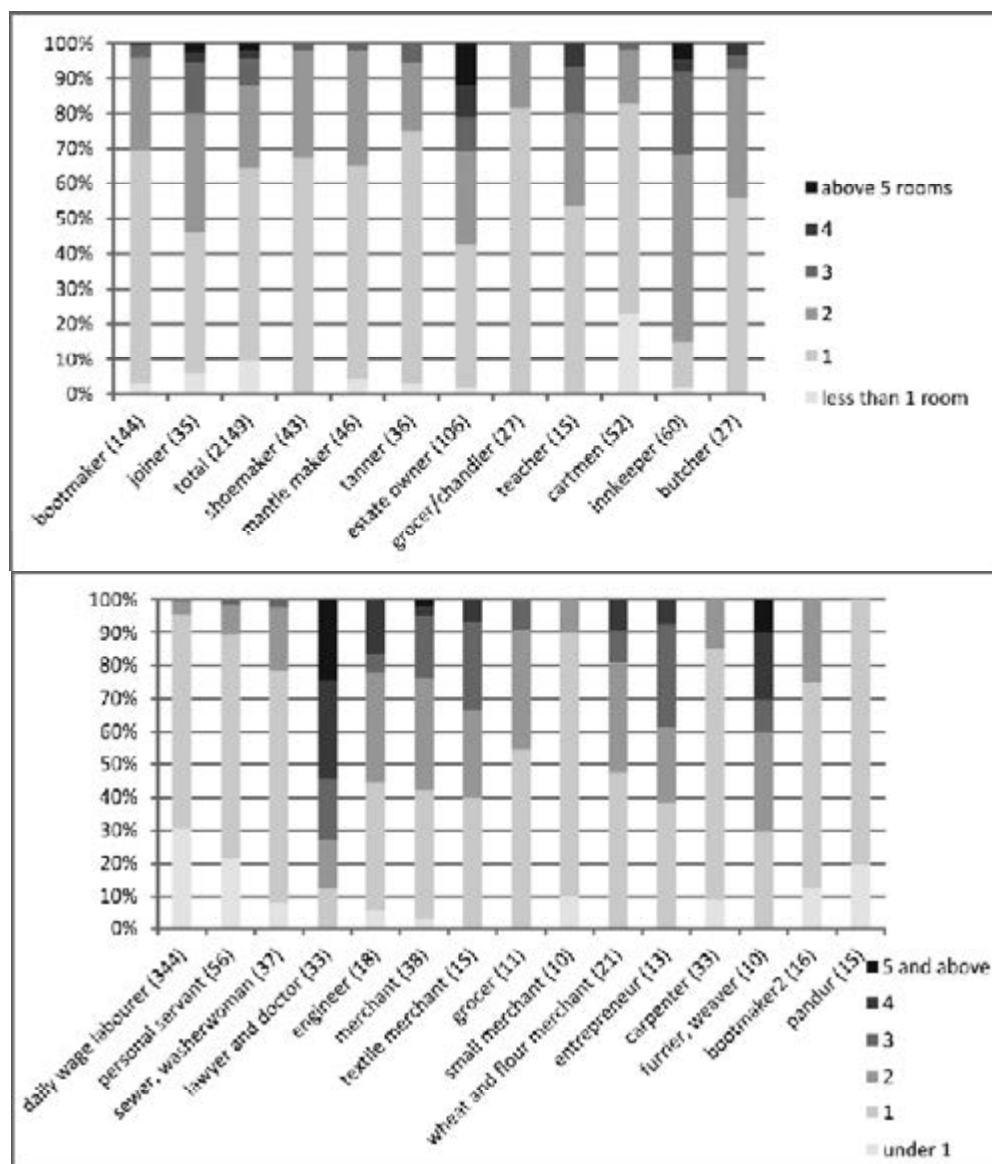


Figure 15. Internal differentiation among occupations based on number of rooms

existence of a Jewish middle class, the transformation of the elite, the shift of power from the old agrarian elite, spatial segregation of Jews, the extent of amalgamation of emerging capitalist social divisions and the traditional classes, etc.). Some phenomena formerly investigated through individual case studies were statistically verified. We managed to reconstruct the accommodation pattern of the town in the beginning of the period of industrialization, and we also succeeded in tracing persisting and transforming elements regarding the location of occupations (tanners lived near water, bootmakers were concentrated in one street in the southern quarter) and the marriage behavior of different communities. The role of migration in the transformation processes was examined in a comparative context (by analyzing the immigrant and host societies of three towns), and the participation of different occupational and religious groups in this was also traced, along with their strategies. At the same time, we tried to utilize the hidden potentials of the 1870 census by creating new sociodemographic indicators (proportion of children/family; proportion of earners/family; population density measured by inhabitants/room, room/family, etc.) and to measure the wealth or economic potential of the households. We tested three different methods to classify the population into social groups, and the three methods yielded partly corresponding results. The spatial patterns of the investigated sociodemographic phenomena and indicators were also mapped.

The core of the elite can be described as the common set of the three different methods (190 households). Altogether a maximum of 15 percent of the households could have been said to have belonged to the upper class. We defined the local elite as households with three rooms or more and two servants/coworkers. Protestants were overrepresented among them, but their positions were declining, and they were bound to the traditional official-bureaucratic elite. The new capitalist elite, composed of Jewish merchants, entrepreneurs, and Lutheran engineers was still weak in 1870. Despite their physical closeness of these two groups (living in the same streets), they did not really begin to amalgamate.

Summary

To summarize our results, the GIS-aided evaluation of the 1870 census sheets managed to bring a new approach (an examination of various social divisions from the perspective of settlement patterns) into Hungarian urban and social history. HGIS contributed to the reevaluation of debated questions (the

Archival Sources

- Magyar Nemzeti Levéltár Borsod-Abaúj Megyei Levéltárának Sátorajújhelyi Fiókleveztára [Hungarian National Archives, County Archives of Borsod-Abaúj-Zemplén, Archives at Sátorajújhely] (MNL-BAZML SFL) XV. and XXXIII.
- Magyar Nemzeti Levéltár Heves Megyei Levéltára [Hungarian National Archives, County Archives of Heves] (MNL-HML IV-416)

