

Doctoral (PhD) thesis

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Analysis of the economic and social situation and the development possibilities of the Kisteleki district

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1. OBJECTIVES

In my thesis, I examine the disadvantaged district of Kisteleki, located in the South-Alföld region, in the Csongrád-Csanád county. According to the currently valid Government Decree 290/2014 (XI. 26.), it is classified as a beneficiary district and a district to be developed, and it is the 41st poorest district in Hungary. The situation of disadvantaged areas not only affects the living conditions of the people living there but can also determine the social and economic processes of larger territorial units. Therefore, my choice of topic is important and topical because of the significant substantial territorial disparities in the world, Europe and our country. These territorial disparities also appear between urban and rural areas and are constantly increasing. Territorial and social inequalities are a cause for concern in our country but also worldwide, as they give rise to debates on politics, social issues, redistribution of wealth, social inclusion and acceptance, among other things. The personal reason for my choice of topic is that I live in a disadvantaged settlement in the Kisteleki district. Consequently, I experience the problems and everyday struggles of underprivileged areas and settlements in my everyday life. I also have a personal connection to the Kisteleki district, as my family farms in Balástya, one of the settlements in the district.

In line with the ideas of TÓTH and OLÁH (2019), the operational security of settlements is a key issue for the stable and secure development of the state. Addressing the problems of disadvantaged areas and their development contributes to reducing social inequalities and strengthening social cohesion, distributing resources more equitably, promoting economic development, increasing population resilience, and appropriate development programs can also help to promote environmental protection and sustainable development. I believe that the results obtained from my research provide a good basis for identifying future development directions for the settlements of the Kisteleki district and can be good practice for overcoming the current situation in other disadvantaged districts.

Objectives

My general objective is to give a picture of the economic and social situation of the disadvantaged Kisteleki district and to make proposals for its recovery from the current situation. The Kisteleki district is classified as a beneficiary district and a district to be developed according to the Government Decree 290/2014 (26.XI.). First, I will examine the development of the economic, social and infrastructural situation of the Kisteleki district among the districts to be developed using a complex development indicator at two points in time, in 2013 and 2022. For the complex development indicator, I set up capital factors based on the work of BODNÁR (2016). I am to explore how the situation of the Kisteleki district has evolved over almost 10 years compared to the other districts to be developed, and which territorial capitals have changed substantially.

I also use a complex development indicator to examine the settlements of the district in more depth. Based on the indicators contained in the Government Decree 105/2015 (IV. 23.) on the classification of beneficiary settlements and the criteria for classification, I will develop 4 groups of indicators. The purpose of using these indicators is to provide a more in-depth analysis and quantification of the socio-economic-environmental factors of the area. I aim to identify the factors that have led to the development of deprivation in the district. I will analyse the situation of the settlements in the Kisteleki district in 2013 and 2022 not only separately but also compare them to each other. As a complement to the secondary research, I conducted semi-structured interviews with the mayors of the settlements and also asked the inhabitants of the region about the current situation of the settlements, their prospects and development opportunities. After processing the data, I will propose alternatives and development options to overcome the current situation of this disadvantaged district. In this way, my research can contribute to the definition of more precise development directions and objectives that will determine the future of the settlements.

Research questions

I will pursue my objectives along the following research questions:

1. How has the situation of the Kistelek district evolved over the last 10 years compared to other districts to be developed?
2. Which territorial capitals has the Kistelek district managed to improve between 2013 and 2022?
3. What is the socio-economic and environmental situation of the municipalities in the Kistelek district and how heterogeneous are they?
4. Has there been a shift in the socio-economic and environmental situation of the Kistelek district by 2022 compared to 2013?
5. What are the socio-economic and environmental factors that have led to the disadvantaged situation in the district under study?
6. Is there any possibility for the district (or its municipalities) to break out of its current situation? What areas could be developed as a break-out point and what means are available to do so?
7. How do the leaders of the municipalities surveyed assess their own municipalities and what development directions do they identify for the future?
8. How do local residents assess their own municipality and what are the potentials for the future?

Hypotheses

H1: I assume that statistical tests can show that the district of Kistelek has managed to improve its complex development indicator for socio-economic-environmental factors by 2022 compared to 2013, and that specific territorial capital factors play a prominent role in this.

My assumption is based on the fact that over the last 10-15 years, the region has received lots of EU and other support to improve the quality of life of its inhabitants. Furthermore, the district is in a very favourable geographic position, as it is crossed by the Budapest-Szeged railway line, as well as the main road 5 and the M5 motorway, which can be accessed from Balástya, Csengele and Kistelek. The easy accessibility of an area facilitates the transport of passengers and goods, making it more attractive to investors which, in turn, contributes to the expansion of economic opportunities. The secondary methodological tools used to test the hypothesis are the calculation of a complex development indicator, followed by a cluster analysis to group the districts to be developed.

I am to show how the situation of the Kisteleki district in 2013 and 2022 compared to itself and to the other districts to be developed. An important research question is which territorial capitals have improved by 2022 compared to 2013 and which capitals require intervention for all settlements in the district.

H2: I assume that after the calculation of the complex development indicator it can be shown that the settlements of the study area are basically heterogeneous, in addition to the development ranking, so that the possibility of uniform development can be excluded.

My assumption is based on the fact that the settlements of the Kisteleki district, although located in close proximity, have different agroecological characteristics. Hence, the forms and weights of agriculture are different in the settlements. Due to the geographical conditions, the access time to Szeged, the county seat, is not uniform. Furthermore, the historical past of the settlements also determines their development trajectories, which also varied in the case of the settlements studied. Ethnic composition contributes to the different ways of life, which is specific to the case of Baks, for example, because of a large gypsy community there. The primary methodological tool is a semi-structured in-depth interview with the municipal leaders. While, the secondary methodological tools for hypothesis testing are the calculation of a complex development indicator, including a detailed analysis of the secondary data.

To verify the hypothesis, a complex development indicator will be developed, which will help to reveal the socio-economic-environmental situation of the settlements of the Kisteleki district. The

study will also be supplemented by primary research methods, which will provide a detailed description of the settlements' endowments, characteristics and potential.

H3: The settlements of the Kistelek district - despite the district classification to be developed - show a demonstrable development trend, which the population can also feel in their daily lives. At the same time, it can be confirmed that the local inhabitants basically like living in the municipalities of the district.

My assumption is based on the fact that the settlements within the district have also received lots of EU and other funds over the last 10-15 years. In terms of transport infrastructure, many of the settlements studied are in a better position than before, thanks to investments. The development of the settlements is also confirmed by previous research (e.g. by the Hungarian Chamber of Commerce and Industry, the Institute of Economic and Business Research) and by the results of our own studies.

The primary methodological tool is a semi-structured in-depth interview with the municipal leaders and a questionnaire survey of the population of the district. While, the secondary methodological tool for hypothesis testing is the calculation of a complex development indicator.

H4: I assume that agriculture and tourism can play the most important role in the effective development of the disadvantaged Kisteleki district, after exploring the unique local resources provided by its endogenous endowments.

My assumption is based on the fact that the economy of the district is primarily based on agriculture, which has a long history. In terms of tourism, the Kisteleki district has an outstanding cultural and historical centre, not only in the region but also nationally. The Ópusztaszeri National Historical Park, located here, has contributed to the establishment of various service providers (accommodation, restaurants) in the area. The primary methodological tools used for the hypothesis testing are a semi-structured in-depth interview with the municipal leaders and a questionnaire survey among the population of the district.

My aim is first of all to explore in depth the characteristics of the Kisteleki district using primary and secondary research tools, to find out which socio-economic-environmental factors have led to the disadvantaged situation of the district. In the following, I will look for answers to which areas of development could be a break-out point for the settlements/wards under study to escape from their disadvantaged situation. The results of the research will contribute to formulating relevant proposals for the future development of the area.

2. MATERIAL AND METHODS

The main aim of the research is to examine the economic and social situation in the Kisteleki district. The analysis of the district and its settlements was carried out at two points in time, in 2013 and in 2022. I chose the year 2013 because that is when the district system was introduced in Hungary. The reason for selecting the other date was that the most recent data available at the time of the research was 2022 for the indicators chosen.

2.1. Analysis of the districts to be developed using a complex development indicator

First, I examined the situation of the Kisteleki district among the districts to be developed using a complex development indicator, where six capital factors were developed. For the development of the indicators of the capital factors I used data from two databases: the National Spatial Development and Spatial Planning Information System (Országos Területfejlesztési és Területrendezési Információs Rendszer: TeIR) and the Regional Statistical System of the Central Statistical Office (Országos Területfejlesztési és Területrendezési Információs Rendszer: TeIR). The complex development indicator developed in the secondary research was based on the Government Decree 290/2014 (26.XI.) and the study by KOVÁCS and BODNÁR (2016). The purpose of applying the indicator was to examine the districts to be developed, highlighting the situation of the district of Kisteleki. Based on the study of KOVÁCS and BODNÁR (2016), I developed 6 capital factors within the complex development indicator, which I summarized in Table 1. The study dates were 2013 and 2022. In their study KOVÁCS and BODNÁR (2016) investigated rural micro-regions. They involved capital factors related to territorial capital and endogenous development and then further analysed the capital endowment of each region. The capital factors that I finally developed, differ from the indicators developed by KOVÁCS and BODNÁR (2016), because data were not available in all cases or the methodology of data collection changed. Therefore, I omitted some indicators or used others instead. One such indicator is the number of active enterprises in the different sectors, where the time series has changed in methodology, limiting the comparability of the data. Data are available at the level of the legal unit in the past, and from 2017 onwards at the level of the economic unit.

Table 1: Indicators used in the study to determine territorial capital factors

Capital factor	Indicators
Material capital type	
Private fixed capital (material wealth)	Personal income tax payer, per 100 inhabitants (persons) Domestic income per inhabitant, subject to personal income tax (HUF) Number of passenger cars, per 1000 inhabitants Number of dwellings built during the year, per 1000 dwellings Personal income tax per person, total (HUF) Personal income taxable income per person; from employment (HUF) Personal income taxable income per person; from partnership (HUF) Number of persons, per 100 dwellings
Entrepreneurship Environment	Number of registered enterprise; Agriculture, forestry and fishing (TEÁOR08: A) (31 Dec) per 1000 persons Number of registered enterprise; Industry (TEÁOR08: B+C+D+E) (31 Dec.) per 1000 persons Number of registered enterprises in services, per 1000 persons Number of registered enterprises in services per 1000 inhabitants Registered capital of enterprises, per inhabitant (HUF 1000) Exports as a percentage of net sales (%)
Infrastructure Capital	Percentage of dwellings connected to public drinking water supply (%) Percentage of dwellings connected to public sewerage network (%) Household gas consumers per 100 dwellings (persons) Electricity supplied to households, per inhabitant (1000 kWh) Completion of municipal pavements (%) Completion of municipal roads (%) Time to reach Budapest by the fastest road (min) Time to reach own county seat by the fastest road (min) Time to the nearest motorway junction by the fastest road (min)
Immaterial capital type	
Social capital	Natural increase, decrease (‰) Percentage of registered jobseekers under 25 (%) Internal migration balance, per thousand inhabitants (‰) Registered jobseekers per 100 persons aged 15-64 (persons) Number of registered crime, per 1000 inhabitants Number of civil organisation, per 1000 inhabitants Percentage of permanent population aged 0-14 (%) Percentage of permanent population aged 65x (%)
Human capital	Percentage of employees in high prestige occupational groups (%) Number of students with a pass in the school-leaving examination, per 1000 persons (persons) Students with successful vocational examinations per 1000 persons (persons)
Cultural capital	Museum visitors per 100 inhabitants (persons) Number of library units borrowed from municipal libraries, per 100 inhabitants Members of creative cultural communities, per 100 inhabitants (persons) Participants in regular forms of cultural activities, per 100 inhabitants (persons) Regular cultural activities, per 1000 inhabitants (persons)

Source: own edition based on Kovács-Bodnár, 2016 (2025)

The calculation of the complex development indicator was done along the following steps:

Step 1: Transformation of the basic indicators to a scale of the same size by a normalization procedure based on the following formula:

$$f_{a_{i,j},norm} = \frac{f_{a_{i,j}} - \min(f_{a_{i,j}})}{\max(f_{a_{i,j}}) - \min(f_{a_{i,j}})} 100$$

where

$f_{a_{i,j},norm}$: normalized basic indicator

$f_{a_{i,j}}$: basic indicator

$\min(f_{ai,j})$: minimum value of the basic indicator

$\max(f_{ai,j})$: maximum value of the basic indicator

For the indicators that have a negative impact on the development of a given district, such as registered crime per 1000 inhabitants, I applied an inverse formula, i.e. I subtracted the normalized basic indicator from the highest value of the basic indicator and divided by the range.

