พิมพ์ต้นฉบับบทคัดย่อวิทยานิพนธ์ภายในกรอบสีเขียวนี้เพียงแผ่นเดียว

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SOMJAI SUPAKWIRIYAKUL : A COMPARISON OF REVISION METHODS ON ESTIMATING MORTALITY PROBABILITY WITH TRUNCATED DATA. THESIS ADVISOR : ASST. PROF. CAPT. MANOP VARAPHADI, 348 pp.
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The objective of this study is to compare the revision methods on estimating mortality probability with truncated data by using the Monte Carlo Simulation Method repeating 100 times. In this study, the distributions of future life times are Weibull and Gompertz, the distributions of withdrawal times are Uniform and Gamma, the sample size (m) are 100,300,500,700 and 1,000, the proportion of withdrawal are 5%, 10%, 20%, 30%, 35% and 40% of the sample size. The study reveal that the proportion of withdrawal is ineffective to the proficiency in revision methods. Thus, the research presentation is middle value of 30%. The probability that a person whose age is x will die within one year (q'_x) for age x between 0 and 99 years are estimated by Actuarial Estimation Method. These probability are revised by three revision methods ; Moving Weighted Average Graduation, Functional Forms Graduation and Cubic Splines Graduation. To compare these three revision methods, the mean absolute percentage errors (MAPE) 's are considered seperately by sample size and age interval.

The result of this study reveal that when the sample size is small (m = 100 and 300), q'_x has quite high absolute percentage errors (APE) for young ages interval. But when the sample size is large (m = 500, 700 and 1,000), APE of q'_x will decrease. Thus, estimation of q'_x for young ages is not proper for small sample size. MAPE of q'_x at any sample size will vary directly with the proportion of withdrawal.

From q'_x which are revised, reveal that :

For ages 0-24, Cubic Splines Gradution is recommended.

For ages 25-49, when the sample size is small (m = 100 and 300), Cubic Splines Graduation or Functional Forms Graduation are proper for use. But when the sample size is large (m = 700 and 1,000) these three revision methods are appropriate. However, Moving Weighted Average Graduation is recommended because of its convenience and simplicity.

For ages 50-74 and 75-99, both of Moving Weighted Average Graduation and Cubic Splines Graduation are proper for any sample size. But Moving Weighted Average Graduation can not be used to revised q'_x for old age interval (90-99 years).

MAPE of revision of q'_x at any sample size will vary directly with the proportion of withdrawal.

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