

Spatio-temporal dynamics of school choice: An analysis of basic school enrolment data

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Abstract

School choice has long been a subject of academic interest across various scientific disciplines. However, most research focuses on parental preferences, factors influencing school choice, and the consequences of these choices, such as various forms of segregation. The developmental perspective of school choice in time and space, however, is often neglected. This paper therefore focuses on the spatio-temporal dynamics of basic school (ISCED 1 and 2) enrolment data, which represent a real manifestation of parental choice. Data from the enrolment records of all basic schools in Czechia ($n \approx 3,600$) for the period 2015–2024 were used. The analysis was conducted nomothetically, through descriptive statistics of enrolment data at various levels of measurement and their subsequent graphical and cartographic visualisation. The data obtained show that school choice dynamics in Czechia has been increasing over the last decade. The increase was demonstrated at both levels – national and regional – and in all monitored structural indicators of schools (population size of the school municipality, school capacity, and school operator). School choice should therefore be perceived as a dynamic process in terms of time and space, and monitoring enrolment behaviour is useful not only for educational planning.

Key words:

school choice, enrolment, admission, basic school, primary school, elementary school

1 INTRODUCTION

As society, the economy, and technology are constantly developing, education should not be regarded as a static system. On the contrary, it can be understood as a dynamic system that responds and adapts to new demands, primarily those of the socio-economic environment. In the basic education system (ISCED 1 and 2), the school network is changing, the curricula are being revised, new job positions are being introduced, and the preferences of individual actors are changing. One of these changing areas is school choice. On the one hand, school choice allows parents to choose a school that meets the preferences and needs of each child (Gibbons et al., 2008). On the other hand, considerable freedom in school choice also involves certain risks, such as the production or reproduction of social inequalities in society (Ball et al., 1996; Noreisch, 2007; Yoon, 2019). Consequently, school choice can manifest itself in the system, for example, in the form of differences in school performance (Östh et al., 2012; Bajerski, 2015), capacity increases, changes in school focus, etc. Changes in school choice thus have a multiplier effect on other elements of the education system. It is therefore important to understand not only the socioeconomic (Bosetti, 2004) or geographical factors (Bell, 2009; Burgess et al., 2011) that influence school choice, but also to monitor the development of the process. However, most studies dealing with

school choice do not focus on detailed developmental aspects. Knowledge and understanding of these aspects enable us to respond to problems or other challenges in a timely and effective manner.

However, this article does not aim to provide a comprehensive overview of all possible aspects that can be observed from the perspective of the school choice dynamics. The focus is on a partial aspect related to a data source that has not been widely used so far – enrolment data. More specifically, attention will be paid to enrolment data from basic schools, which represent a real manifestation of parents' choices regarding preferred schools. Analysis of these data can help us answer questions about how the school choice dynamics have developed over the last decade and whether spatial differentiation of these dynamics is evident at the regional level. The aim of the article is to identify the spatio-temporal dynamics of basic school choice in Czechia in the period 2015–2024.

2 THEORETICAL FRAMEWORK

School choice is a process in which parents decide which school to choose for their child. In a broader sense, choice of school can also include other actors – schools and their operators, whose actions influence parents' decisions. In this article, we understand school choice as an act by parents expressing their

preference for a given school. The result of this action is the submission of an application to the preferred schools. We therefore perceive the variability of the number of applications submitted to individual schools as one of the indicators of the school choice dynamics. However, these dynamics are influenced by various factors that continuously (demographic situation or school network) or temporarily (COVID-19 or Ukrainian migrants) affect school choice development. We believe that school choice dynamics can generally be explained by the following premises:

(1) The demographic situation and population distribution are one of the key factors influencing school choice dynamics (Walaszek & Bakowska, 2016). Two demographic factors influence these dynamics: (a) the size of the relevant birth cohort, given by earlier birth rates, and (b) the net migration balance of families with children. The variability in the size of birth cohorts over time thus affects the intensity of both the demand for and supply of schools (Hulík & Tesárková, 2009). At the same time, the impact of these demographic factors is conditioned by the uneven spatial distribution of the population, which may determine regional differences in school choice dynamics (Boterman, 2021).

(2) Socio-spatial differentiation is understood as the uneven distribution of various population groups within a territory (Macešková et al., 2009). Generally, topics related to social exclusion and marginalization are most frequently examined within the framework of socio-spatial differentiation (Novák & Netrdová, 2011). However, Hampl (2010) mentions that the spatial distribution of essentially all basic types of social phenomena is uneven. In the context of many studies which confirm that the influence of higher socio-economic status advantages parents in their choice of school (Burgess et al., 2011; Straková & Simonová, 2015; Boterman, 2021) and affects the frequency, demands, and preferences (Butler et al., 2013; Bajerski, 2015; Geppert et al., 2015), we thus proceed from the assumption that the uneven spatial distribution of these social groups jointly conditions the varying intensity and diversity of school choice (e.g., school operators, pedagogical methods or program specialisations).