Step 2: Calculate group indicators: the average value of the basic indicators within a group gives the value of the group indicator for that group, based on the following formula:

$$f a_i = \frac{1}{n} \sum_{j=1}^n f a_{i,j,norm}$$

where

$f a_i$ = group indicator

$f a_{i,j,norm}$: normalized basic indicator

n : number of indicators in the group

Step 3: Calculate the complex indicator: the average of the six group indicators gives the value of the development complex indicator, based on the following formula:

$$f i = \frac{1}{m} \sum_{i=1}^m f a_i$$

where

$f a_i$: group indicator

$f i$: complex indicator

m : number of group indicators

2.2. Cluster analysis

Cluster analysis is a data clustering technique that allows data to be divided into homogeneous groups. The data obtained were subjected to statistical analysis at the 95% significance level. I also adopted the Kolmogorov-Smirnov test at the 95% level.

The cluster analysis was performed to categorize n items into k groups ($k > 1$), which are called clusters, using p ($p > 0$) variables. As with other types of statistics, cluster analysis has several variants, each with its own set of operations. I chose the "K-based clustering procedure", where the clusters are predefined. Cluster analysis was carried out using the Statistical Package for Social Sciences (SPSS). Cluster analysis was used to categorize the districts to be developed based on the results of the complex development index, in which I first examined the percentage change in 2022 compared to 2013. The results of the cluster analysis were entered into a geographical information system and then plotted on a map using geographic information techniques. For the map representation I used the QGIS (3.28.0) software.

2.3. Analysis of municipalities using a complex development indicator

Based on the current Government Decree 105/2015 (IV.23.) on the classification of beneficiary settlements and the criteria for classification, I prepared the complex development index for a deeper analysis of the settlements. I did not develop capital factors in this case, because even less data was available than at the district level. For example, it would not have made sense to include secondary education and educational attainment indicators, as they would have been zero for all settlements except Kistelek.

The government regulation examines settlements from a socio-economic and infrastructural point of view. However, the government decree does not rank the settlements according to the results of the complex development indicator but only classifies them into the following categories: socio-economically and infrastructurally advantaged settlements and settlements with high unemployment. These groups indicate the development/underdevelopment of the settlements but do not show their relationship to each other. The purpose of using this indicator is to give an accurate quantification of development in the Kisteleki district and to compare the situation of the settlements with each other. Following the government decree, I have developed 4 groups of indicators, as shown in Table 2.

Table 2: Indicators used for the complex development assessment

Indicator group	Indicators
Social and demographic indicators	Population density (inhabitants/km ²) Natural increase, decrease (%) Internal migration balance, per thousand inhabitants (%) Average monthly number of persons receiving regular social assistance (persons) Average monthly number of persons receiving health and childcare allowance since 1 March 2015 (persons) Average number of beneficiaries of regular child protection benefits (persons) Proportion of disadvantaged pre-school children (%) Disadvantaged primary school pupils in full-time education (%) Percentage of the permanent population aged 0-14 (%) Percentage of the permanent population aged 65x (%)
Housing and living conditions indicators	Dwellings built during the year, per 1000 dwellings (units) Personal income tax payer, per 100 inhabitants (persons) Domestic income per inhabitant subject to personal income tax (HUF) Number of registered crime, per 1000 inhabitants
Local economic and labour market indicators	Registered jobseekers per 100 persons aged 15-64 (persons) Percentage employed in high-prestige employment groups (%) Share of registered job seekers with 8 or less years of primary education (%) Percentage of registered job seekers under 25 (%) Registered capital of enterprises per inhabitant (1000 HUF) Number of registered enterprises per 1000 inhabitants Number of non-governmental organizations per 1000 inhabitants
Infrastructure and environmental indicators	Internet subscription on xDSL network per 1000 inhabitants (pcs) Municipal pavement coverage (%) Completion of municipal roads (%) Household gas consumers per 100 dwellings (persons) Percentage of dwellings connected to public drinking water supply (%) Percentage of dwellings connected to public sewerage network (%) Electricity supplied to households per inhabitant (1000 kWh) Time to reach own county seat by road, fastest route (minutes) Access time to nearest motorway junction by road, by the fastest route (minutes)

Source: own edition based on Government Decree 05/2015 (IV. 23.) (2025)

The calculation of the complex development indicator was done along the following steps:

Step 1: Transformation of the basic indicators to a scale of the same size by a normalization procedure based on the following formula:

$$f a_{i,j,norm} = \frac{f a_{i,j} - \min(f a_{i,j})}{\max(f a_{i,j}) - \min(f a_{i,j})} 100$$

where

fai,j,norm: normalized basic indicator

fai,j: basic indicator

min(fai,j): minimum value of the basic indicator

max(fai,j): maximum value of the basic indicator

For the indicators that have a negative impact on the development of a given district, such as registered crime per 1000 inhabitants, I applied an inverse formula, i.e. I subtracted the normalized basic indicator from the highest value of the basic indicator and divided it by the range.

Step 2: Calculate group indicators: the average value of the basic indicators within a group gives the value of the group indicator for that group, based on the following formula:

$$f a_i = \frac{1}{n} \sum_{j=1}^n f a_{i,j,norm}$$

where

fai = group indicator

fai,j,norm: normalized basic indicator

n: number of indicators in the group

Step 3: Calculate the complex indicator: the average of the four group indicators gives the value of the development complex indicator, based on the following formula:

$$f i = \frac{1}{m} \sum_{i=1}^m f a_i$$

where

fai: group indicator

fi: complex indicator

m: number of group indicators

I entered the results of the complex development indicator into a geographical information system and plotted them on a map using a geographic information system. The mapping was done using the software QGIS (3.28.0).

For a further and deeper examination of the municipalities, I used descriptive statistics analysis and also conducted a change analysis.

2.4. Trend calculation

To assess the social and demographic situation in the Kisteleki district, I calculated trends to estimate the population for the future. The development of the population is very important for the development of a region. The population projection was made using the following formula:

$$P(t) = \frac{P_0 K}{P_0 + (K - P_0)e^{-rt}}$$

where

P(t)=population expected in the future (at a predetermined time)

P0 = initial population

K = the carrying capacity of the environment (i.e. the population that the environment can still support)

r = difference between birth rate and death rate

t = the number of projected years for which we wish to determine the future population.

From the above formula, it can be seen that $P(t) \rightarrow K$ if $t \rightarrow \infty$, and further, if $0 < P_0 < K$, then $0 < P(t) < K$ is satisfied for all $t > 0$.

Substituting into the above formula, we can therefore determine the projected future population size in time given the initial parameters (BRAUER et al., 2010).

I have further refined the population projections by taking into account the evolution of live births and deaths, as well as immigration and emigration flows. On this basis, population reproduction can only be determined by considering these factors together, which allows more accurate future trends to be determined (KAPITÁNY, 2015).

$$R = \frac{B - D + I - E}{P} = b - d + i - e$$

R = ratio of actual reproduction

B = number of live births

D = number of deaths

I = number of immigrants

E = number of emigrants

P = number of population

b = crude birth rate

d = crude death rate

i = immigration rate

e = emigration rate (POLÓNYI, 2002).

Further refining the previous formula, I have substituted the actual replacement rate for the difference between birth and death rates:

$$P(t) = \frac{P_0 K}{P_0 + (K - P_0)e^{-Rt}}$$

This gave a much more accurate value than the previous formula.

2.5. Semi-structured interview with heads of settlements

To gain a deeper insight into the settlements of the Kisteleki district and explore the reasons for the findings of the secondary research, I conducted semi-structured in-depth interviews with the heads of the settlements, who were willing to provide me with their information. The dates and locations of the interviews are summarized in Table 3.

Table 3: Dates, locations and subjects of the semi-structured in-depth interviews

Data	Settlement	Settlement leads
27.02.2024.	Balástya	Újvári László
01.03.2024.	Pusztaszer	Máté Gábor
05.03.2024.	Csengele	dr. Tóth Tibor Imre
05.03.2024.	Kistelek	Nagy Sándor
12.03.2024.	Baks	Búza Zsolt
10.05.2024.	Ópusztaszer	Makra József

Source: own edition (2025)

I have not discussed the interview responses and results in a separate chapter in this thesis, but have supplemented or supported the findings from the primary and secondary research with the interviews.

2.6. Residential questionnaire

I conducted an online questionnaire survey with residents, as a further primary research method. The questionnaires were created with the software LimeSurvey. The questionnaires were tested on 21.08.2024, after several revisions and finalization of the questions. The testing went smoothly and after a technical error was corrected, the questionnaires were sent out on 25.08.2024. I contacted the mayors of the settlements who forwarded the questionnaire to the leaders of local community groups, and journalists, librarians, and NGO leaders also helped. I shared it again and again in various groups and on community sites over several weeks. I also sent the questionnaires in a snowball method by email/message to all my contacts in the Kisteleki district, asking them to forward them. I also called the people involved in my previous research one by one and emailed them the questionnaires, as well.

I participated in events where people from the Kisteleki district were represented. I visited the representatives of the settlements at the events and after introducing myself, I asked for their help in filling in and distributing the questionnaires. The questionnaires were closed on 02.10.2024. The questionnaires had a total of 755 views, of which 303 were completed. This may be because, unfortunately, few people read the introduction and were confronted with the fact that their settlement does not belong to the Kisteleki district, when they started to fill in the questionnaire or, based on the feedback, that many people started filling in the questionnaire but did not finish it, citing the length of the questionnaire. After reviewing the responses to the questionnaire, I identified 296 evaluable questionnaires, broken down by settlements as indicated in Table 4.

