

## C340284 : MAJOR EDUCATIONAL STATISTICS

KEY WORD : PARAMETER / STRATIFIED / SAMPLING / ALLOCATION/ACHIEVEMENT  
DOUNGJAI PAVEENAPICHAT : A COMPARISON OF PARAMETER ESTIMATES OF  
THE STRATIFIED RANDOM SAMPLING WITH DIFFERENT STRATIFIED VARIABLES  
AND SUBSAMPLE ALLOCATION METHODS : A CASE STUDY OF LEARNING  
ACHIEVEMENT. THESIS ADVISOR : ASSO.PROF. SIRICHAJ KANJANAWASEE Ph.D.  
171 pp. ISBN 974-582-060-1

The purpose of this reseach was to compare the mean and variance parameter estimates from stratified sampling with different stratified variables and subsample allocation methods. The stratified variables are kind of school, size of school and Khateumphur. The allocation methods are Neyman and proportion allocation. There are 6 sampling methods using three sample sizes with confidence level at 90 %, 95 % and 99 %

The population of this research was 9,227 public secondary school students in education region 5 in Bangkok in academic year 1991. The sampling with different methods, sample sizes and confidence levels was operated by computer with 1,000 repeated samples. The efficiency of mean and variance parameter estimates were calculated and compared in term of the closeness to the parameters, the variance of parameter estimates, the mean square error and relative efficiency of mean square error.

The major research findings were as follows :

1. Size of school is the highest efficiency stratified variable that estimates mean parameter for all levels of sample sizes and estimates variance parameter for sample size at 95% confidence level. Khateumphur is highest efficiency stratified variable that estimates variance parameter for sample size at 90 % and 99% confidence level.

2. The Neyman allocation is the higher efficiency method than proportion allocation that estimates mean parameter for sample size at 99 % confidence level and estimates variance parameter for almost all level of sample sizes. Neyman allocation is the lower efficiency method than proportion allocation that estimates mean parameter for sample size at 90 % and 95 % confidence level.

3. The stratified variable "Size of school" with Neyman allocation is the highest efficiency sampling method that estimates mean parameter at 99 % confidence level and variance parameter at 95 % confidence level.