(3) The marketisation of education can be understood as the process of introducing market mechanisms into the public education system (Kučerová et al., 2015). The result of the marketisation process is the emergence of what is known as quasi-market environment. In this environment, certain market mechanisms are available to entities, but the state still retains its main regulatory and financial functions (Maroy & van Zanten, 2009). Typical mechanisms include the possibility of choosing a school, school specialisation, school marketing, and the existence of non-public operator. The quasi-market environment thus brings individual entities into interaction with each other, where supply and demand influence each other. However, some studies take a more critical view of the positive consequences. According to the authors, the existence of a quasi-market environment leads to increased inequality between schools (Adnett & Davies, 1999; Alegre & Ferrer, 2010; Zancajo & Bonal, 2020), competition between schools for pupils (Maroy & van Zanten, 2009; Jennings, 2010; Kučerová et al., 2015; Dvořák & Straková, 2016) and a greater emphasis on marketing than on the quality of education (Nir, 2003). The existence of a quasi-market environment thus determines the different nature of the schools' offerings and the associated differentiation in parental demand.

(4) The development of the education system is implemented by the state through educational policy. The introduction of new goals, strategies, measures, and decisions aimed at improving the education system can be an important driver of change, both on the supply and demand sides. In the context of school choice, changes primarily take place at the levels of: (a) the method of territorial organization of education (Ramos Lobato & Groos, 2015; Correa et al., 2022), (b) establishing a new school type (Bertoni et al., 2020) (c) curriculum reform, or (d) introduction of inclusion (Grasu & Alexandrescu, 2025). Despite the nationwide nature of the impact of educational policy on the education system, differentiated implementation may still occur. This may be caused by, for example, varying school quality, equipment, teacher qualifications and competencies, or school culture.

(5) We understand the school network as a system of schools and their structural characteristics (operator, type, capacity, etc.), distributed within a given territory. The character of the school network is closely related to the settlement structure of the given territory, which is generally unevenly distributed (Kučerová & Kučera, 2012). Settlements with a higher population, for example, thus dispose of a greater number of schools and a broader structure of operators, and therefore a wider possibility of school choice. The developmental dynamics of the school network are directly influenced by the premises mentioned above. The transformation of the school network therefore occurs on three levels (Meyer & Kučerová, 2023): (a) number of schools, (b) structure of schools, or (c) capacity of schools.

The aforementioned premises influence school choice over time and space in various ways. At the same time, it is necessary to understand these premises in mutual interaction. The developmental dynamics of these interactions may then serve as an explanatory mechanism for school choice dynamics over time and its spatial differentiation.

3 DATA AND METHODS

The research focuses on the spatio-temporal dynamics of enrolment data from basic schools in Czechia. The issue was examined using a nomothetic approach at two levels - national and regional. Methodologically, the issue was approached through quantitative data analysis. Descriptive and exploratory data analysis was used, followed by cartographic visualisation. The primary statistical unit was the basic school (ISCED 1 and 2), which is also used in enrolment data reporting. Only regular basic schools (mainstream, includes students with mild/moderate special needs) were considered from the database of all basic schools. Thus, two types of special basic schools (for students with severe or moderate intellectual disabilities and other types of disabilities) were not included in the research. Data for individual schools were aggregated into higher administrative units-administrative districts with extended powers (hereinafter referred to as districts), with the median value being used to represent these units.

Statistical data from the Report on the Commencement of Compulsory Schooling in Basic Schools was used to analyse the developmental dynamics. This is non-public data provided by the Ministry of Education, Youth and Sports of the Czech Republic (hereinafter referred to as Ministry of Education) for the period 2015–2024. This report is completed annually by the headteacher of the basic school by May 31 of the given year and contains

information on the number of applications submitted, pupils admitted, deferrals granted, and other information related to the school enrolment process. However, the final number of pupils admitted is not known until September 30 of the given year, after the start of the school year. The database contains more than 3,600 enrolment records from individual schools for each year. Enrolment in basic schools in Czechia takes place in April, when parents register their children for basic education by submitting an application to the school of their choice. Parents can apply to more than one school and, if their child is not accepted at their preferred school, they are guaranteed a place at their catchment school. Nevertheless, parents are still required to submit an application to the catchment school. Due to the possibility of submitting multiple applications, there are multiple entries in the database. At the level of individual schools, the number of pupils can be considered, as one application corresponds to one pupil. However, when the data is aggregated, there is a distortion, as the number of pupils enrolled cannot be identified. This fact has also been confirmed by the Ministry of Education, and it is not possible to determine the specific number of children who enrolled in all schools or in different regions in a given year. Therefore, this study works with the number of applications rather than the number of pupils. The numbers of 6-year-old children for each year (population data) were obtained from the public web database of the Czech Statistical Office. However, the numbers of children refer to December 31 of the given year and not to a more appropriate date for basic school attendance (children who reach the age of 6 by August 31). The use of the average age of the given age group was also considered, but according to the Czech Statistical Office, this indicator is only an estimate, which may not accurately reflect reality. For this reason, data from the end of the year were used. For the purposes of cartographic visualization (ARCDATA PRAHA, 2024), administrative territorial units were obtained from the ArcCR 500 vector database.

