

THESIS TITLE: COMPARISON THE PRECISION OF THE PROPORTION ESTIMATOR
BETWEEN TWO-STAGE CLUSTER SAMPLING WITH PROBABILITY
PROPORTIONAL TO SIZE AND POSTSTRATIFIED TWO-STAGE
CLUSTER SAMPLING

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ABSTRACT

This study is a descriptive simulation research. The objective for comparing the precision of the proportion estimator between two estimation method : Two-Stage Cluster Sampling with Probablity Propotional to Size and Poststratified Two-Stage Cluster Sampling.

A sampling frame was set up using demographic structure of Kalasin province in 1997 and using relevant record from the village disease surveillance system in 1997. The sampling frame composed of 25 communities in monopolitian areas, and 1,420 villages in rural areas with total 64,095 children under five years of age. Prevalence of diarrhea was also obtained with 0.135.

Sampling by Two-Stage Cluster Sampling with Probability Proportional to Size, 1,000 samples were obtained by computer. First stage sampling unit 60 villages were selected . From these 60 sampled villages, 20 childrens in the village were studied. After that Poststratified sampling units by 2 statification variable : sex and age stratified 2 stratum 0-11 month and 12-59 month.

For each sampling, 1,000 sample were obtained. Prevalences (p 's) of diarrhea and their variance ($\text{var}(p)$) were estimated 3 types from each sample, Two-Stage Cluster Sampling with PPS, Poststratified Two-Stage Cluster Sampling by conditional variance and Poststratified Two-Stage Cluster Sampling by unconditional variance. Precision of the estimator were compared . Variance of the estimates were used for the comparison.

This study revated that Poststratified Two-Stage Cluster Sampling , stratified by age and estimated by conditional variance have the proportion estimator was the most precision.