Table 4: Resident population and the number of respondents in the surveyed settlements (persons)

Settlement	Baks	Balástya	Csengele	Kistelek	Ópusztaszer	Pusztaszer
Population (2024)	1 893	3 233	1 723	7 072	1 979	1 299
Completers	36	60	20	83	48	49

Source: own edition based on KSH data (2025)

The number of respondents to the questionnaires is not fully representative, but it is important to note that the majority of the results obtained are in line with and support the findings of the secondary research and other primary research. The responses to the questionnaire also show that the research was typically taken by people who were interested in their local community and their own situation and future.

I presented the results with descriptive statistics and summarised them using SWOT analysis, thus helping to identify the economic and social problems of the Kisteleki district. SWOT analysis is a strategic planning tool used for decision making and situation analysis (PAHL–RICHTER, 2007; FINE, 2009). To ensure that the objectives set and the methods used to analyse them are clear and transparent, I have summarised them using Figure 1.

<p>Position of the Kistelek district among the districts to be developed</p>	<p>The situation in the settlements of Kisteleki district</p>	<p>Results and conclusions</p>
<ul style="list-style-type: none"> • Complex development indicator • Cluster analysis 	<ul style="list-style-type: none"> • Complex development indicator • Trend calculation • Semi-structured in-depth interview • Online population questionnaire 	<ul style="list-style-type: none"> • SWOT analysis

Figure 1: Relationship between the objectives set and the research methods used
Source: own edition (2025)

3. RESULTS AND DISCUSSION

3.1. Analysis of the position of the Kisteleki district among the districts to be developed

I first looked at the districts to be developed, calculating a complex development indicator for 2013 and 2022. Based on the study by KOVÁCS and BODNÁR (2016), I developed 6 territorial capital factors within the complex development indicator.

Among the first capital factors, the private fixed capital within the districts developed very unfavourably for the Kisteleki district in 2013, as the studied district was only one district behind Cigándi (Table 5). In 2022, the Kisteleki district achieved a significant improvement in the ranking of districts to be developed, improving 32 places in the private fixed capital indicator. This is because it achieved improvements in all indicators of the factor group. In terms of percentage change in private fixed capital, the district showed the second-highest improvement after Cigándi district. Among the positive changes, the increase in the number of personal income tax payers is noteworthy, which can be partly explained by the reduction in unemployment, i.e. the number of registered job seekers.

Table 5: Complex development indicator related to private fixed capital indicators and the order of districts to be developed, 2013 and 2022

Order	District	CDI (2013)	Order	District	CDI (2022)
1.	Cigándi	9.87	1.	Kunhegyesi	16.24
2.	Kisteleki	19.68	2.	Csengeri	20.69
3.	Sarkadi	21.46	3.	Ózdi	22.14
4.	Ózdi	21.99	4.	Edelényi	24.94
5.	Csengeri	24.35	5.	Gönci	25.33
6.	Jánoshalmi	26.58	6.	Encsi	27.77
7.	Vásárosnaményi	27.27	7.	Sarkadi	28.57
8.	Fehérgyarmati	28.47	8.	Bácsalmási	28.67
9.	Hevesi	29.55	9.	Cigándi	29.17
10.	Gönci	29.90	34.	Kisteleki	44.83
54.	Vasvári	77.02	54.	Vasvári	78.31

Source: own calculation and edition based on TeIR data (2025)

The next capital factor was the entrepreneurial environment, where the Kisteleki district performed very well in both years, only seven places behind the best-performing districts of Csengeri (2013) and Kiskunmajsai (2022) (Table 6). However, the district did not improve its ranking in the complex business environment development indicator in 2022 compared to 2013. The district has an industrial park in Kistelek, which has only produced partial results in terms of economic promotion, with investment largely remaining at the level of promises. Balástya has also developed an industrial area with the help of an Operational Programme for Spatial and Urban Development Tender, which was completed in 2021. However, they are still waiting for businesses to come in. These facts highlight the need to improve the business environment in the Kisteleki district, which can be supported primarily by a properly designed infrastructure.

Table 6: Complex development indicator related to business environment indicators and the order of districts to be developed, 2013 and 2022

Order	District	CDI (2013)	Order	District	CDI (2022)
1.	Cigándi	5.30	1.	Encsi	11.57
2.	Putnoki	13.78	2.	Putnoki	12.48
3.	Encsi	15.88	3.	Edelényi	13.62
4.	Edelényi	16.35	4.	Szikszoói	15.74
5.	Szikszoói	16.54	5.	Mezőcsáti	16.89
6.	Mezőcsáti	17.90	6.	Ózdi	20.45
7.	Kunhegyesi	18.59	7.	Jászapáti	21.03
8.	Jászapáti	18.90	8.	Cigándi	22.13
9.	Enyingi	21.63	9.	Kunhegyesi	22.78
47.	Kisteleki	45.23	47.	Kisteleki	45.14
54.	Csengeri	58.91	54.	Kiskunmajsai	55.56

Source: own calculation and edition based on TeIR data (2025)

In terms of infrastructure capital, the Kisteleki district has improved its ranking over the period compared to the other districts to be developed (Table 7). Overall, the Kisteleki district has seen a significant increase in the proportion of dwellings connected to the public sewerage network, in the amount of electricity supplied to households, and in the number of pavements in the settlement. The access time by road to Budapest, the seat of the district and the nearest motorway interchange has continued to decrease, thanks to improvements in transport infrastructure.

Table 7: Complex development indicator related to infrastructure capital indicators and the order of districts to be developed, 2013 and 2022

Order	District	CDI (2013)	Order	District	CDI (2022)
1.	Cigándi	38.71	1.	Bácsalmási	37.41
2.	Putnoki	40.80	2.	Sellyei	38.47
3.	Bácsalmási	44.69	3.	Putnoki	39.49
4.	Jánoshalmi	44.79	4.	Szigetvári	39.88
5.	Sellyei	44.95	5.	Baktalórántházai	45.04
6.	Gönci	46.09	6.	Fehérgyarmati	46.98
7.	Edelényi	46.19	7.	Jánoshalmi	48.08
8.	Encsi	46.47	8.	Hegyháti	48.30
9.	Ózdi	47.71	9.	Edelényi	49.39
37.	Kisteleki	59.39	35.	Kisteleki	63.02
54.	Füzesabonyi	60.10	54.	Füzesabonyi	81.48

Source: own calculation and edition based on TeIR data (2025)

In addition to private fixed capital, social capital has improved the most in the Kisteleki district's ranking compared to the other districts to be developed (Table 8). In 2013, it was ranked 39th, and by 2022 it had improved to 50th. This is due, among other things, to the fact that the inward migration balance has turned from negative to positive, the number of non-governmental organizations has increased and the proportion of the permanent population aged 65-x and registered job seekers under 25 has decreased significantly.

Table 8: Complex development indicator related to social capital indicators and the order of districts to be developed, 2013 and 2022

Order	District	CDI (2013)	Order	District	CDI (2022)
1.	Pétefvásárai	38.81	1.	Tokaji	38.97
2.	Záhonyi	40.44	2.	Mezőkovácsházai	41.30
3.	Jánoshalmi	40.93	3.	Vásárosnaményi	44.79
4.	Kunszentmártoni	45.36	4.	Tabi	45.08
5.	Mezőkovácsházai	45.87	5.	Pétefvásárai	45.45
6.	Sarkadi	47.48	6.	Karcagi	45.67
7.	Csurgói	47.61	7.	Sarkadi	46.12
8.	Baktalórántházai	47.94	8.	Csengeri	46.57
9.	Ózdi	47.95	9.	Szigetvári	46.78
39.	Kisteleki	57.46	50.	Kisteleki	62.84
54.	Szigetvári	67.23	54.	Kiskunmajsai	64.10

Source: own calculation and edition based on TeIR data (2025)

Among the districts to be developed, Kisteleki was the 24th poorest district in 2013 in terms of human capital, and only managed to improve five places by 2022 compared to the other districts (Table 9). However, the value of the complex human capital development indicator worsened (24.92) compared to the previous value (27.94). When looking at the percentage change in the CDI for the human capital indicators between 2013 and 2022, the district of Kisteleki has worsened its position by 10.83% over the period under review. In the future, it would be important to improve the stock of skills held by the workforce, which would contribute to a more positive development of human capital.

Table 9: Complex development indicator related to human capital indicators and the order of districts to be developed, 2013 and 2022

Order	District	CDI (2013)	Order	District	CDI (2022)
1.	Cigándi	2.79	1.	Bácsalmási	6.17
2.	Devecseri	7.01	2.	Devecseri	6.95
3.	Enyingi	7.41	3.	Kemecsei	9.39
4.	Sarkadi	12.14	4.	Sellyei	9.69
5.	Nyíradonyi	15.60	5.	Enyingi	10.23
6.	Kunhegyesi	15.73	6.	Nyíradonyi	12.73
7.	Putnoki	15.91	7.	Vasvári	14.72
8.	Mezőcsáti	16.39	8.	Jászapáti	14.97
9.	Sellyei	16.93	9.	Sarkadi	15.64
24.	Kisteleki	27.94	29.	Kisteleki	24.92
54.	Tokaji	100.00	54.	Tokaji	91.20

Source: own calculation and edition based on TeIR and KSH data (2025)

Regarding cultural capital, the Kisteleki district achieved the best result among the districts to be developed in 2013 (Table 10). The decline was mainly caused by a decrease in the number of regular cultural activities.

Table 10: Complex development indicator related to cultural capital indicators and the order of districts to be developed, 2013 and 2022

Order	District	CDI (2013)	Order	District	CDI (2022)
1.	Mezőcsáti	2.18	1.	Encsi	1.98
2.	Encsi	4.40	2.	Ibrányi	4.12
3.	Baktalórántházai	5.56	3.	Nagykállói	5.93
4.	Csengeri	6.60	4.	Csengeri	6.51
5.	Vásárosnaményi	7.13	5.	Ózdi	6.78
6.	Fehérgyarmati	7.97	6.	Mátészalkai	6.91
7.	Szikszói	9.28	7.	Vásárosnaményi	8.47
8.	Putnoki	9.29	8.	Mezőcsáti	9.24
9.	Sarkadi	9.41	9.	Sarkadi	10.03
10.	Ózdi	11.94	52.	Kisteleki	43.94
54.	Kisteleki	53.85	54.	Devecseri	64.78

Source: own calculation and edition based on TeIR data (2025)

I then averaged the values of the six capital factors of the complex development indicator. Based on the percentage changes that occurred, I defined four groups of districts using cluster analysis: declining, stagnating, developing and dynamically developing (Figure 2). Looking at the districts to be developed, the Kisteleki district achieved an overall improvement of 8.02% in the complex development indicator between 2013 and 2022. As a result, it was the sixth best performing district among the districts to be developed at the end of the period under review and fell into the developing category.