The number of applications submitted during enrolment (hereinafter referred to as the number of applications) was determined as a suitable attribute for data analysis. An increasing number of applications was interpreted as an indicator of greater interest in a given school, and therefore, a higher load for that school. However, the absolute value of the attribute does not sufficiently take into account, for example, the total capacity of the school or the capacity of the first grades (the maximum number of children admitted to the first grade). For these reasons, the number of applications was converted into relative values to better reflect the load on individual schools. However, school capacity proved to be an unsuitable basis for calculating these relative values, as schools of the same size may admit different numbers of pupils to the first grade. The ideal attribute would be the capacity of the first grades, but this is not recorded in Czechia. Therefore, the number of pupils admitted at enrolment was used to derive these relative values. It was assumed that, if there were enough applications, schools would accept pupils until the first grades were full. An Enrolment Pressure Index (EPI (1)) was therefore created to express the load in a given school. It can be understood as the number of applications per admitted pupil. The higher the index value, the greater the pressure to obtain a place at the school and the greater the pressure on the school during enrolment. The index ranges from 0 (indicating that the school admitted no students) to 6.0 (the maximum

value from 2020) during the period under study. The maximum value varies over the years depending on the school load. However, this index applies to all schools equally. This can lead to situations where a school with a very small number of applications will have the same index value as a school with several times more applications. However, this load may pose the same problem for both schools, even though they have different capacities. Despite this fact, it is worth mentioning that if a school wants to accommodate additional applicants beyond the capacity of the first grades, it is much more difficult to do so in a situation with a higher absolute surplus of applications. For this reason, the Weighted Enrolment Pressure Index (WEPI - (2)) was introduced, which takes into account the higher number of applications. The index ranges from 0 (indicating that the school admitted no students) to 12.35 (the maximum value from 2018). The higher values of this index result from the use of a logarithm. Both indices thus represent indicators of the load of school, but with different weights for schools with a higher number of applications.

$$EPI = \frac{X}{Y} \quad (1)$$

$$WEPI = \frac{X}{Y} \times \log(X) \quad (2)$$

where X represents Number of Applications; Y represents Number of Admitted Pupils.

4 RESULTS

The last decade can be described as a dynamic period for the Czech education system. In addition to general demographic changes in the population and processes related to the quasi-market environment in education, three important events took place during this period - the introduction of inclusive education, the COVID-19 pandemic, and the arrival of Ukrainian refugees. These events may have influenced the basic school choice dynamics in various ways. On a national level, the development characteristics of basic education (number of schools, children, and applications) will be presented. The developmental dynamics will be demonstrated through the values of the EPI and WEPI indices and their structural variability according to selected indicators (population size of the municipality, school capacity, and school operator). The regional level will then highlight the spatio-temporal changes in these indices at the level of individual regions - administrative districts with extended powers (hereinafter referred to as districts).

National level

For selected development characteristics, slightly different dynamics can be observed at a national level (Fig. 1). The number of basic schools shows an almost linear growth trend throughout the entire period under review. Over the last decade, their number has increased by 210 schools (an increase of 5.7%), with private schools being the most frequently established (Meyer & Kučerová, 2023). A similar trend was observed in the number of enrolment applications. These declined until 2018 and then showed a stable growth trend, which increased slightly around 2021. The difference between the total number of applications and first-time enrolments (the children who were at a school enrollment for the first time in their lives) is due to the large number of deferrals granted. In this respect, Czechia is one of the countries with the highest proportion of

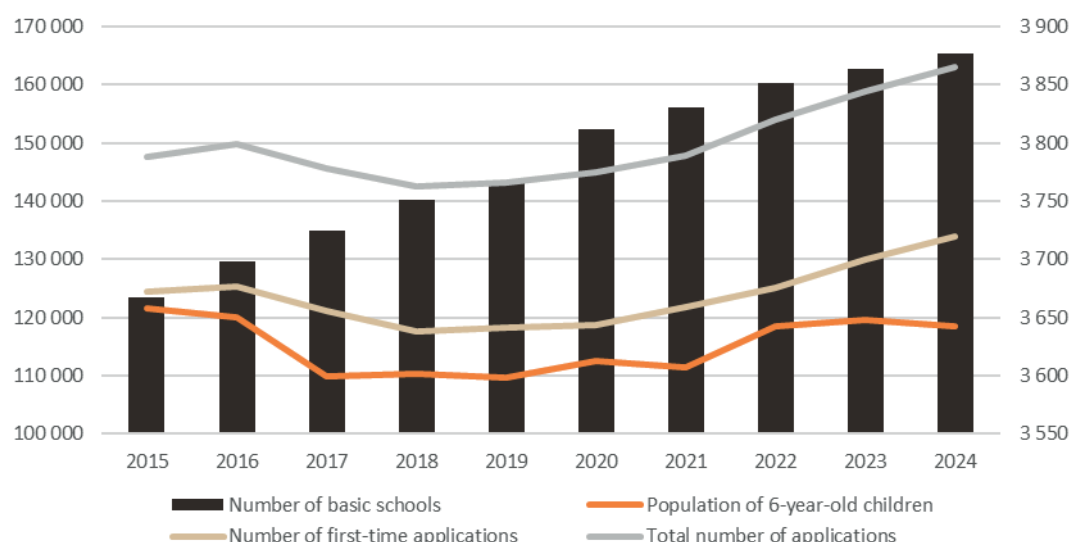


Fig. 1. Selected development characteristics of basic schools in Czechia, 2015–2024

children granted deferrals (Vlčková, 2017). The data from the Czech School Inspectorate simultaneously document a rising trend in the period 2014–2023 (ČŠI, 2024). Overall, the total number of applications has increased by approximately 15,000 (+10.5%) over the last decade. In contrast, the number of 6-year-old children decreased by almost 3,000 (-2.4%) during the period under review.

