

KITTIRAT LELAHUTA : EFFECTS OF PRODUCTION INPUT ON MULTIPERIOD
CAPITAL BUDGETING UNDER UNCERTAINTIES. THESIS ADVISOR : ASSISTANT
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The objective of this research was to compare the difference between labor-augmented and capital-augmented investments in multiperiod capital budgeting under uncertainties. Two types of uncertainties used in this study were cash flow uncertainty, which was affected by economic environment and level of risk, and basic uncertainty, which was the uncertainty of the information concerning future projects. The study was conducted by applying the random simulation technique on a computer. The performance criterion for long-term investment decisions was the net present worth of the firm at the end of the study horizon. The experiment followed the factorial design method in comparing the effects of three factors, namely, production inputs, business climate, and level of risk. Business climate was classified into two levels, i.e., "Boom Economy" and "Recess Economy" while two levels of risk were used which were "High" and "Low." The study covered three possible production characteristics. They were increasing returns to scale, constant returns to scale, and decreasing returns to scale.

The experimental results showed no statistically significant effects on the growth of the company for both labor-augmented and capital-augmented investments. This happened to all of the three types of production characteristics mentioned above except for the case of decreasing returns to scale under boom economy and low level of risk. In general, however, the factors found to have greater effects on the growth of the firm were business climate and level of risk.

The results of this research supported the idea that decision maker should focus on such controllable factors as the design of production processes and other related processes, efficiency and productivity improvement, improvement through technology change, and human resource development.