1. Methodology and Outline

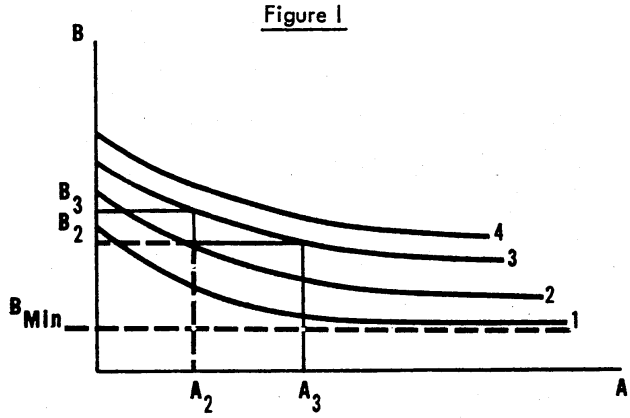
The indifference curves and maximizing principles of economic analysis are used here to demonstrate how management controls over high grades, average salary and manpower spaces prevent the line manager who is limited to a certain dollar budget from optimizing his organization's effectiveness. For the sake of simplicity and clarity, the analysis is restricted to a two-dimensional framework, although it can easily be extended to as many dimensions as desired, depending on the number of inputs.

First, the general method of optimizing the allocation of resources is discussed, and then the impact of each control is separately analyzed.

2. General Method

Suppose that the professional personnel of an organization (e.g., a laboratory) can be divided into two subsets, the GS-13s and below (GS-13–) and the GS-14s and above (GS-14+). Let A represent the number of GS-13s– and B, the number of GS-14s+. Further, let us assume that the productivity of a typical employee within each grade range can be measured and that overall productivity varies according to the mix of A and B. On this basis, the following diagram (Figure 1) may be constructed:

Figure 1



The curves labeled 1, 2, 3 and 4 correspond to isoproductivity curves. Thus, line 1 represents the combinations of A and B that yield an equal level of productivity; line 2 represents a higher level of productivity than line 1, and so on. With an input mix of A_2, B_2, for instance, productivity is $E(A_2, B_2)$. If A_2 is held constant and the number of GS-14s+ is raised to B_3, then productivity increases; that is, $E(A_2, B_3) > E(A_2, B_2)$. Similarly, $E(A_3, B_2) > E(A_2, B_2)$.