In the initial period between 2016 and 2017, there was a decline in both the number of children and the number of applications (both for first-time enrolment and overall). However, it is clear that the number of applications declined more slowly than the number of children. In 2015, there were 1.05 applications per child (for the first time at enrolment), while in 2017 this figure reached 1.10 (the second highest figure in the period under review). Despite the declining number of children, the number of applications thus increased. It can be assumed that this increase was related to the introduction of inclusive education, which came into effect on September 1, 2016. Some of the children who had previously been educated in special schools had to enrol in regular basic schools due to the introduction of inclusion. In some respects, parents may have been more likely to look for schools other than their local schools if they had concerns or personal experience suggesting that the local school did not meet their child's needs.

The period from 2017 to 2021 can be described as relatively stable and less dynamic. The number of children remained roughly the same, and both indicators of the number of applications showed a slight upward trend. However, between 2020 and 2021, there was another slight decline in the number of children, but the number of applications continued to rise. The global COVID-19 pandemic also took place during the same period. As part of anti-epidemic measures, one of the consequences of the pandemic was the temporary closure of not only basic schools. Many schools in Czechia were not prepared for the transition to distance learning (methods, experience, equipment, etc.). As a result, the quality of teaching varied considerably between schools (DeMatthews et al., 2021). Parents' shared negative experiences with this form of teaching at some schools may have been a motivating factor for them to apply to other schools. It can therefore be assumed that the increased

number of applications may have been related to parents' acquired experience with distance learning, which influenced their preferences.

Between 2021 and 2022, the most considerable increase in the number of children in the entire period under review was recorded, which was related to the arrival of refugees from Ukraine. A large number of school-age children thus entered the Czech education system over a short period. Surprisingly, despite the increase in the number of children, the number of applications grew more slowly. Ukrainian parents apparently chose schools less often or not at all. This can be explained by several factors. Most refugees did not speak Czech and were unfamiliar with the Czech education system. Parents may not have been aware of the possibility of submitting multiple applications. Czech authorities and schools actively helped to enrol children in basic schools, which often led to direct assignment of a place in a school. The administrative processes related to school enrolment were also adapted to ensure that Ukrainian children could start school as soon as possible.

The last three years have seen the most considerable growth trend in the number of applications during the entire period under review. In 2024, the number of applications per child reached 1.13 (the highest value in the period under review). The number of applications thus grew steadily, but the number of children stagnated and even decreased in the last year.

Looking at the dynamics of the EPI and WEPI indices at a national level, a gradual upward trend can be seen (Fig. 2). This trend is also confirmed by the increase in the median values of the EPI, which rose from 1.14 to 1.24 over the last 10 years, and the WEPI, which rose from 1.65 to 1.84. The most considerable jump is evident in the period related to the introduction of inclusion. At the same time, the gradual upward trend in the category with the highest values for both indices points to an increasing number of schools facing load at the time of enrolment. For both indices, this category increased by 10 percentage points during the period under review. For example, in 2024, over 4% of schools had twice as many applications as pupils accepted at the time of enrolment. In 2015, this figure was only 1.5%. Conversely, the category with the lowest load showed a gradual downward trend for both indices. This resulted in an overall change in the

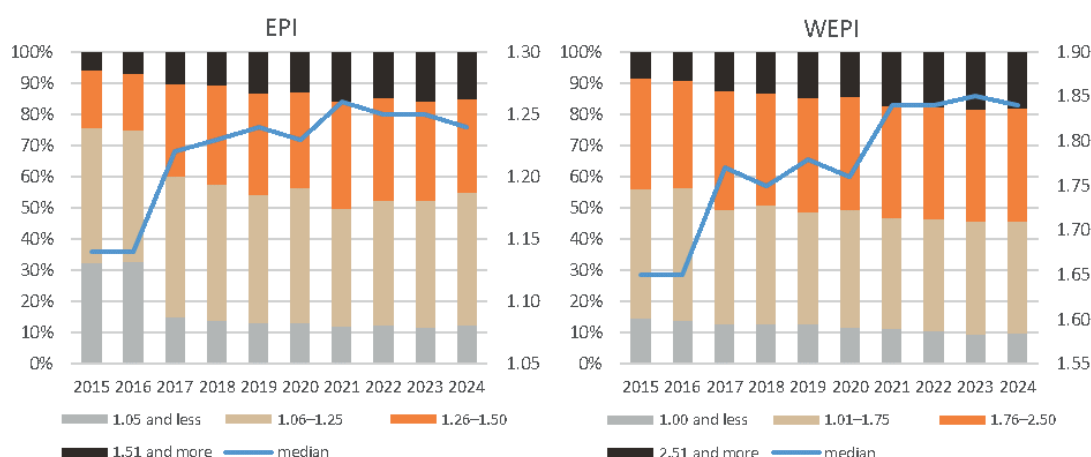


Fig. 2. Distribution of basic schools by intervals of the EPI and WEPI indices, 2015–2024