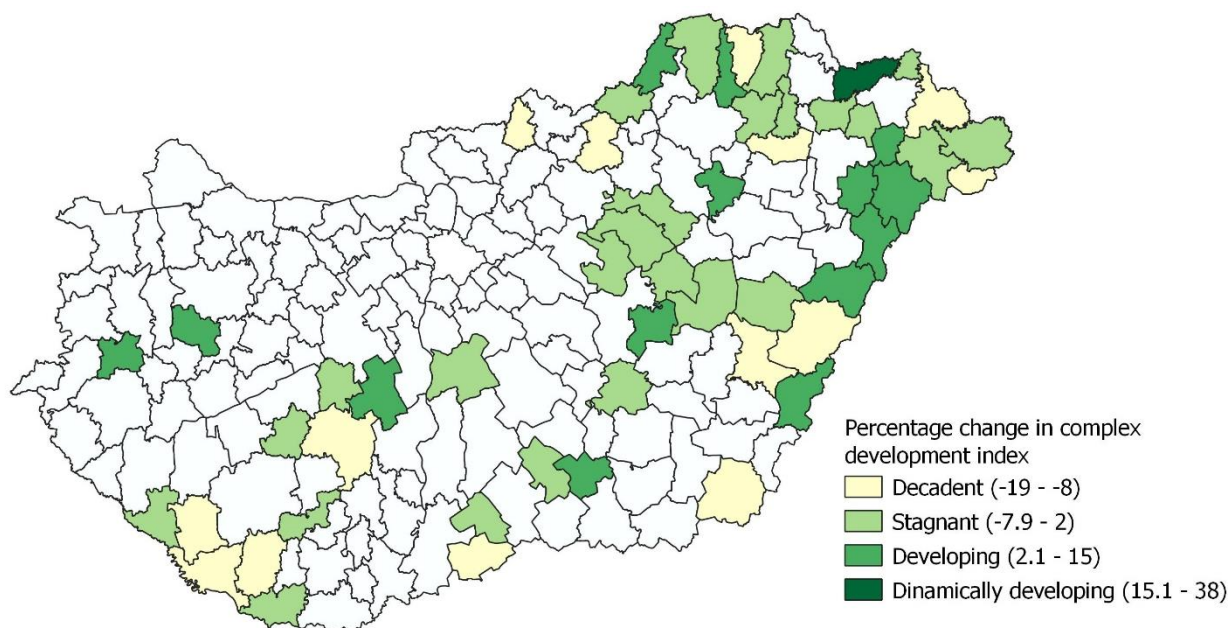


Figure 2: Percentage change in CDI for all indicators between 2013 and 2022 in the districts to be developed

Source: own calculation and edition based on TeIR and KSH data (2025)

In terms of the ranking of districts to be developed, Kisteleki district was the 41st most deprived region in 2013, but by 2022 it had moved up nine places to 50th place. Overall, the district owes

all this primarily to the development of private fixed capital, which is based on material resources and whose accumulation is one of the most important factors in the process of catching up. In addition to private fixed capital, the district of Kisteleki has improved its social capital, which has a significant impact on economic performance and its good functioning.

3.2. Analysis of the settlements of the Kisteleki district using a complex development indicator

After the districts to be developed, I looked at the settlements of the Kisteleki district. I also calculated a complex development indicator for the settlements based on the Government Decree 105/2015 (IV.23.), in which I developed 4 groups of factors according to the decree. After the calculation of the complex development indicator, it can be said that all settlements have improved their situation by 2022, compared to 2013 (Table 11). The only settlement in the district with urban status, Kistelek, took first place in the ranking based on the indicator. Kistelek was followed by Balástya, Pusztaszer, Ópusztaszer, Baks, and Csengele in last place. A more interesting result than the ranking is how much the settlements managed to improve their situation during the period under review. Of the settlements, Ópusztaszer has achieved the greatest improvement in both ranking and indicators, thanks to, among other things, local economic and labour market indicators, as well as outstanding improvements in housing and living conditions.

Table 11: Group average ranking of municipalities in the Kisteleki district, 2013 and 2022, based on the complex development indicators for economic, social and environmental

Order	Settlements	CDI (2013)	Order	Settlements	CDI (2022)
1.	Kistelek	68.3	1.	Kistelek	72.9
2.	Balástya	46.5	2.	Balástya	53.3
3.	Pusztaszer	40.7	3.	Pusztaszer	49.4
4.	Baks	33.0	4.	Ópusztaszer	41.5
5.	Csengele	29.2	5.	Baks	34.7
6.	Ópusztaszer	27.1	6.	Csengele	31.5

Source: own calculation and edition based on TeIR and KSH data (2025)

I also analysed the Kisteleki district and its settlements in detail. As regards the demographic situation, according to the TeIR data, the population of Kisteleki district in 2022 was 17 198, of which almost 41% lived in the only town of the district, Kistelek, while the remaining 59% lived in the surrounding settlements. The population of the Kisteleki district will decrease steadily between 2013 and 2022, at a rate well above the national average. These population figures make it the smallest of the seven districts in Csongrád-Csanád county.

On demography, it is important to talk about the situation of ethnic segregation in the region. In the 2022 census, the proportion of people identifying themselves as belonging to the gypsy (Romani, Bász) ethnic minority in the Kisteleki district was 2.4%, which was well above the

average for Csongrád-Csanád county (0.9%) and slightly above the national average (2.2%) (TEIR, 2023). The proportion of the gypsy population is more prominent in the settlement of Baks in the Kisteleki district, in connection with the segregated settlement of Mária Telep. As a result of the population projection for the settlements of the the Kisteleki district, the population of the district is expected to be 13 730 in 2053 compared to 2022, which means that the population of the district will decrease by 20%. This fact is very negative for the future.

If we modify the calculation and include actual population growth instead of natural increase in the formula used to project the population, we get a different picture, as the population of the Kisteleki district is expected to be 18 494 in 2053, an increase of more than 7.5% over 30 years. This more favourable case is due to the positive migration balance in the formula for the effective replacement rate, which is not necessarily due to the good economic performance of the area. In the case of smaller settlements, immigration may also be in the hope of a cheaper living option, which further increases poverty in the area. In this case, previous research confirms this (see ÁGOSTON–DURÓ, 2012). Overall, the percentage change in the social and demographic situation indicators was negative for only one municipality, Ópusztaszer, which experienced a significant deterioration in its natural increase and decrease indicators over the period under review, while the proportion of the permanent population aged 65-x increased significantly (Figure 3). The most piositive change was recorded for Balástya, which improved its situation by 68.98%.

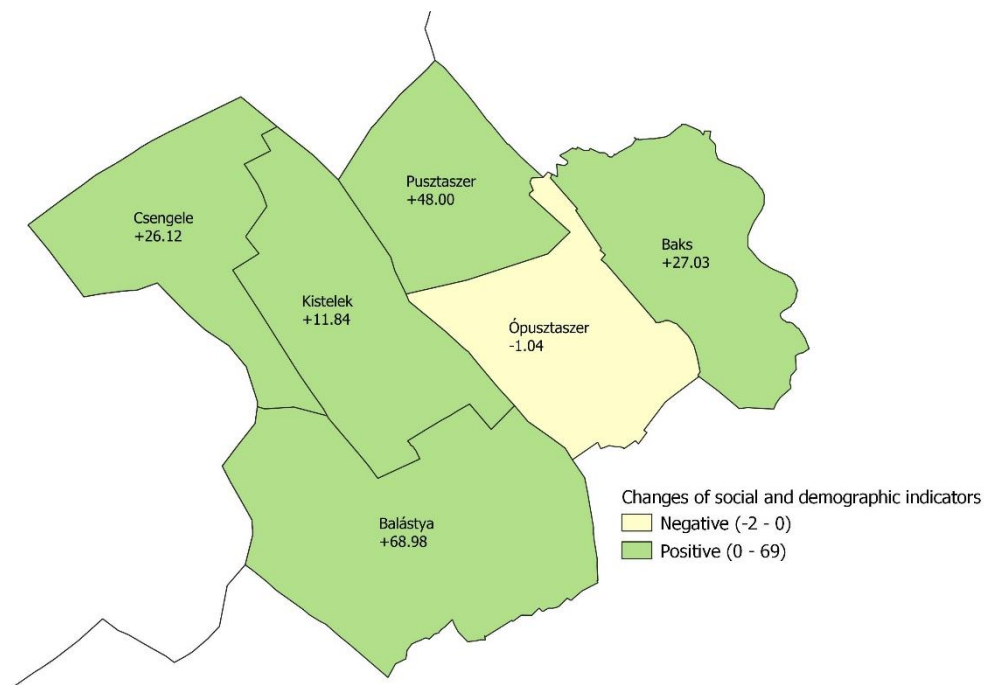


Figure 3: Changes of social and demographic indicators in case of the settlements of Kisteleki district, 2013-2022 (% , 2013=100%)

Source: own calculation and edition based on TeIR and KSH data (2025)

As a result of the group averages calculated based on the CDI for housing and living conditions, Kistelek performed best in both years under review, mainly due to its urban status and the

advantages it enjoys. Ópusztaszer has improved the most, thanks to a decrease in the number of registered crimes and an increase in the share of personal income tax payers (Figure 4). Two settlements have recorded negative developments, Csengele and Pusztaszer.

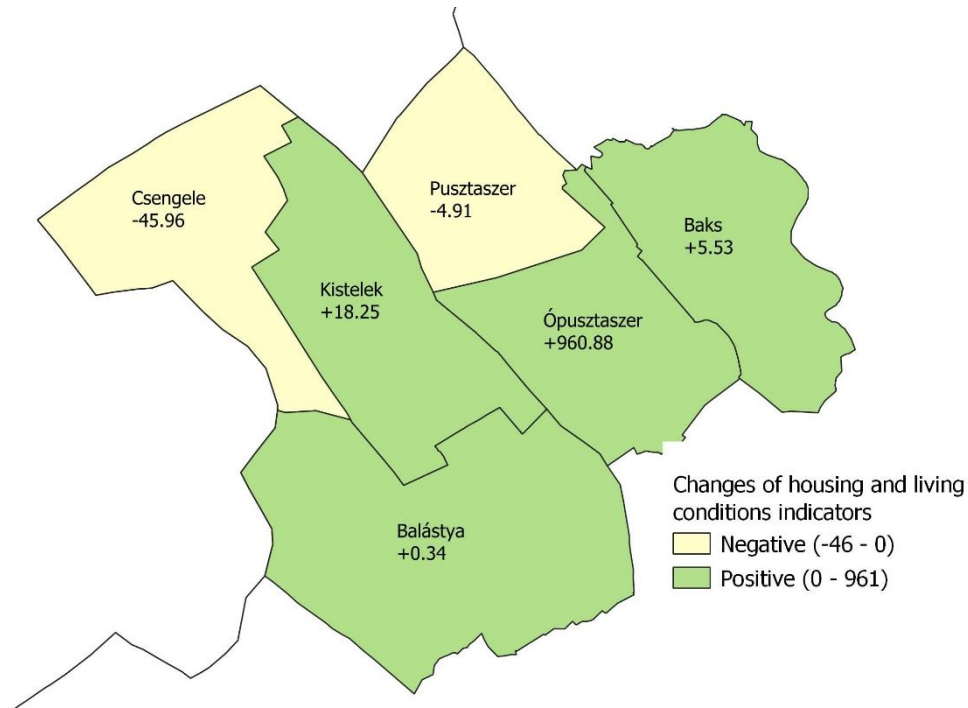


Figure 4: Changes of housing and living conditions indicators in case of the settlements of Kisteleki district, 2013-2022 (% , 2013=100%)

Source: own calculation and edition based on TeIR and KSH data (2025)

Assessing the local economic and labour market situation, it can be said that Kistelek and its surroundings are currently an area lacking in industry. However, the arrival of a major investment in the area, the BYD car factory, has prompted the municipalities to start developing the existing industrial parks (Kistelek and Balástya) and new industrial areas have been designated. Agriculture is a dominant sector in the Kisteleki district, with arable crops, fruit and vegetable production predominating. In terms of tourism, the Kisteleki district has a nationally prominent tourist and cultural-historical centre, the Ópusztaszeri National Historical Park, where tourism is concentrated within the district, despite the rich man-made and natural assets of the area. Overall, the direction of the percentage change in the percentage change of the local economy and labour market indicators in the municipalities of the district was negative for two settlements (Baks, Csengele), while Pusztaszer improved its situation the most (Figure 5).

