

STRATEGIC PLANNING BASED ON DEMOGRAPHIC PROJECTIONS OF SCHOOL DEMAND: WHAT CHALLENGES DO THE DIFFERENT ACTORS HAVE TO FACE?

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Abstract

As partners, municipal and school authorities are faced with the challenge of strategically planning the education of their young citizens. When we refer to strategic planning, we envision it divided into three stages: analysis or diagnosis of the system; policy formulation; and action plan. The first stage deals with the diagnosis of the existing reality by quantifying the population that is going to be educated. This quantification has been developed based on a cross-sectional analysis. We chose to present a methodology based on a longitudinal analysis, namely the reconstruction of the educational trajectories of individuals of the same cohort, thus applying the principles of demographic analysis to school events (Bandeira, 2007). This methodology allows us not only to analyse current educational trends but also to project the impact of maintaining enrolment and education rates in the 2025 timeframe, based on projection scenarios of the population within the normal age for attending school. Therefore, we took the municipality of Castelo Branco as the unit of analysis and applied the principles of demographic analysis to school events. As a result, and despite the limitations identified throughout the study, we think the longitudinal analysis of the school trajectories of students coupled with population projections allows us to have a better understanding of the possible and/or probable futures regarding school demand in Castelo Branco.

Keywords: strategic planning; school demand; demographic projection; school trajectory

1. Introduction

In Portugal, education policies have been taking a leading role, especially since the turn of the 1980s, when we witnessed a reformulation in the regulation mode of the national education system. Since the Law on the Education System (1986), the topic of “decentralization” began to guide the Portuguese educational policy. We understand decentralization as a process associated with the concept of subsidiarity, i.e., the transfer of functions and tasks to the lowest level of the social order able to complete them, assuming a redistribution of authority, power, resources, and responsibilities. This redistribution can be made between functions or between “territories”. Either there is a distribution of powers between various authorities working in parallel, or there is a transfer of powers from higher to lower levels of government. In the latter, the authority can be allocated to the central, regional or municipal government, district or local council, and/or schools boards (McGinn & Welshthem, 1999 as cited in Batista 2012).

Increasingly, municipal authorities are faced with new responsibilities delegated by the central government (Municipal Councils of Education, Educational Charter - Laws No. 115-A/98 and No. 7/2003, later amended by Laws No. 41/2003 and No. 6/2012). Furthermore, the relationship with schools and vertical clusters of schools has been strengthened.

As partners, municipal and school authorities are faced with the challenge of strategically planning the education of their young citizens. When we refer to strategic planning, we envision it divided into three stages: analysis or diagnosis of the system; policy formulation; and action plan (Chang, 2008).

The first stage deals with the diagnosis of the existing reality by quantifying the population that is going to be educated. This quantification has been developed (particularly in municipal charters and educational projects targeted at schools/vertical clusters of schools) based on a cross-sectional analysis, i.e., the evolution of total students enrolled in a particular school year and the enrolment rates calculated by the normal age for attending school.

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We chose to present a methodology based on a longitudinal analysis, namely the reconstruction of the educational trajectories of individuals of the same cohort, thus applying the principles of demographic analysis to school events (Bandeira, 2007). This methodology allows us not only to analyse current educational trajectories in the present but also to project the impact of maintaining enrolment and education rates in the 2025 timeframe, based on projection scenarios of the population within the normal age for attending school.

In this analysis, we can see past trends (perspective) and simultaneously projecting them into the future (prospective). Our goal is to provide an overview of possible futures through a simulation exercise that will allow us to highlight what can happen under many previously established and justified assumptions. This exercise does not aim to be a forecast or a futurology practice but a reflection that can lead to action and fight against fatalism (Nazareth, 2009).

At the policy formulation stage, the previous approach will allow the different actors (mainly municipal and school authorities but also the community in which the school is located and families) to discuss the challenges that municipalities and vertical clusters of schools/schools will be facing in the next decade, as well as potential solutions via the formulation of policies (We can't forget that these policies should be analysed taking into account the constraints of national education policies and European guidelines in the area of education). Although we do not intend to elaborate on the third phase, we must clarify that the action plan refers to the physical product of the strategic planning process. Besides the initial diagnosis, it includes goals and priorities for action, as well as the strategies and policies to be implemented in order to achieve these goals. In other words: it is the document that gets the action going.