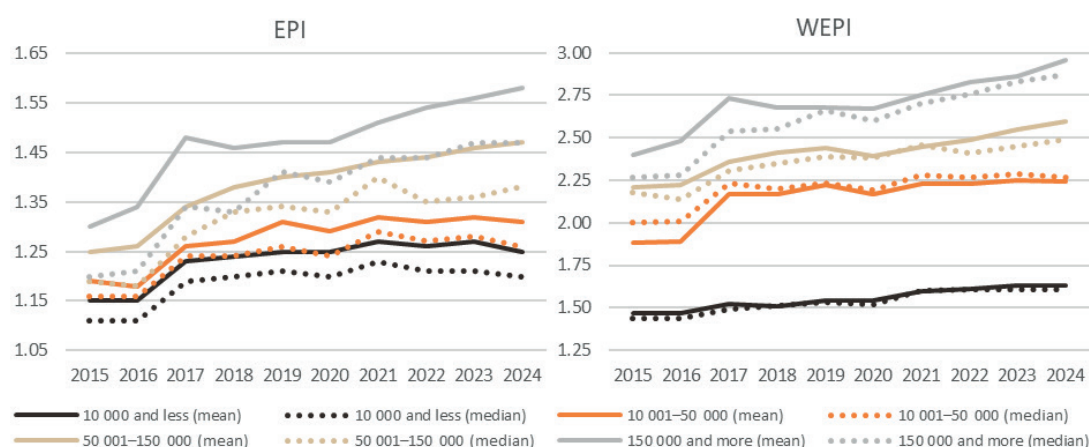


Fig. 3. Development of EPI and WEPI indices according to the population size of the municipality of the school

distribution of values for both indices, leading toward a higher proportion of categories with higher values for both indices.

A similar dynamic in the average and median values of both indices is also evident when using the indicator of the population size of the municipality where the school is located (Fig. 3). However, the developmental dynamics vary slightly between the categories. In general, higher values and growth trends are observed in municipalities with more than 50,000 inhabitants. These municipalities have a higher concentration and capacity of schools, and thus more school choices. Municipalities with fewer than 50,000 inhabitants recorded an increase at the beginning of the period under review, after which their trend can be described as stable or slightly upward. In the case of the WEPI, however, there is also a difference between the two smaller population categories. Both categories have the same trend, but municipalities with 10,000–50,000 inhabitants have a higher proportion of schools with higher enrolment applications than the lowest category. This is reflected in a more pronounced difference in the values between these categories than in the EPI.

When using the school capacity indicator, the differences in developmental dynamics are not as pronounced as with other indicators (Fig. 4). A similar long-term growth trend is observed for both indices in all categories. Different trends can only be observed

in the last 3–4 years, and only in the EPI. Looking at the values, it is clear that the differences between the categories in both indices are quite considerable. This is mainly due to the attributes included in the WEPI calculation, where schools with more applications have a greater weight. Schools with higher capacity also have higher numbers of applications for enrolment, which is why the differences in this index are so considerable. However, the values of the individual categories of the EPI provide an interesting finding. The categories with the highest school capacity have the same index values as schools with half the capacity, and the 600–800 category even has higher values. This fact can be explained by parents' preference for medium-sized to large schools. However, there is also an opposite explanation, namely that the largest schools have a lower load because their capacity has already been optimized for higher numbers of enrolment applications. In the 600–800 category, a surprising trend was observed in the last year, with an increase in the difference between the average and median values for both indices. It is therefore clear that the load on some schools in this category has increased in recent years.

A growth trend was also observed when considering different school operators (Fig. 5). In the long term, roughly the same increase in values can be observed for all operators, but with different dynamics. Church and private schools recorded higher values for both