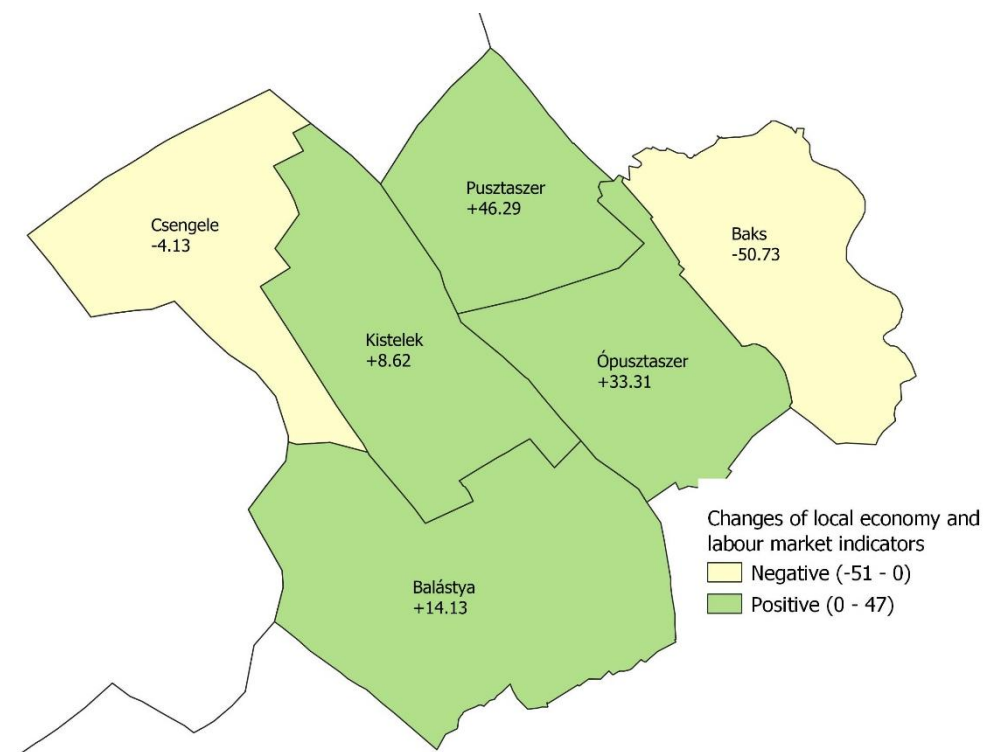


Figure 5: Changes of local economy and labour market indicators in case of the the settlements of Kisteleki district, 2013-2022 (% , 2013=100%)

Source: own calculation and edition based on TeIR and KSH data (2025)

The district has a favourable geographic and transport situation, as the Budapest-Szeged railway line and the M5 motorway pass through here, with junctions in Balástya, Csengelén and Kistelek. The CDI calculated for infrastructure and environmental indicators has improved in all settlements except Balástya and Kistelek over the period (Figure 6).

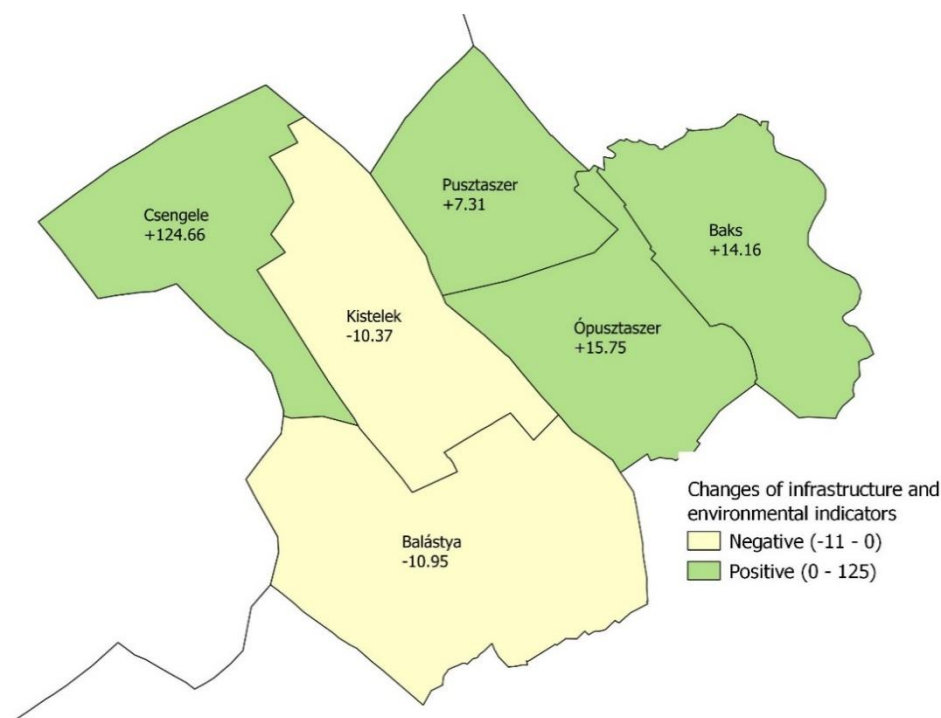


Figure 6: Changes of infrastructure and environmental indicators in case of the the municipalities of Kisteleki district, 2013-2022 (% , 2013=100%)

Source: own calculation and edition based on TeIR data (2025)

3.3. Results of the questionnaire survey

As a primary research, I conducted semi-structured in-depth interviews and a questionnaire with the population to get to know the settlements of the Kisteleki district in more depth. A total of 296 evaluable questionnaires were produced. According to the level of education, it can be said that those with higher education were the most frequent respondents. Regarding occupation, the largest proportion of respondents were employed or in employment, accounting for 47% of those who completed the survey. Respondents tended to be locally employed, suggesting that many were engaged in economic activities that are locally based, such as farming. This fact was confirmed by the response of respondents on the nature of economic activity. In addition to agriculture, most people tend to work in services. Respondents chose their own settlement as the place of economic activity because it is the same as their place of residence or because the activity is local. Less important factors for respondents were the existence of favourable transport and other infrastructure conditions and favourable tax conditions.

Residents of the Kisteleki district were then asked whether they would move away from their own settlement if they could (Figure 7). Only in the case of Baks was the majority of respondents saying yes, while in the other municipalities the proportion of those who would leave the municipality if they could is below 34%. The reasons for moving were not only problems with the settlement. Many would like to leave not only the settlements but also the country in search of a better life. Love of the place of settlement is more prevalent in all settlements.

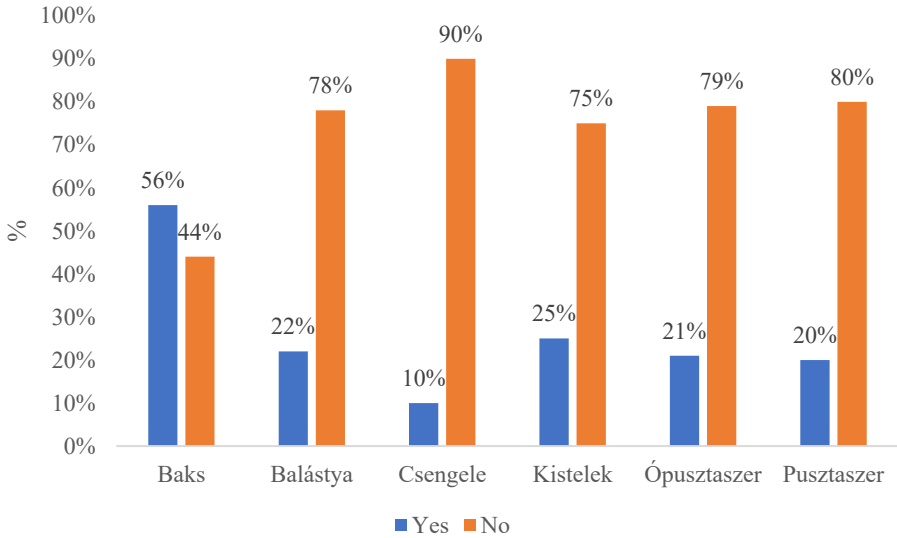


Figure 7: Distribution of respondents' opinions on staying or moving in their own settlement in Kisteleki district (%)

Source: own edition based on the primary survey (2025)

The next set of questions concerned the situation in the settlements. This showed that Baks was rated the worst in terms of the general state of the settlement, public safety, cultural services, quiet and tranquillity, job opportunities, and overall economic development. The most positively rated

settlement was Csengele, where the most positive aspects of the surveyed settlements included the situation of young people, cultural and recreational opportunities, the cohesion of the local community, and overall economic development. In Kistelek, public transport and sporting facilities were highlighted by the respondents, and in Pusztaszere the state of the natural environment, which is also the basis for photographic tourism, was outstanding. In all settlements, residents generally rated the provision of nursery, kindergarten, and primary education as good. Respondents then identified the most urgent problems to be solved for each settlement. In Baks, nearly half of the respondents think that one of the biggest problems is public safety, with crime, drugs, and the presence of stray dogs highlighted.

After public safety, they mentioned the scarcity of jobs and the situation of young people. Young people should be given opportunities for recreation and jobs in the settlement. In Balástya, as a whole, the biggest problem is the condition of the roads, both external and internal. In the opinion of the respondents, it would be important to create jobs and improve the situation of young people. In Chengele, the three most pressing problems were the lack of jobs, the current situation of public transport, and the situation of agriculture. In Kistelek, the improvement, maintenance, and paving of roads is be the most important task, as the creation of jobs, the development of the industrial park, and tourism. In Ópusztaszer, the respondents consider the expansion of jobs, for example through the development of tourism, to be important. The condition of the external and internal roads is not satisfactory, and suggestions were made to improve education and its quality. In Pusztaszer, as in other settlements, the main problems are the few jobs and the bad condition of roads and pavements. Further efforts should be made to stop the exodus from the settlement, for example through community building and recreational facilities.

The fact that the settlements of the Kisteleki district are constantly developing is also confirmed by the results of the questionnaire survey. Most respondents considered the development of the settlements in the Kisteleki district to be slowly improving in the last 10-15 years: Baks, Balástya, Pusztaszer, and Csengele are developing though slowly, Kistelek is stagnating, while Ópusztaszer is stagnating or slowly developing. Overall, most respondents (37%) considered the settlements in the district to be slowly developing, while 29% considered it to be definitely developing (Figure 8). These opinions are very positive for the district.

Respondents tend to consider the situation in their settlement to be similar to that of other settlements in the district. Kistelek was rated slightly better by the survey respondents, which may it is the only settlement in the district with urban status.