2. Methodology

According to Bandeira (2007), the school population $\frac{3}{4}$ like any other population $\frac{3}{4}$ lives and reproduces itself through its own dynamics. The dynamic of school activity includes the permanent and cyclical succession of inflows and outflows of students in the educational system. But while a larger population (e.g. the Portuguese population) ensures its renewal by generational replacement, the school population depends on exogenous factors in order to reproduce itself. These can be: demographic structures (that are in turn conditioned by births, mortality, and migrations); public policies that affect access to education; individual propensity to pursue further studies; and the availability of families to match this propensity (Bandeira, 2007, p. 517).

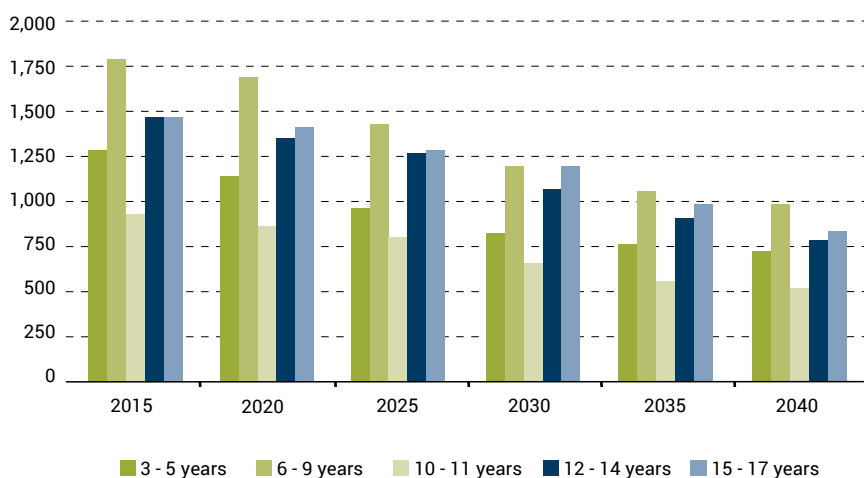
Therefore, we took the municipality of Castelo Branco as the unit of analysis and applied the principles of demographic analysis to school events. We transposed the principles of construction of mortality tables to the population of students enrolled, and enrolled for the first time, by age, academic year, and school year. This process was aimed at the construction of a school enrolment panel and a panel of schooling. These panels are built upon, respectively, the calculation of enrolment ratios (which relate the students enrolled with the population of a specific age attending school) and schooling rates (which indicate promotions, grade repetition, and dropouts in each academic year). Disaggregating data by age allows us to reconstruct the school trajectories of students in a particular cohort.

In a prospective exercise, we have assumed that the identified school trajectories would remain constant over the next 10 years (until 2025). We have also traced the expected school demand over that period based on the evolution of the number of students that are of the right age to attend a certain level of education. The calculation of this number of students is based on previously completed population projections by age.

3. Results

As we said before, this methodology allows us to project the impact of maintaining enrolment and education rates in the 2025 timeframe, based on projection scenarios of the population within the normal age for attending school. In the graph below, the expected school demand at Castelo Branco until 2025 in the moderate scenario of projection shows a clear downward trend. In this scenario, in 2015 children between the ages of six and nine years old would slightly exceed 1 750 and in 2040 the expected school demand would be below 1000. This means that in the next 25 years, Castelo Branco can lose more than 750 children only in this age group.

Figure 1 - Projection of expected school demand in Castelo Branco until 2025 (moderate projection scenario) based on the number of students that are of the right age to attend each cycle of education.



If we look at this projection based on the number of students that are of the right age to attend each academic year, we can see the impact over the next ten years.

Table 1 - Projection of expected school demand in Castelo Branco until 2025 (moderate projection scenario) based on the number of students that are of the right age to attend each academic year

Academic Year	School year													
	2015/2016			2016/2017			...	2020/2021			...	2025/2026		
	MF	M	F	MF	M	F		MF	M	F		MF	M	F
Kindergarten	1287	666	678	1287	656	658		1131	594	591		945	527	526
1 st year	429	222	226	428	221	226		404	209	208		336	183	183
2 nd year	447	234	223	429	222	226		426	214	213		348	188	187
3 rd year	451	237	224	446	222	226		426	220	218		360	193	192
4 th year	457	240	226	450	222	226		426	221	226		374	198	197
5 th year	464	244	228	456	234	222		425	221	226		387	203	202
6 th year	473	249	232	463	236	223		425	221	225		400	208	207
7 th year	483	255	236	472	239	225		442	221	225		421	214	212
8 th year	491	259	240	481	243	227		446	221	225		421	219	217
9 th year	496	262	244	489	249	231		450	233	221		420	220	224
10 th year	496	261	248	494	254	235		457	235	222		419	220	224
11 th year	492	258	252	494	258	239		466	238	224		418	220	224
12 th year	487	255	256	490	261	243		474	242	226		434	219	224

As mentioned before, we have transposed the principles of construction of mortality tables to the population of students enrolled, and enrolled for the first time, by age, academic year, and school year. This process was aimed at the construction of a school enrolment panel and a panel of schooling. Table 2 corresponds to the school enrolment panel of the students from the 2001 and 2002 Cohorts.