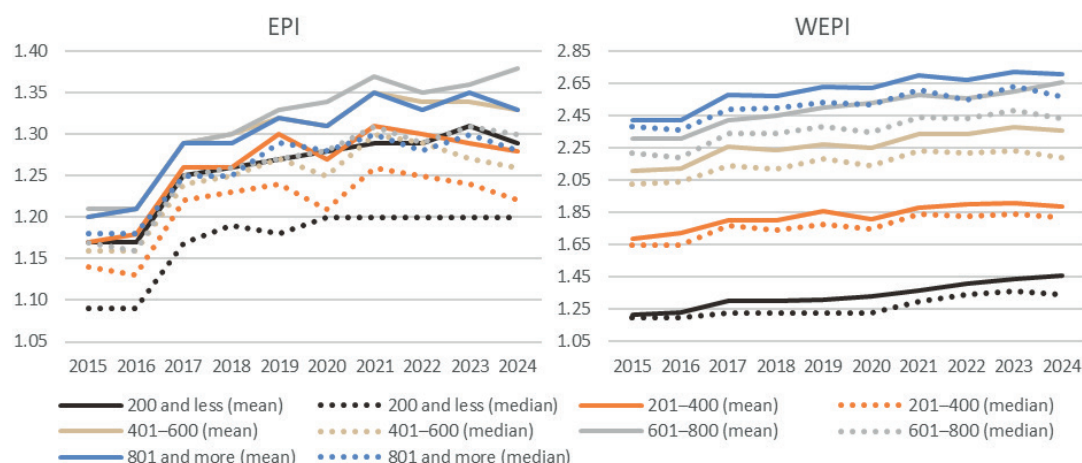


Fig. 4. Development of EPI and WEPI indices according to school capacity

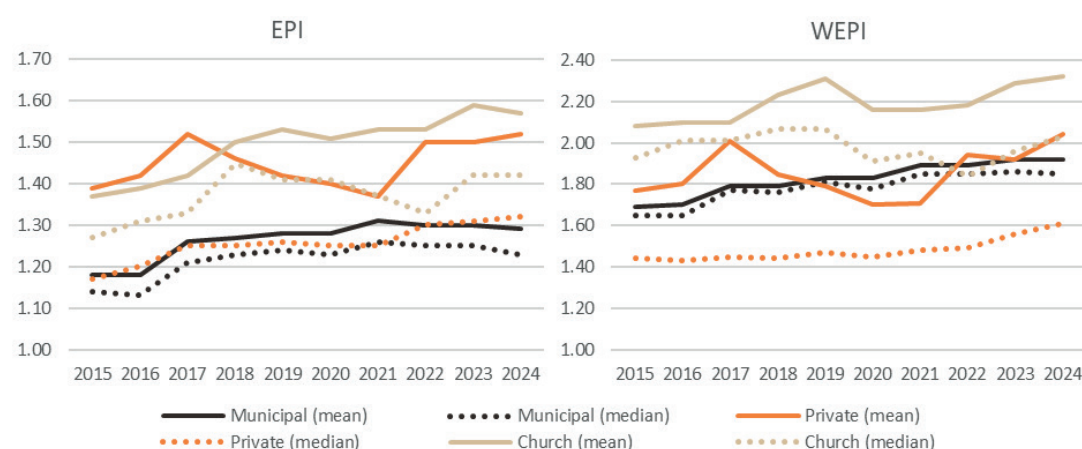


Fig. 5. Development of EPI and WEPI indices according to school operator

indices than schools operated by municipalities. The higher dynamics and values of these operators can likely be attributed to the overall representation of these schools within the school network. Church schools account for 1.0% ($n=39$) and private schools for 7.3% ($n=284$) of the school network and are therefore only represented by a minority. In the event of high demand, the number of applications to these schools is highly concentrated. The number of church schools has remained virtually stable in recent years, meaning that the supply of schools is not responding to high demand. Private schools, on the other hand, are recording stable annual growth (Meyer & Kučerová, 2023). Despite this, the value of both indices continues to rise, which may indicate high interest in this type of school and a continuing shortage of supply.

Regional level

The results obtained at the national level indicated growth trends for both indices in almost all indicators. However, this perspective represents the general direction of the issue under consideration and does not take into account its spatial differentiation. Based on theoretical assumptions, it can therefore be expected that, with the transition to a lower hierarchical level, the monitored indices will develop in different ways (Hampl, 2010). The regional level will thus provide a more detailed view of the spatio-temporal development in different parts of Czechia.

If we focus on comparing districts without spatial delimitation for the time being, we can identify diverse development (Fig. 6). In line with the findings at the national level, most districts recorded a growth trend for both indices between 2015 and 2024 (top right). In these districts, the value of both indices increased over the long term, and the increase was reflected across the entire spectrum of schools. However, the regional level also revealed districts with a completely opposite trend (bottom left). Within Czechia, this trend applies to approximately 8% of districts, including one district with a regional capital. However, it should be emphasized that in terms of the decline, the values are lower than in other growth districts. Nevertheless, a decline was recorded for both indices at the same time and was reflected in most schools. A similar number of districts recorded an increase in the EPI, but a decline in the WEPI (bottom right). The index values for these districts thus indicate that there was a slight increase in most schools, but schools with a higher number of applications did not show a growth trend. However, it is necessary to take into account the lower values for both indices. The least represented districts are those where the EPI declined and the WEPI increased. A slight decline was recorded in most schools, but schools with a higher number of applications still recorded growth.

The spatial differentiation of the above-presented changes in the WEPI is most evident from the cartographic visualization (Fig. 7). The spatial

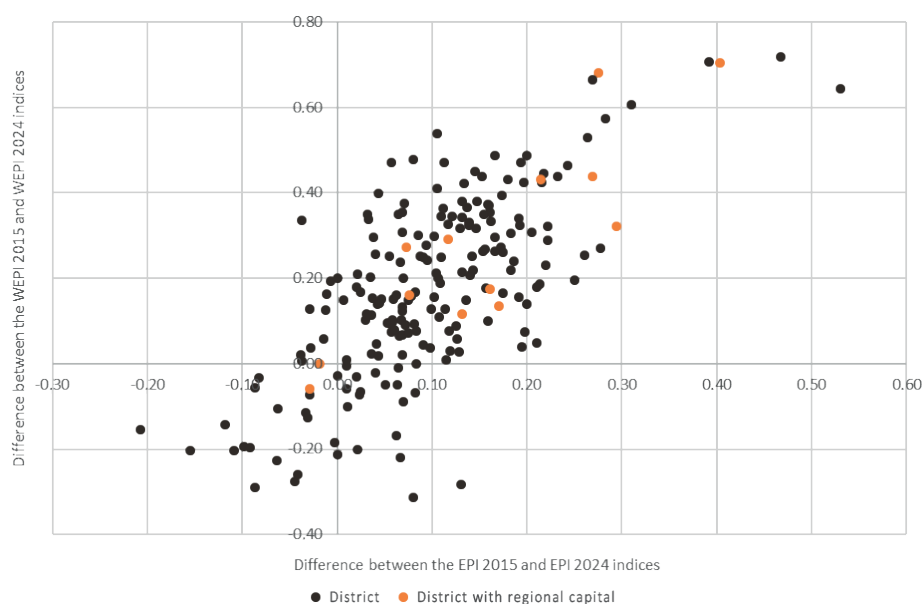


Fig. 6. Relationship between differences in EPI and WEPI indices between 2015 and 2024 by district