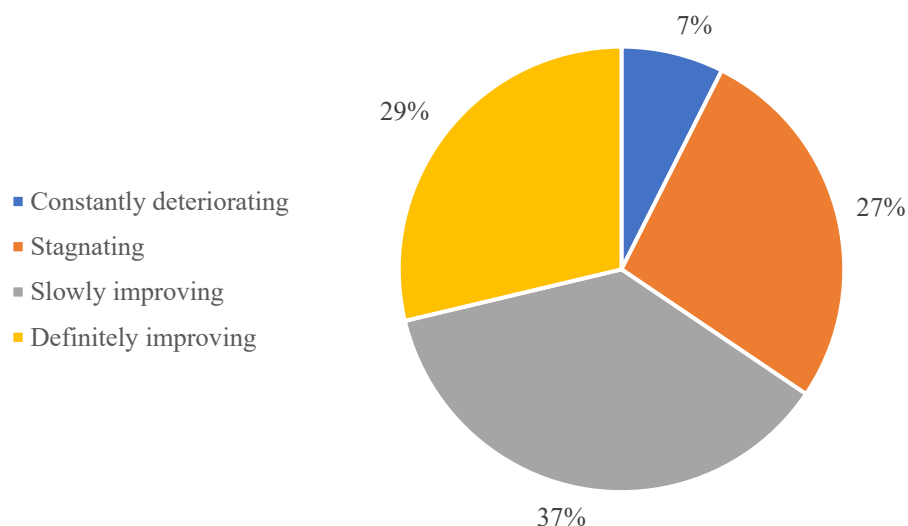


Figure 8: Distribution of respondents' opinions on the development of settlements in Kisteleki district (%)

Source: own edition based on the primary survey (2025)

During the primary research, both local residents and municipal leaders identified possible break-out points for their own municipalities (Table 12).

Table 12: Possible break-out points of the municipalities in the Kisteleki district according to the opinion of the municipal leaders and local residents

Opinions of settlements managers					
Baks	Balástya	Csengele	Kistelek	Ópusztaszer	Pusztaszer
Tourism: ecotourism, rural tourism, religious tourism	Tourism: equestrian tourism Development of an industrial park, creation of additional industrial areas	Creation of industrial areas	Development of an industrial park, creation of additional industrial areas	Development of agriculture Development of tourism	Improving living conditions (maintenance of educational institutions, public buildings)
Opinions of local residents					
Baks	Balástya	Csengele	Kistelek	Ópusztaszer	Pusztaszer
Attracting businesses, creating additional jobs Tourism More events and entertainment options	Attracting businesses, creating additional jobs More cultural programs and entertainment options Tourism Agriculture	Attracting businesses, creating additional jobs Agriculture	Attracting businesses, creating additional jobs Development of healthcare Expansion and strengthening of education More opportunities for shopping Tourism Agriculture	Attracting businesses, creating additional jobs More cultural programs and entertainment options Tourism Agriculture	Attracting businesses, creating additional jobs More cultural programs and entertainment options Tourism Agriculture

Source: own edition based on the primary survey (2025)

In Baks, it is more difficult to create industrial areas because of the large proportion of the landscape protection area, so industrialization is not an objective. The settlement's management sees the development of tourism as the future development direction. Within tourism, they would focus on ecotourism, rural tourism, and religious tourism. "Baks in the embrace of nature" would be the slogan of the recreation centre that is planned to be built here. This would include the creation of a fishing lake and a buffalo reserve. In the context of village tourism, they would like to produce local products, involving the gypsy inhabitants and their culture. In the context of religious tourism, the settlement would be linked to a planned pilgrimage route, with Baks as one of the stops.

In the case of Balástya, we are talking about a settlement where agriculture is dominant, yet the local leadership feels that its development is problematic, as the sector is facing a huge labour shortage and weather factors make production difficult. The mayor believes that there is potential for tourism in the settlement, as in many cases tourism is combined with agriculture. For example, horse-riding tourism is very popular on farms. The settlement is in the favourable position of being close to the M5 motorway, so an economic zone has been created at the exit, the development of which is very important for the future.

The mayor of Csengele clearly sees the future of the settlement in the development of industrial parks and areas and in attracting businesses, as tourism has not taken root in the settlement.

In the case of Ópusztaszer, the future of the settlement will be determined by the development of agriculture and tourism, according to the management. The settlement has nationally important attractions, the more effective use of which could provide an opportunity to attract more businesses and create more jobs.

Pusztaszere is also characterized by agricultural activity and tourism. However, the mayor's view is that it should be a liveable and not a rich settlement/habitat. He sees the improvement of living conditions in the need to create all services that support everyday life, such as a crèche, a pharmacy, and shops. It is also important to ensure peace and security in the settlement and to promote community cohesion.

In addition to the municipal leaders, residents who took part in the research also identified possible break-out points. In all cases, locals see the importance of attracting businesses and new jobs to their settlements. In the case of Baks, respondents' views are in line with those of the settlement's leader, who believes that it is important to boost local tourism, which could, for example, provide more events and entertainment opportunities in the settlement.

Balástya has a similar development vision, in terms of attracting businesses and developing local tourism. In addition, research respondents believe that, in addition to developing local agriculture, more cultural programs and entertainment opportunities should be provided for the village leaders.

In the case of Csengele, like the mayor, the importance of attracting businesses and thus creating new jobs is also shared by the respondents, and the promotion of agriculture is not negligible for the future of the settlement. Kistelek's urban status means that it provides more services for local people. The only secondary school in the district is located here, as well as a health centre. Respondents felt that improving education and health care and providing a wider range of shopping facilities would be important for the future of the town. The development of tourism and agriculture was also identified as a development direction. For the residents of Ópusztaszer, development directions are also in line with the opinions of local leaders. In the case of Pusztaszer, however, the residents who participated in the research had different views than the leader. They think that it would be important to develop more businesses, tourism, and agriculture. Among the proposals for the development of the settlements of the Kisteleki district, tourism, and agriculture were mentioned in almost all settlements, so I examined whether agriculture and tourism could be a breakthrough point according to the opinion of the research participants (Figure 9).

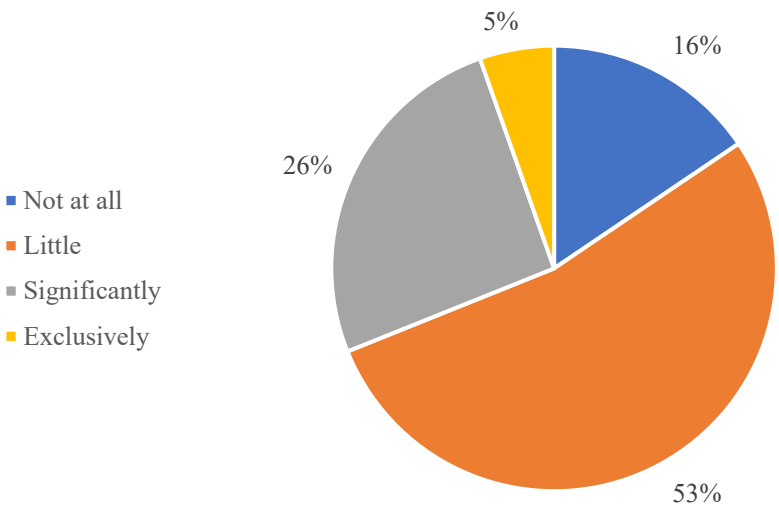


Figure 9: Distribution of respondents' views on tourism as a potential outlet in Kisteleki district (%)

Source: own edition based on the primary survey (2025)

Overall, tourism in the Kisteleki district is typically seen by respondents as a small break-out point. Only 5% of respondents thought that tourism could be the only future development direction, and 26% thought it could be a significant one.

In contrast, the largest percentage of respondents (45%) felt that agriculture could be a significant break-out point (Figure 10). 39% of respondents thought it was a minor potential main development direction, while 11% thought it was not a possible main development direction at all.

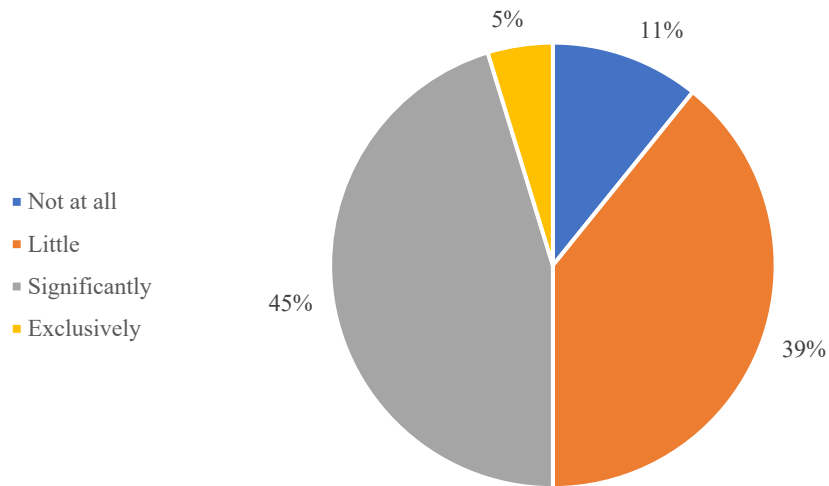


Figure 10: Distribution of respondents' views on agriculture as a potential break-out point in Kisteleki district (%)

Source: own edition based on the primary survey (2025)

Hypothesis testing

H1: I assume that statistical tests can show that the district of Kistelek has managed to improve its complex development indicator for socio-economic-environmental factors by 2022 compared to 2013, and that specific territorial capital factors play a prominent role in this.

After the calculation of the complex development indicator included in the Government Decree 290/2014 (26.XI.), I came to the conclusion that Kisteleki district has managed to improve nine places by 2022 compared to 2013 and the other districts to be developed. If we look at the percentage change in the complex development indicator, the Kisteleki district has improved by 8.02% overall over almost 10 years. The district under study was thus the sixth best performing district among the districts to be developed in 2022. This is mainly due to positive developments in private fixed capital and social capital. Private fixed capital is essentially based on material assets, and its accumulation can be a key factor for catching up and breaking out of underdevelopment, while social capital can have a significant impact on economic performance and its good functioning. I consider this hypothesis to be justified.

H2: I assume that after the calculation of the complex development indicator it can be shown that the settlements of the study area are basically heterogeneous, in addition to the development ranking, so that the possibility of uniform development can be excluded.

The Kisteleki district is a very small territorial unit, yet my research results show that it is a very heterogeneous area. Each settlement has different characteristics. The situation of Balástya, Csengele and Kistelek is determined by their favourable transport geography, as the M5 motorway passes through the administrative area of each settlement and access is provided. Thus, in their case, the future objective is to strengthen industrial activities. Baks is characterised by a high level of gypsy segregation in the settlement of Mária Telep and by the fact that a large part of its administrative territory is a nature reserve. Ópusztaszer is a tourist attraction of national importance, while in Pusztaszer the landscape values and related opportunities, such as photographic tourism, are important. In all cases, the present of the settlements is determined by their past. Each municipality has different characteristics and the future lies in setting different development paths. I consider this hypothesis to be justified.

H3: The settlements of the Kistelek district - despite the district classification to be developed - show a demonstrable development trend, which the population can also feel in their daily lives. At the same time, it can be confirmed that the local inhabitants basically like living in the municipalities of the district.