For example, the children of the 2002 cohort were 9 years old in the 2008-2009 academic year, with an enrolment rate of 933 students for each 1000 children that had that age in the municipality of Castelo Branco. There were 471 children enrolled in school and 61 dropouts (this can include children that go to other schools outside the municipality because at this stage we have no information that would allow us to identify and exclude those cases).

Table 2 - School enrolment panel of the students from the 2001 and 2002 Cohorts (10 and 11 years old in 2011).

	Academic Year		
	2008-2009	2009-2010	2010-2011
2001 cohort			
Age	8	9	10
Rate (%)	801.51	780.72	896.03
Enrolled (N)	424	413	474
Dropouts (N)	0	-61	-
2002 cohort			
Age	9	10	11
Enrolment rate (%)	932.67	1053.47	1055.45
Enrolled (N)	471	532	533
Dropouts (N)	-61	-1	-

In the following table, we applied the school enrolment panel of the students from the 2001 and 2002 Cohorts to the 2025 population with 10 and 11 years old, assuming that the identified school trends would remain constant until then. As we can see, in the 2023-2024 academic year, 9 year-old children enrolled in school would be 375 and 48 children would not be enrolled.

Table 3 - Application of the School enrolment panel of the students from the 2001 and 2002 Cohorts to the 2025 population with 10 and 11 years old, assuming that the identified school trajectories would remain constant until then.

	Academic Year		
	2023-2024	2024-2025	2025-2026
2015 cohort			
Age	8	9	10
Rate (%)	801,51	780,72	896,03
Enrolled (N)	312	303	347
Dropouts (N)	9	-44	-
2016 cohort			
Age	9	10	11
Enrolment rate (%)	932,67	1053,47	1055,45
Enrolled (N)	375	422	422
Dropouts (N)	-48	0	-

4. Conclusions

Despite the limitations identified throughout the study, the longitudinal analysis of the school trajectories of students coupled with population projections allows us to have a better understanding of the possible and/or probable futures regarding school demand in Castelo Branco. This approach, in our view, is a very important part of the system analysis and provides a valid contribution to the debate on the merits and the challenges that education in this district is facing today and will face in the near future, taking into consideration the different educational actors. Remembering the words of Chang (2008), planners and managers can look at this contribution (as part of the overall system analysis) from the perspective of the system's strengths, weaknesses, lessons, and opportunities regarding educational development and use it to help to identify critical issues and challenges, and design remedial actions and policy provisions.

From the policy formulation perspective, in Castelo Branco the population decline in pre-school and school age children over the next 10 years can be seen as an opportunity to promote educational excellence but represents a challenge to the management of physical and human resources and the planning of educational offers.

Assuming a scenario of maintenance of school trajectories over the next 10 years, we find that the focus will be increasingly on improving the quality of education for a progressively reduced group of individuals who represent the future of the municipality.

Also, the strategic planning of education in Castelo Branco cannot be oblivious to the net migration, which has been negative in the past few years, a trend maintained in the moderate scenario of the projection used in this exercise. In fact, the educational actors are responsible for suggesting policies to promote the permanence of the younger generations in the municipality, which can include, for example, a better integration of Gypsy students³⁶ and simultaneously promote their academic success, as this population has a higher school drop-out. Let us remind that these policies should be part of the goals and purposes defined along the following threefold dimension (Chang, 2008): access (access, participation, including gender, and equity issues); quality (quality, internal efficiency, relevance, and external effectiveness), and management (governance, decentralization, resource management).

We would like to end this reflection by saying that education planning has become more complex because it involves various actors, it is influenced by the system analyses, it involves more complex and multidimensional problems and it requires the involvement of many diversified and specialized skills and competences of the education managers.

36 National Strategic plan to integrate Gypsy Communities - Law No. 51/2013; and "Tackling Gypsy Needs in the 2014-2020 Structural Funds Programming Period" in the European Anti-Poverty Network EAPN <http://www.eapn.pt/documentos.php?ID=7#sthash.NBvbGbF7.dpuf>

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