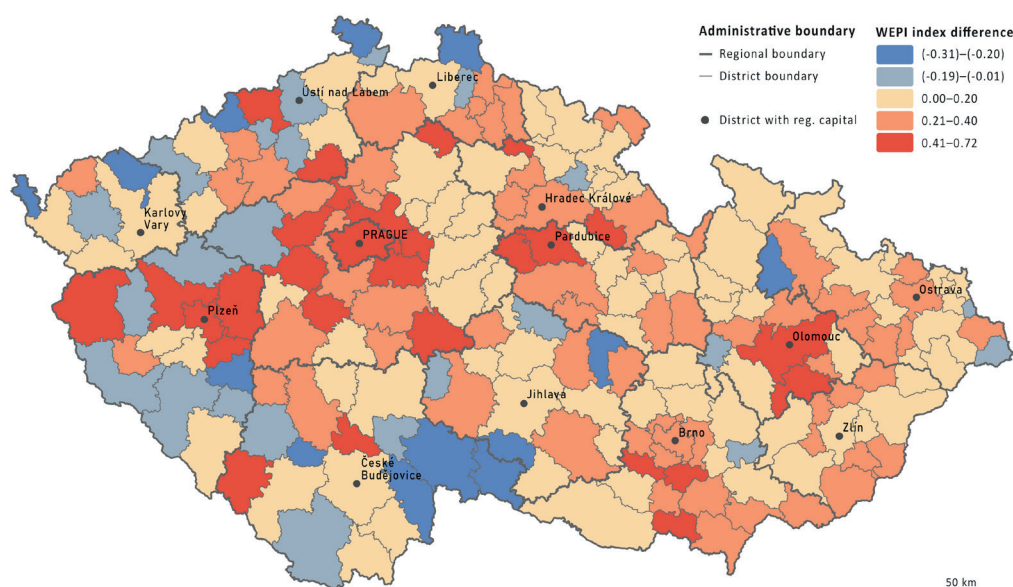


Fig. 7. Spatial distribution of differences in the WEPI between 2015 and 2024 by district

distribution of changes in the WEPI is highly differentiated within Czechia. Districts with a regional capital show different developmental dynamics. With the exception of the regional capital Ústí nad Labem, all these districts recorded an increase. However, only four districts showed more pronounced growth trends. These districts also show a growth trend in the surrounding districts, with a concentration around Prague and Plzeň. Districts with a declining trend show a relatively expected spatial pattern. These districts are mainly located in the border areas of Bohemia and typical inner peripheries. However, the Moravia region (the eastern part of Czechia, approx. 1/3 of the territory) is an exception, where a declining trend was also expected. However, the border areas and inner peripheries concerned remained relatively stable.

To better understand the territorial context, the spatial delimitation of the WEPI values for 2024 will also be presented (Fig. 8). The current situation can be understood as the result of previous long-term developments. The spatial distribution of the index

values shows a typical spatial pattern linked to the distribution of the population. The highest values of the index is thus recorded in districts with regional capitals, adjacent districts, and more urbanized districts (northwestern Bohemia and the easternmost part of Czechia). Compared to the previous map, it is evident that despite a decline or slight growth trend in some districts with regional capitals, they are still among the dominant districts. Similar spatial patterns with the previous map can also be observed in districts with low index values.

5 DISCUSSION

Based on the presented results, it can be stated that the school choice dynamics has been increasing in Czechia over the last decade. An increase values in both indicators (EPI and WEPI) was identified at both the national and regional levels. The most considerable increase can be attributed to the 2016–2017 period, which is related to the introduction of inclusion,

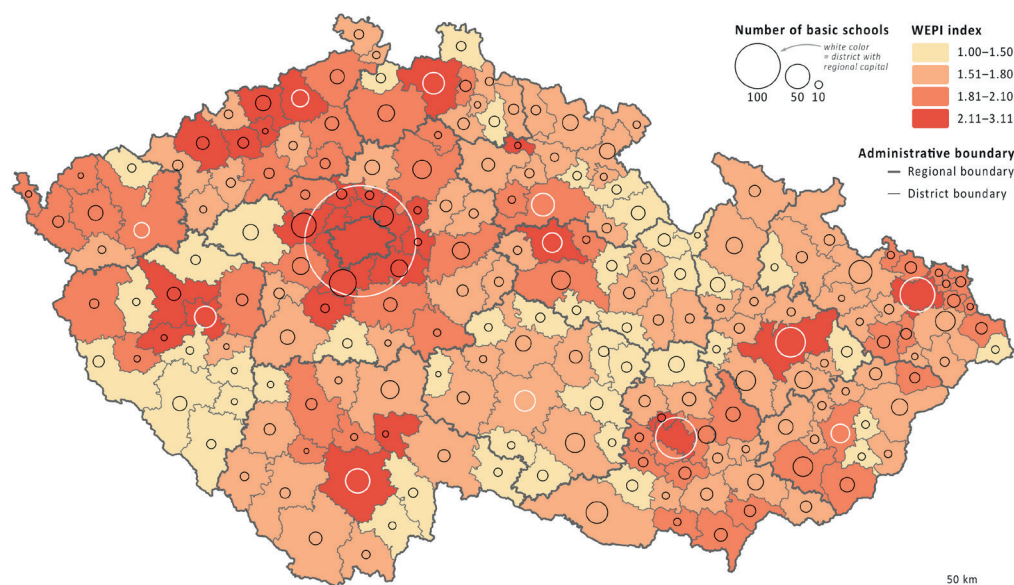


Fig. 8. Spatial distribution of the WEPI and number of basic schools in 2024 by district