According to the Government Decree 290/2014 (26.XI.) on the classification of the beneficiary districts, the district of Kisteleki is a beneficiary district and a district to be developed. The settlements of the Kisteleki district are continuously developing, based on the results of the complex development indicators calculated by me. This is confirmed by the answers to the population questionnaires and the results of previous surveys. In the questionnaire survey, most of the respondents considered the development of the settlements in the Kisteleki district to be slowly improving in the last 10-15 years in Baks, Balástya and Pusztaszer, slowly improving or definitely improving in Csengele, stagnating in Kistelek and stagnating or slowly improving in Ópusztaszer. The situation in their own settlements is typically considered by respondents to be similar to that in other settlements in the district. In terms of the results of the questionnaire survey, the settlements in the Kisteleki district show a slow improvement/development, with respondents typically liking or preferring their home and not moving away. I consider this hypothesis to be justified.

H4: I assume that agriculture and tourism can play the most important role in the effective development of the disadvantaged Kisteleki district, after exploring the unique local resources provided by its endogenous endowments.

Local residents and community leaders also made suggestions on possible development directions and break-out points. For each settlement, respondents to the survey identified the need to attract more businesses and create jobs. With the exception of Chengele, all respondents identified the development of tourism as important and, with the exception of Baks, agriculture as a break-out point. Among the suggestions for the development of the municipalities in the Kisteleki district, tourism and agriculture were mentioned in almost all the settlements. Thus, I further sought to find out whether agriculture and tourism could be the local people's starting point. In the case of Ópusztaszer, tourism was considered by respondents to be the most obvious development direction, while tourism was considered to be a possible starting point to a lesser extent in the case of the other settlements. The other questions concerned agriculture. For all the settlements surveyed, most respondents consider agriculture to be a significant development direction as a break-out point. I therefore consider the hypothesis to be partially confirmed, mainly from the point of view of the role of agriculture.

4. CONCLUSIONS AND PROPOSALS

During my thesis I focused on the disadvantaged district of Kisteleki, which is located in the South-Alföld region, in the Csongrád-Csanád county. My choice of topic is important and topical because there are significant territorial disparities in the world, in Europe and in our country, which can be a cause for concern, as they give rise to debates in areas such as politics, social issues, redistribution of wealth, social inclusion and acceptance. The Kisteleki district under study is essentially rural and has a very low population density, which in itself has a very significant impact on the economic and social conditions in the area. Several of the factors of territorial backwardness discussed in the literature review are specific to the Kisteleki district. For example, the outward migration of young people, the ageing of the population, the region's low income-generating capacity, etc.

The Kisteleki district has improved its situation of deprivation by 2022 compared to 2013. Until 2013, it was considered the 33rd poorest region in Hungary, then, according to the current Government Decree 290/2014 (26.XI.), it is only the 41st poorest region in Hungary. Based on the 2014 values of the District Development Index (DDI) developed by the Hungarian Chamber of Commerce and Industry, Institute of Economic and Business Research, Kisteleki district was the 39th least developed district, and in 2019, the development of Hungarian districts was again examined based on the 2017 data, according to which the district was the 46th poorest district in Hungary, improving seven places. My own studies have produced similar results. Based on the indicators included in the Government Decree No. 290/2014 (26.XI.), I developed six capital factors and calculated a complex development indicator for the districts to be developed for two periods (2013, 2022). On the basis of the calculated indicator, in accordance with the Government Decree 290/2014 (26.XI.), the district of Kisteleki was the 41st poorest region in 2013, but by 2022 it had improved nine places to rank 50th. In almost 10 years, the Kisteleki district has managed to improve its situation significantly, based on the indicators and methodology formulated in the government decrees for small regions and districts, the District Development Index (DDI) developed by the Hungarian Chamber of Commerce and Industry, Institute of Economic and Business Research, and its own research.

I also calculated a complex development indicator for the settlements of the Kisteleki district, which I considered to be one of the most suitable for exploring such a low spatial level, based on the work and opinions of domestic researchers (see e.g. PAPP et al. 2017, SZÚCS-KÁPOSZTA 2018).

The results show that all municipalities have improved by 2022 compared to 2013. Of all the municipalities, Ópusztaszer achieved the biggest improvement, both in terms of ranking and

indicators. Ópusztaszer owes its success to, among other things, outstanding improvements in local economic and labour market indicators, as well as in housing and living conditions. During the period under review, the number of registered jobseekers in Ópusztaszer has decreased significantly, as well as the number of registered crimes per thousand inhabitants. The registered capital of enterprises per inhabitant in the municipality has also increased significantly.

Based on the results of the questionnaire survey, Bakson was the worst rated in terms of the overall situation of the settlement. The most positively rated settlement was Csengele, which had the most favourable of all the settlements surveyed, including the situation of young people, cultural and leisure facilities, the cohesion of the local community and the overall economic development of the settlement. Not only the results of the secondary research, but also the questionnaire survey confirm that the settlements in the Kisteleki district are constantly developing, which may be a major factor in the fact that local people typically like or prefer their home and would not move away.

The results show that the development of all settlements has improved by 2022 compared to 2013. Of all the settlements, Ópusztaszer achieved the biggest improvement, both in terms of ranking and indicators. Ópusztaszer owes its success to, among other things, outstanding improvements in local economic and labour market indicators, as well as in housing and living conditions. During the period under review, the number of registered job seekers in Ópusztaszer has decreased significantly, as well as the number of registered crimes per thousand inhabitants. The registered capital of enterprises per inhabitant in the settlement has also increased substantially.

Based on the results of the questionnaire survey, Baks was the worst rated in terms of the overall situation of the settlement. The most positively rated settlement was Csengele, which had the most favourable of all the settlements surveyed, including the situation of young people, cultural and leisure facilities, the cohesion of the local community and the overall economic development of the settlement. Not only the results of the secondary research but also the questionnaire survey confirm that the settlements in the Kisteleki district are constantly developing, which may be a major factor in the fact that local people typically like or prefer their home and would not move away.

The results of my research show that the settlements of the Kisteleki district are extremely heterogeneous. Thus, within the district, different development directions are needed per settlement for the future. In the case of Baks, due to the very high proportion of nature conservation area, industrialization is basically out of the question but the development of eco- and village tourism could be an important break-out point, according to the local people and the mayor. Balástya has an extremely favourable location, thanks to its proximity to the motorway and its access road, and the county seat of Szeged. Hence, industrial development could be the future for

the settlement. Csengele is in a similar position to Balástya, with the motorway and the on-ramp having made the transport infrastructure very favourable, so industrial development would be supported here too. Kistelek, the only urban settlement in the district, has more potential than the surrounding villages and settlements. In the case of Kistelek, it would also be important to develop the industrial park and strengthen the existing education and health centre. Ópusztaszer is the only settlement in the district, which has a significant tourist attraction, so the main goal for the future would be to strengthen tourism and develop new forms of tourism. Pusztaszer is known for the world-famous nature photographer Bence Máté. However, tourism can only be developed within certain limits, since the basis of tourism is an undisturbed natural environment. The establishment and maintenance of livability is an important goal of the settlement. This means that the leader of the settlement does not see the future in the development of industry but in the strengthening of basic services such as nurseries and kindergardens.

Both local leaders and residents have based their opinions on local resources and have used them as a basis for identifying development directions and break-out points. I also believe that in the long term, the endogenous development direction, which is sustainable and based on solid foundations, on the basis of which the transformation and development of agriculture in the region, the development and strengthening of rural tourism, and the development of forms of tourism that are appropriate to the settlements would be the fundamental goal for the future. The rich historical and cultural elements of the Kisteleki district and its agricultural traditions make it possible to develop and strengthen local craft products and related events. The development of local micro, small, and medium-sized enterprises is essential for job creation and, thus, stimulating the local economy, and the designation of industrial sites and the strengthening of existing industrial parks would be important in this context. Closely linked to local economic development is local social development, i.e. the strengthening of communities, which can help to solve social problems such as the situation of the gypsy population in the Mária Telep in Baks.

After examining the settlements, I agree with OLÁH (2003) and SZŰCS and KÁPOSZTA (2018) that it is necessary to carry out annual studies of settlement development based on objective calculations, and to compare the results and monitor changes. The resulting data and information are essential for policymakers and municipal leaders. The method I have chosen, the complex development indicator, is perfectly suited to this analysis.

The main conclusions of the study are summarized in a SWOT analysis (Table 13). I have compiled the strengths, weaknesses, opportunities, and threats of the district, which the district has no control over coordinating, but can only react and adapt to.

Table 13: Economic and Social SWOT Analysis of Kisteleki District

Strengths	Weaknesses
<ul style="list-style-type: none"> • advantageous location, good transport geography (proximity to the M5 motorway, Szeged-Budapest railway line, main road 5) • favourable environmental conditions (proximity to the Tisza) • favourable agro-ecological conditions • existence of ecosystem services • rich man-made values • rich thermal water resources 	<ul style="list-style-type: none"> • few job opportunities • underutilization/lack of industrial park, enterprise zone • lack of local tourist facilities • lack of utilities infrastructure (farmland) • lack of transport infrastructure (condition of roads, pavements) • out-migration of young people • crime (high in Baks) • labour shortage in agriculture
Opportunities	Threats
<ul style="list-style-type: none"> • extensive use of thermal water • developing new forms of tourism • the transformation of agriculture in the region (e.g. conversion to organic farming) • production of local products for the local market • developing cooperation (agriculture, tourism) • strengthening the industrial park and business zone in Kistelek, Balástya and Chengele • social integration (gypsy and non- gypsy communities) • more active involvement of local people in public affairs 	<ul style="list-style-type: none"> • climate change, extreme weather, inland water and drought • social immigration • accelerating peripheralization of farmland the presence of ethnic segregation in the area

Source: own edition based on the primary survey (2025)

All in all, the settlements of the district are basically in a good geographic position, and the environmental conditions in the area are favourable, which create a good basis for agriculture and tourism. The area is also rich in man-made assets and thermal waters. The locals like to live here. However, there are few job opportunities, existing industrial land is lacking or underused, the necessary background infrastructure for the development of tourism is lacking, and the utility infrastructure is poor due to the farm-like nature of the settlements. Young people tend to emigrate and crime rates are high in some settlements. In the future, it would be important to expand the use of thermal water in the area, strengthen tourism and agriculture, and produce and sell local products. The development of existing industrial sites would be essential to maintain the population and create jobs, while community development and more active involvement of local people in public affairs would be essential to avoid social conflicts. The region is severely affected by extreme weather conditions resulting from climate change, which makes agricultural

production difficult. The district's farmland is threatened by accelerating peripheralization and the ethnic segregation of the district is a major contributory factor to its disadvantage.

Both the municipal leaders and the research participants were basically based on local resources when defining development directions. My own opinion is that in the long term, the endogenous development direction is the one that is sustainable and based on a secure foundation. Thus, based on the research findings, I have formulated proposals for the development and restructuring of agriculture, the development of sustainable rural tourism, the development of the cultural economy and related local micro, small and medium-sized enterprises, as well as community development in the area.

Agricultural development and restructuring

Agriculture is one of the dominant sectors in the Kisteleki district and is increasingly marginalized in the region. These two facts are confirmed by the results of in-depth interviews with the heads of the settlements and the results of the questionnaires. Agriculture benefits from the region's long agricultural history and the existence of favourable agro-ecological conditions.

