

Report of the Curriculum Survey

(Part I. Sampling Design)

H. Aoyama

The aim of this survey lies in the analysis of the actual situations in the educational curriculum and in the presentation of the methods of improvement for the points in question.

We adopted the double sampling, in the first phase of which the questionnaire were mailed out and in the second phase of which the method of inspection were to be taken.

Our universe consists of national and public primary schools and lower secondary schools in the whole country except some islands. The characteristics in question consist of many different items.

Stratification was done considering the regional blocks, sorts of establishments, urban and rural area, size of schools, and the industrial types of the area. Then the proportional allocation was done where the sampling ratios were respectively $\frac{1}{25}$ for the primary schools and $\frac{1}{3}$ for the lower secondary schools.

After the sampling of the first phase had been done, the systematic random sampling without those stratifications was made newly for some blocks and then the samples were stratified in order to compare the efficiency with the former results. But we could not find the significant differences between them.

Tabulation is now being performed, so only the plan of tabulation is given here.

Mathematico-Statistical Contributions
to Survey on Abilities of those who Comple-
ted Compulsory Education in Japan.

Part I

Sampling Design.

The aim of this survey is to find out not only the fac-
tors influencing the abilities but also the difficulty
points of each subject and to advise the scientific meth-
ods of education.

This survey must properly cover the whole country.

So stratified 2-stage random sampling system and
area sampling system were adopted.

1. Sampling Unit ;

1 st. stage sampling unit are middle schools.

2 nd stage " " are students

2. indices of stratifications

1. Geographical Area

(a) Hokkaido

(b) Others

2. kinds of School

(a) National

(b) Public

(c) private

3. branch schools and others

4. experimental schools and others

5. social and cultural area,

(a) ward

(b) city

(c) gun

6. industrial features

7. number of students

It is indicated in the past experience that the degree of urbanization influences the abilities so much.

So it may be said that those indices influence the abilities. We make the various estimates of the population means of various break downs.

Then the above stratifications is considered to be effective. Several 1st. stage sampling units were drawn with equal probabilities from every stratum.

The size of sample 6000 was allocated to each stratum (the schools to which belonging about equal number of students) in public schools except in the six large cities in proportion to its size.

But in Hokkaido the size was reduced to $\frac{1}{2}$ of the allocated sample size from the convenience of field work.

2nd. stage sampling unit were drawn with equal probabilities.

National schools were drawn from the stratum. Private schools were decided to be surveyed in Tokyo-wards area by using a kind of area sampling system.

Tokyo-wards was drawn from the stratum of six large cities. In Tokyo-wards the sample design bases on the idea of stratified 2-stage area sampling.

And, the size of sample is increased in order to carry out the follow up study of prognoses of the students.

As a result about 7000 students in 144 schools are tested.

Sampling Design of the Survey for the Normalization of Achievement Test in the Social Studies.

H. Aoyama and N. Zama

This survey aims to get some data for the normalization of achievement test in the social studies curriculum.

Our universe consists of all the pupils in national and public primary schools and lower secondary schools in this country, whose characteristics are scores of this test.

Because of the number of testers and economical reasons we had to take only about 3000 testees in all school grades. So the stratified sub-sampling plan was adopted, in which prefectures were the primary sampling units, schools were the secondary sampling units and the pupils were ultimate sampling units.

As the basis of the stratification in the first stage were taken the coefficient of the industry of the prefectures, and as the one of the stratification in the second stage, the type of cities, towns and villages.

The samples were allocated proportionately to the size of pupils in these strata with the exception of doubling the size for the Tokyo Area and so the unbiased estimate was given by these method with the probability proportionate to size.

This is the third issue of a projected series of reports entitled "The Research Report of the I. S. M."

"The Research Report of the I. S. M." publishes the reports of researches done in the application of Statistical Mathematics such as initial preparations, study designs, practical procedures and handling of data.

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