or rather, the factual changes within schools. The heightened school choice dynamics were thus linked to the transfer of a large number of pupils to regular basic schools and the search for ideal schools that met the needs of pupils with special educational needs. At the regional level, the indicators showed the expected heterogeneity, consistent with the scholarly literature (Hampl, 2010). An increase values in the indices was also observed for all structural indicators of schools. The population size of a municipality reflects the value of the school index relatively well. Higher increases and higher index values for church and private schools can be explained by the growing interest in these types of schools, which are underrepresented in Czechia (Meyer & Kučerová, 2023). The current spatial distribution of the monitored values of school choice (WEPI) corresponds relatively well to the distribution of regional capitals and, to some extent, outer and inner peripheries (Jeřábek & Wokoun, 2023). This also broadly corresponds to the region's attractiveness from the perspective of the demographic situation. However, this perspective does not sufficiently explain the distribution of developmental dynamics. In particular, some areas with regional capitals have experienced a long-term decline despite their current dominance. These are mainly regions in the western and northwestern parts of the country. The explanation is thus partially offered through the described concept of socio-spatial differentiation. In recent years, these regions have been among those with higher rates of educational failure (PAQ Research, 2025) and lower levels of educational attainment (Simon, 2017). With the exception of the eastern part of Czechia, most of the territory with a decline in the index largely corresponds to the distribution of outer and inner peripheries. Here, one can assume the influence of the lower attractiveness of these regions from the perspective of the demographic situation and changes in the school network, particularly on the supply side. However, further research focusing on regional and local specifics is needed to explain this difference.

The importance of the contribution and the findings can be understood primarily in terms of planning. The choice of school, which in the context of this contribution can also be understood as parents' enrolment behavior, is a factor that is reflected

annually in regional education planning. Knowledge of the behavior of actors (parents) in the education market can thus help school operators to plan the organization of their schools (enrolment, capacity, etc.) more effectively. Based on the data, it is also possible to consider the introduction of uniform rules for student admissions at high-demand schools, or even the restriction of current school choice. In education systems with a middle level of management or support, the results can help identify schools and regions that have been largely overlooked by parents in terms of their preferences over the long term. This allows for better targeting of strategies and interventions that can help these schools in the regions.

However, from the perspective of data interpretation, which is also related to the limitations of this work, two important points must be emphasized. First, despite confirming an upward trend, the data only reveal a partial picture of the entire school choice process. Above all, the data point to an increasing load on schools during enrolment and identify the most sought-after schools and areas where this is occurring. However, it cannot be said with certainty that the number of parents choosing a school is increasing. The data does not identify how many parents (total number of children enrolled) submitted an application for their child, nor how many applications parents submitted. It is therefore not possible to identify whether the increasing number of applications is due to a higher number of parents choosing schools or the same group of parents choosing schools more frequently. However, the author is inclined to conclude that the number of parents choosing schools is increasing. Based on the stagnant number of children and the increasing number of applications in recent years (Fig. 2), the author is instead inclined towards the assertion of a rising number of parents making a choice. This suggests a recommendation to revise the system of reporting and evidencing enrollment applications. Introducing an anonymous identifier for each pupil would make it possible to identify the frequency of submitted applications and provide a deeper understanding of the issue, both for the needs of educational policy and research. Secondly, it should be noted that the observed increase and decrease in the values of both indices can be interpreted in

different ways. It can be understood in both a positive and negative sense. For example, high values of the indices may reflect various factors, such as school attractiveness, demographic pressure, or, in some cases, insufficient capacity planning. Conversely, schools with a decline in both indices cannot be confidently labelled as unattractive, as this decline may be related to an unfavourable demographic situation in the region. The author is aware of these limitations, but the aim of this paper is not to identify the mechanisms that lead to differentiation in the observed school choice dynamics.

6 CONCLUSIONS

This paper examined the spatio-temporal dynamics of school choice in Czechia. More specifically, data on enrolment in all basic schools between 2015 and 2024 were analysed. The main conclusion of the study is the finding of a gradual increase in school choice dynamics. However, the developmental dynamics vary across regions. The school choice has generally increased in most schools, across municipalities with different population sizes, school capacities, and types of operators. Considerable increases were identified in schools in larger settlements and those operated by church and private entities. Despite the declining number of school-age children in the last three years, the number of applications submitted has increased. In the short term, this trend is expected to continue.

Research on the issue can be further developed in several ways. First, attention should be paid to identifying factors (e.g., external and internal, push and pull) that condition the spatial differentiation of school choice at different levels. Secondly, case studies at the level of individual schools (local level) should focus on a specific description of developments and the factors that led to them. These studies should focus on both general majority trends and extreme cases (outliers). Thirdly, in the case of Czechia, changes related to the introduction of the amendment to the Education Act should be monitored, as it introduces several reforms that may influence the dynamics and nature of school choice. The institutionalization of support positions, the digitization of catchment areas, and considerable restrictions on the possibility of deferring school entry are just a few examples that may influence the dynamics and nature of school choice.

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Article first received: 5 August 2025
Article accepted: 30 December 2025