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## ESTIMATION OF PRODUCTION AND LOSS OR GAIN TO INDUSTRIES USING MATRICES

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In this paper we give an algebraic approach to the industries production and loss or gain to the industries. We use simple matrix model. This model is then depicted by a graph. The graph shows the peak months of production, less production so on, thus by giving the workers an opportunity to know the real status of the industries loss or gain which will indirectly make the workers to be more committed to their work. We take the raw data from an industry under four main heads which gives the amount got through production of goods, amount spent on workers as pay, amount spent on factors like rent, transportation, electricity etc. and money spent on purchase

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of raw materials. We can instead of four main heads take any number of heads depending on ones interest.

Further in our problem we have taken the periodicity to bimonthly one can analyse it quarterly or biweekly or weekly depending on the availability of the data. The data is put in the matrix form with months as rows and expenditure as the columns. This matrix is called as the raw data matrix. This matrix is converted in the Average Time Dependent Matrix using the mean and standard deviation of each column. This matrix is transformed into Refined Time Dependent Matrix whose entries are only 0, 1 or  $-1$ . Then the row sum is calculated for each month. The highest positive row sum gives the maximum profit. Zero gives no loss or gain, negative value of row sums indicate loss. Thus this is a simple but a very effective method to find the estimation of production and loss or gain.

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