To strengthen agriculture in the region, it would be important to develop and restructure it. Respond to the risks of climate change and extreme weather conditions, for example through more diversified, polycultural local food production. In the future, I believe that organic production and the production of organic food is a good objective, in line with changing consumption needs. Local leaders in the district could help farmers to broaden their horizons by organising lectures, conferences and forums. Further assistance could be provided by contacting and involving specialists, such as grant writers and consultants.

I think it is important for farmers and producers to work together. Local farmers could form farmers' groups to deal more effectively with drought and inland water problems. On the subject of agriculture, I would suggest that further use of thermal water in the area should be given priority, as many people work in vegetable production.

As in our country in general, the issue of generational change in agriculture is important in the region. Local leaders could also play an important role in promoting generational change by informing young people, for example about application opportunities, either online or through local farmers' forums. Local leaders could help farmers to find and secure the right professionals who can help young farmers throughout their work.

Sustainable rural tourism development

The Kisteleki district is rich in both natural and man-made assets, which creates opportunities for the development and strengthening of many forms of tourism. The rich natural assets favour the

development of ecotourism and active tourism, while the historical monuments and folklore allow the strengthening of cultural tourism. The Kisteleki district has such assets as thermal water, the proper exploitation of which would allow the development of health tourism in the area. To develop tourism, it is important to create the necessary background infrastructure, i.e. a sufficient number and quality of accommodation and catering facilities. Tourism in the district is mainly concentrated in Ópusztaszer. Taking advantage of Ópusztaszer's location, other settlements could also showcase their man-made and natural assets. For this, however, cooperation between local tourism operators would be important. Cooperation would also make it possible to develop joint program packages and joint marketing activities. Tourism would not only create jobs in the area but would also contribute to the preservation of local values.

Cultural Economy

Tourism may also be closely linked to the fact that the Kisteleki district is rich in historical and cultural elements, and its agricultural traditions allow the creation and strengthening of local handicraft products and related events. Agriculture is still predominant in the area, and it would be important to take advantage of this, going beyond tourism, to favour the local processing of food and its sale locally, which would contribute to the revitalization of the local economy by creating jobs and keeping income local. To this end, developing and strengthening the local market is an important task for municipal leaders. Overall, strengthening and developing local cultural resources would contribute to local economic and social prosperity. As a concept, the cultural economy implies the basic assumption that culture is one of the foundations of local socio-economic development, as rural areas are able to transform and reshape their economies through their cultural resources (KIS, 2014).

Local development of micro, small and medium-sized enterprises

The development of local micro, small and medium-sized enterprises is essential to create jobs and thus boost the local economy. The investment in Szeged, the capital of the county, and the favourable transport infrastructure location of the settlements create opportunities for the development and strengthening of industrial parks and areas in the district. Local authorities have a major role to play in attracting and encouraging businesses and in providing the necessary and appropriate infrastructure. It is not only important to attract businesses, but also to select them properly. It is important to promote the establishment of companies whose activities fit well into the regional economy and do not pose a threat to existing businesses.

Community development

Developing local society and strengthening local communities is an important part of local economic development. In turn, strong communities contribute to the region's ability to retain its population. Community development helps to combat poverty and social exclusion. The Mária settlement in Baks, Kisteleki district, is a gypsy ethnic minority of around 500 people, whose social inclusion is essential for the future of the settlement and the region. The settlement has an important role to play in desegregation in the settlement, through education, the involvement of experts and community cohesion. Local NGOs and spontaneous community organizations can further promote community development, which is essential not only in the case of Baks. Events and programs are one of the tools for community development. There is a need for further community events and programs in the area, as confirmed by the results of the questionnaire survey. Agreeing with the ideas of BÉRES (2013), these programs and events do not have to be limited to one settlement, as cooperation between settlements and their inhabitants can tackle social challenges that they were previously unable to do alone.

All in all, the complex development indicator I have chosen is suitable for examining different territorial levels, so it can even be used to explore the situation of smaller territorial units, such as settlements, in more depth. The use of the indicator helps to provide decision-makers with a more accurate picture of the area and its characteristics, so that development directions can be set more effectively. Besides evaluating the results of the secondary research, I consider it important to involve and consult the local population in the definition of future objectives, as they are the ones who, by expressing their needs and problems, are able to change the situation of a region or municipality through cooperation. My thesis and the results and proposals it contains provide a good basis for promoting the development of the region.

5. NEW SCIENTIFIC RESULTS

- **Result (R1):** I revised and updated the complex development indicator (CDI) included in the Government Decree 290/2014 (26.XI.) (on the classification of beneficiary districts) used to measure the development of districts. I used it to demonstrate that the Kisteleki district to be developed was able to improve its disadvantaged situation in the period under review, between 2013 and 2022. On the basis of the CDI, I ranked the districts, grouped them and identified which districts have improved, which are stagnating and which are deteriorating.
- **Result (R2):** My secondary and primary research has shown that in the period under study, the settlements of Kistelek district - despite the district classification to be developed - show a demonstrable development trend, which is also felt by the population in their daily lives. At the same time, I have also confirmed that local residents basically like living in the municipalities of the district.
- **Result (R3):** Through secondary analysis, I have identified the main territorial factors behind the improvement in the situation of the Kisteleki district. I have shown that the region under study has improved its private fixed capital, which is based on material capital and its accumulation. Private fixed capital is one of the most important factors for catching up and for breaking out of underdevelopment. In addition to private capital, the district of Kistelek has also improved social capital, which has a significant impact on economic performance and its good functioning in the long term.
- **Result (R4):** I have revised and updated the indicator used to measure the development of settlements for 2022, which is included in Government Decree 105/2015 (IV. 23.) (on the classification of beneficiary settlements and the criteria for classification). I have used it to analyse in detail the economic, social and infrastructural situation of the Kisteleki district, which provides a good basis for a more precise delimitation of development areas and a more efficient use of development resources.
- **Result (R5):** Using the complex development indicator, I have demonstrated that all settlements in the study area have improved their overall situation by 2022 compared to 2013, and complementing the secondary research, I have also demonstrated with primary research results that the settlements of Kisteleki district are fundamentally heterogeneous, so the possibility of uniform development can be excluded.
- **Result (R6):** With regard to the endogenous resources of the Kisteleki district, I have demonstrated, mainly on the basis of my primary research on the future directions of local economic development, that agriculture currently plays a more important role than tourism. My research has not identified the current role of tourism, but its existing potential.

6. PUBLICATIONS OF THE AUTHOR RELATED TO THE SUBJECT OF THE THESIS

Journal articles

Scientific articles published in foreign languages

1. KOVÁCS, H. – KOMAREK, L. (2020): Tourism as a possible means of development of the disadvantaged settlements, on the example of Ópusztaszer village. *Review on Agriculture and Rural Development*, 9 (1-2), pp. 3–8.
2. KOVÁCS, H. – KOMAREK, L. (2021): The impact of tourism on disadvantaged rural areas on the example of the National Historical Memorial Park of Ópusztaszer in Hungary. *Quaestus, Multidisciplinary Research Journal*, 18 (1), pp. 136–146.
3. KOVÁCS, H. (2023): Complex Analysis of the Territorial Development of Csongrád-Csanád County. *Visegrad Journal on Bioeconomy and Sustainable Development*, 12 (2), pp. 38–44.
4. KOVÁCS, H. – RITTER, K. – KOMAREK L. (2024): Trends in tourism supply and demand in the micro-regions of the Southern Great Plain region. *Studia Mundi – Economica*, 11 (3) pp. 36–49.
5. KOVÁCS, H. –MAKRA, L. – DURAY, B. – KOMAREK L. (2024): Complex development analysis of the disadvantaged settlements of the Kistelek district in Southern Hungary. *Studia Mundi – Economica*, 11 (4) (Under publication)

Scientific articles published in Hungarian

6. KIS, K. – KOVÁCS, H. – SZATMÁRI, G. – TÓTH, M. (2016): A szociális szervezetek szerepe a vidékfejlesztésben – esettanulmány: A Bergendóc Szociális Szövetkezet működésének és eredményeinek értékelése. *Jelenkori társadalmi és gazdasági folyamatok*, 11(1–2), pp. 9–34.
7. KOVÁCS, H. – KIS, K. (2017): A TAR-TÓ 2000 Szövetkezet működésének és funkcióinak értékelése a tagok véleményének tükrében. *Jelenkori társadalmi és gazdasági folyamatok*, 12 (1–2), pp. 103–117.
8. KOVÁCS, H. (2020): Az Ópusztaszeri Nemzeti Történeti Emlékpark hatása a helyi gazdaság fejlődésére. *Iparjogvédelmi és szerzői jogi szemle*, 15 (5), pp. 7–34.
9. KOVÁCS, H. – MAKRA, L. – KOMAREK, L. (2021): A hátrányos helyzetű Kisteleki járás társadalmi helyzetértékelése. *Comitatus: Önkormányzati szemle*, 31 (238), pp. 54–67.
10. KOVÁCS, H. – MAKRA, L. – KOMAREK, L. (2021): A hazai családtámogatási intézkedések hatása a demográfiai folyamatok alakulására. *A falu*, 36 (1–2), pp. 11–30.

11. KOVÁCS, H. (2021): A főbb szántóföldi növények strukturális változásának alakulása és jövőbeni kilátásai a Dél-Alföld mezőgazdaságában. *Jelenkori társadalmi és gazdasági folyamatok*, 16 (1–2), pp. 149–160.
12. KOVÁCS, H. (2022): A klaszterek működésének aktuális kérdései a dél-alföldi régióban. *Jelenkori társadalmi és gazdasági folyamatok*, 17 (1–2), pp. 59–75.
13. KOVÁCS, H. – KERÉKGYÁRTÓ, K. – HUPUCZI, J. (2022): A mezőtúri ökoszisztéma szolgáltatások turisztikai felhasználásának lehetőségei. *A falu*, 37 (2), pp. 91–104.
14. SZAMOSKÖZINÉ, K.G. – KOROM, A. – FEKETE, R. – KOMAREK, L. – LÁBAS, K.S. – KOVÁCS, H. (2024): A Kisteleki járás társadalmi-gazdasági jellemzői különös tekintettel a külterületi (tanyai) gazdaságokra. *A falu*, 39 (3), pp. 47–62.
15. KOVÁCS, H. – GÉMES-MATUSEK, K. – ROTICS, B. E. – SÜLI, Á. (2024): Az alpaka tartás ökonómiai perspektívái Magyarországon. *A falu*, 39 (2) pp. 5–17.

Book chapters

Book chapters published in Hungarian

16. KOVÁCS, H. – KÖTELES, D. (2023): Izsák. In: RIGÓ, R. – DEMETER, P. (szerk.): *Tanyakollégium III. Lakitelek, Magyarország: Antológia Kiadó* pp. 116–119.
17. KOVÁCS, H. (2023): Ökoszisztéma szolgáltatások, mint az Izsáki tanyavilág kitörési pontjai. In: RIGÓ, R. – DEMETER, P. (szerk.): *Tanyakollégium III. Lakitelek, Magyarország: Antológia Kiadó* pp. 270–273.
18. KOVÁCS, H. – KOMAREK, L. – KOVÁCS, F. – RITTER, K. (2024): Magyarország fejlesztendő járásainak komplex vizsgálata. In: HAMPEL, GY. – KIS, K. – MIKÓ, E. – MONOSTORI, T. (szerk.): *Mezőgazdasági és vidékfejlesztési kutatások a jövő szolgálatában* 5. pp. 121–139.