Bibliography

- Barta, János. “Ha Zemplén vármegyét az útas vizsgálja...” *Adattár Zemplén megye 18. századvégi történetéhez* [When Zemplén County is investigated by travelers... Material for studying the history of Zemplén County at the end of the eighteenth century]. Vol. 2. *Speculum Historiae Debreceniense* 20. Debrecen: Debreceni Egyetem Történeti Intézete, 2015.
- Beluszky, Pál. *Magyarország településföldrajza: Általános rész* [Settlement geography in Hungary: General part]. Budapest – Pécs: Dialóg Campus, 1999.
- Calic, Marie-Janine. *Sozialgeschichte Serbiens 1815–1941: Der aufhaltsame Fortschritt während der Industrialisierung*. München: Oldenbourg, 1994.
- Canbakal, Hülya, and Filiztekin, Alpay. “Wealth and Inequality in Ottoman Lands in the Early Modern Period.” Working Paper, 2013. Accessed on December 30, 2017. http://aalims.org/uploads/Rice_v1.pdf
- Dányi, Dezső. “Regionális vándorlás, urbanizáció a XIX. század végén” [Regional migration, urbanization at the end of the nineteenth c.]. In *Migráció Tanulmánygyűjtemény* [Collected studies on migration] Vol 1. 87–114. Budapest: KSH Népeség-tudományi Kutató Intézet, 1998.
- Demeter, Gábor. “A dualizmus kori Eger lassú népességnövekedésének demográfiai hátteréről” [About the demographic background of the population increase in Eger under Dualism]. *Acta Geographica Debrecina* 37 (2006): 181–97.
- Demeter, Gábor, and Róbert Bagdi. “Sátorajújhely migráns és helyi társadalmá az 1869. évi népszámlálás alapján” [Indigenous and migrant societies in Sátorajújhely based on the census data of 1869]. *Történelmi Szemle* 57, no. 3 (2015): 381–410.
- Demeter, Gábor, and Róbert Bagdi. *A társadalom differenciáltságának és térbeli szerveződésének vizsgálata Sátorajújhelyen 1870-ben* [The analysis of differentiation and spatial patterns of society in Sátorajújhely in 1870]. Debrecen – Budapest, 2016.
- Erdei, Ferenc. “A magyar társadalom a két háború között: A magyar társadalomszerkezet” [Hungarian society in the Interwar period: The structure of society]. In *Magyarország társadalomtörténete* [The social history of Hungary]. Vol. I/1, edited by György Kövér. 30–40. Budapest: Nemzeti Tankönyvkiadó, 1995.
- Gerő, András. *Dualizmusok: A Monarchia Magyarországa* [Hungary of the Monarchy]. Budapest: Új Mandátum Kiadó, 2010.
- Gregory, Ian N. *A place in History: A short introduction to HGIS by the lead developers of GBHGIS*. Accessed on March 20, 2019 <http://hds.essex.ac.uk/g2gp/gis/index.asp>
- Gyimesi, Réka, and Dániel Kehl. “A Spatial Analysis of the Socio-economic Structure of Bonyhád Based on the Census of 1869.” *Hungarian Historical Review* 8, nr. 1. 2019: 28–51.
- Katus, László. *A modern Magyarország születése – Magyarország története 1711–1914* [The birth of modern Hungary – the history of Hungary, 1711–1914]. Pécs: Kronosz Kiadó, 2012.
- Malojčić, Miron. *Selo i tuberkuloza* [Village and tuberculosis]. Zagreb: Škola Narodnog zdravlja, 1936.
- Mazsu, János. “Piac, kereskedelem, kapitalizálódás és piactér Debrecenben a 19. században” [Markets, trade, the spread of capitalism, and marketplaces in Debrecen in the nineteenth century] I-II. *Metszetek* 2 nos. 3, 4. (2014)
- Mazsu, János. “Inside borders: Jewish settlement in banned cities: Jewish immigration in Debrecen (Hungary) in the period between 1790–1870.” AHEA–American Hungarian Educators Association 37th Annual Conference, 26–29 April 2012, Long Island University, Brooklyn Campus, NY.
- Mazsu, János. “‘Inside borders.’ Jewish settlement in banned cities: Jewish immigration in Debrecen (Hungary) in the period between 1790 –1870.” *Metszetek* 7, no. 2. (2018)
- Milanovic, Branko, Peter Lindert, and Jeffrey G. Williamson. “Measuring Ancient Inequality.” *NBER Working Papers*, 13550. Cambridge, MA, 2007.
- Őri, Péter. “Család és házasság a 18–19. századi Magyarországon: Pest–Pilis–Solt–(Kiskun) megye, 1774–1900” [Family and marriage in the eighteenth and nineteenth centuries in Hungary: Pest–Pilis–Solt–(Kiskun) County, 1774–1900.] *Korall* 8, no. 30 (2007): 61–98.
- Pozsgai, Péter. “Görög és római katolikus nemzetiségek házasságainak jellemzői Torna megyében a 19. század közepén” [Marriage patterns among Greek and Roman Catholic minorities in Torna County in the nineteenth c.]. *Korall* 8, no. 27 (2007): 45–93.
- Todorova, M.: Situating the family of Ottoman Bulgaria within the European pattern. *The History of the Family* 1 no. 4 (1996): 443-459.

Veliky, János. *A változások kora. Polgári szerepkörök és változáskoncepciók a reformkor második évtizedében*. Budapest: Új Mandátum, 2009.

Vuksanović-Anić, D. “Urbanistički razvitak Beograda u periodu između dva svetska rata (1919–1941)” [Urban development of Belgrade during the Interwar period, 1919–1941]. In *Istorija XX. veka. Zbornik radova* 9. 458–465. Beograd, 1968.

Sólem Áléchem. *Tevje a tejesember, avagy hegedűs a háztetőn* [Tevje the Milkman, or Fiddler on the Roof]. Budapest: Tericum, 2001.