

Research on the Influencing Factors and Support Degree of Kindergarten Parents for Public and Private Enrollment Policy——Taking Hangzhou as an Example

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Abstract: Today, people’s demand for quality education is growing, and parents place particular importance on the quality of education their children receive, and under the mechanism of early enrolment in private schools, there is a constant “private fever” and “training fever” in the society. In response to this, the Hangzhou government issued the Notice on Simultaneous Enrolment in Public and Private Primary Schools to ease the pressure on public schools. In this paper, we used Apriori algorithm to mine data based on questionnaire data and found that people who are more aware of the policy are generally freelancers, their children are in the first grade and their annual income is between RMB 100,000 and 200,000. We also investigated parents’ support for the policy, using basic family and child characteristics as independent variables and whether they support the policy as the dependent variable, and developed a dichotomous logistic Regression model to fit the probability of parents supporting the policy and made recommendations based on this.

Keywords: Public and Private Enrollment Policy; Apriori algorithm; Binary Logistic Regression model

1. Introduction

Today, parents are particularly concerned about the quality of education their children receive, and with the mechanism of early admission to private schools, there has been a constant surge of “private fever” and “training fever”^[1]. In response, the Hangzhou government issued the Notice on Simultaneous Enrolment in Public and Private Primary Schools to ease the pressure on public schools. However, there is still no good quantitative model to evaluate the policy, SO this paper conducts a series of studies to investigate the influencing factors and support for the policy.

By reviewing relevant literature, this paper summarizes the relevant indicators that may affect the effectiveness of the policy’s implementation and conducts a questionnaire survey in various urban communities and various Youth Activity Centre in Hangzhou to establish a statistical model to quantify the influencing factors and support for the Public and Private Enrollment Policy.

2. Subject of the Research

In this study, parents of prospective first graders and parents of older and middle school students in Hangzhou were targeted. 572 valid questionnaires were distributed and collected from various urban communities and Youth Activity Centre in Hangzhou.

3. Mining and analysis of the association rules of the implementation of the policy

This paper firstly conducts data mining on the samples to find the relationship between the basic characteristics of families and children and their understanding of policies. In the specific process, we use Apriori algorithm to mine association rules. The characteristic information in our study includes children’s household registration and grade, parents’ gender, occupation, region and annual income level^[2].

3.1 Association rule analysis

After collating the data of 572 valid questionnaire samples, we took the above basic characteristic information as the front item, and parents’ understanding of the policy and their choice changes before and after the policy was introduced as the back item. The minimum support was set at 10% and the minimum confidence was set at 80%. SPSS Clementine 12 software was used to mine the association rules contained in the policy^[3].

The following high-quality association rules can be obtained from the association graph:

Table 1 Schematic table of association rules

In the preceding paragraph	Consequent	Support	Degree of confidence
Freelancer The child is in the first grade	High level of understanding	13.097%	90.164%
Annual household income is 100,000-200,000 yuan The child is in the first grade	High level of understanding	11.858%	88.060%

3.2 Analysis of results

As can be seen from the results in Table 1, people who are familiar with the policy within the survey scope are generally freelancers, whose children are in grade one and whose family’s annual income is 100,000-200,000 yuan. Parents of students with this kind of characteristics tend to have a deeper understanding of the policy, and the implementation of the policy has a greater impact on them.

With the introduction of Hangzhou’s “Public and Private Enrollment Policy”, many parents’ school choice intentions may also

change, and their understanding of the policy varies. In this group, professions are concentrated in freelancers, who work freely, have more leisure time, and care more about their children's admission information. In addition, the children of such parents are often going through or have already gone through the stage of rising from young to young, so the introduction of the "citizen enrollment" policy has a more profound impact on the parents whose children are in the first grade.

4. The analysis of the support for "Public and Private Enrollment Policy" under the Binary Logistic Regression model

To make a more accurate and objective quantitative description, we have carried out Binary Logistic Regression analysis in this section. Combined with the questionnaire, we select gender(X_{1i}), age(X_{2i}), educational background(X_{3i}), region(X_{4i}), family annual income level(X_{5i}), children's grade(X_{6i}), children's household registration(X_{7i}), policy understanding(X_{8i}) and school choice mentality(X_{9i}) as independent variables, and whether to support this policy as dependent variables to establish a Binary Logistic Regression model to predict the probability of parents' support for the policy.

Using SPSS, we use the backward method to screen the independent variables^[4]. The remaining independent variables are gender, annual household income and policy understanding, and the equation is obtained:

$$\ln\left(\frac{p}{1-p}\right) = -2.251 + 0.655X_{11} - 0.392X_{51} - 0.002X_{52} + 0.621X_{53} - 0.043X_{81} - 0.584X_{82} + 0.727X_{83}$$

Among them $p=P(y=1)$, is the probability that parents support the policy.

To test the effect of the established regression model, we use 90 groups of reserved samples to test the model, and the accuracy is about 83.3%.

Based on the above model, for the parents of specific kindergarten students in Hangzhou, we can make a specific analysis on the probability of their support for the policy. For example, the situation of a father who does not know much about the policy and whose family income is 100-200 thousand per year is as follows:

$$\ln\left(\frac{p}{1-p}\right) = -2.251 + 0.655 - 0.002 + 1727 = 0.129$$

At this point, $p=53.22\%$.

By the same token, a father who does not know much about the policy and has an annual family income of 200-500 thousand is 60.96% likely to support it. A father who knows the policy very well and has an annual family income of 100-200 thousand is 65.56% likely to support it.

Comparing the above data, we can see that other thing being equal, when the annual household income increases from 100-200 thousand to 200-500 thousand, the support probability will increase by about 7.74%. When the degree of understanding of the policy changed from not knowing much to knowing very well, the probability of support increased by about 12.34%. Therefore, it can be found that the annual family income and policy understanding have a great impact on the support of the "Public and Private Enrollment Policy". Finally, combined with the survey results, we give the following suggestions: 1. Create a propaganda atmosphere and broaden the publicity channels; 2. Improve the details of the work, set up special institutions or columns, such as "I want to ask for further study" and so on, to answer questions and questions for parents^[5], to enhance the parents' understanding of the policy in Hangzhou.

5. The investigation and summary of the "Public and Private Enrollment Policy"

This study understands the general current situation of the implementation of the "Public and Private Enrollment Policy" through a questionnaire survey, uses algorithms and models to analyze the influencing factors and support of the policy, and finally puts forward some suggestions that can be used for reference.

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