Executive Summary

Literacy programs primarily aim at improving the quality of human capital, which is very vital for the development of any nation. The confidence and behaviour pattern of the neo-literates change tremendously when they are able to read & write. Freire (1987) a famous Brazilian educator observed that literacy enabled adults to read the world by reading the word. Literacy can affect people's lives, both women's and men, through several channels. It increases access to knowledge, information and new ideas. It enhances overall efficiency, opportunities in the labour market and social status (Jejeebhoy, 1996).

The objectives of the minor project entitled "Use of Factor analysis to study the various factors affecting female literacy in the state of Maharashtra" were to study the literacy levels of female literacy rate in different States of India and the districts of Maharashtra. The study also tried to find the factors affecting female literacy rates in the districts of Maharashtra. The study was based mainly on Secondary data from the Census. Advance Statistical techniques like Factor Analysis, Principal Component Analysis and Stepwise Multiple Regression Analyses were used in the study. Two indexes were developed in the study namely economic wealth index and medical index using statistical techniques like Principal Component Analysis.

The improvement in literacy rate had been phenomenal in post independent India i.e. from 18.33 percent in 1951 Census to 74.04 percent in 2011 Census. The corresponding increase in case of males in the same period was from 27.16 percent to 82.14 percent and among females from 8.86 percent to 65.46 percent. Kerala was found to be the most literate state while Bihar was the least literate state in all the three decades 1991 to 2011. The literacy rate of Maharashtra had been continuously increasing at a good speed over the decades. It was observed that the male literacy during this period (1951- 2011) had increased by more than two times while female literacy had increased by more than five times. It was also observed that the speed at which literacy had increased in Maharashtra over the decade 1991-2001 was faster than the recent decade 2001- 2011, which was not a good sign of development.

The Medical Indices was calculated in rural areas and ranked. The best district as per the data was Ahmednagar, second best Sangli followed by Sindhudurg and Solapur at third and forth position and the worst was Nandurbar followed by Buldhana and Akola. Significant Correlation was determined between Female Work Participation Rate, Mean Number of Births, Infant Mortality Rate and Medical Index

but no significant correlation was determined between Female literacy rate and Medical Index.

Fifteen factors were used in the study of the variables affecting the female literacy rate in the combine data of Maharashtra. Four Principal Components were extracted. The four components were divided into "Economic Condition, Fertility, Infant Mortality and Urban Population", "Religion & Sex Ratio", "SC, ST and Male literacy Rate" and "MWPR and Percentage of girls marrying below 18 years".

The Economic Wealth Index was calculated using the first three Principal Component. In Rural areas of Maharashtra fifty percent of districts were with low economic wealth condition, 26.5 percent with moderate economic condition, 20.6 percent of districts with good economic condition and only one i.e. 2.9 percent of districts with excellent economic condition. In urban areas of Maharashtra the situation was reverse 25 percent of districts with moderate economic wealth condition, 30.6 percent of districts with good economic condition and 22.9 percent of districts with excellent economic condition. Significant Correlation was observed between Female Literacy Rate, Female Work Participation Rate, Mean Number of Births, Infant Mortality Rate and Economic Wealth Index.

In rural areas as well as urban areas four principal components were extracted. Based on maximum loadings in Rotated Component Matrix, in rural areas they were divided into four groups of factors. These groups were given headings as "Economic Condition and Demographic Factors related to Women and Child", "SC, ST and Poverty", "Religion & Health" and "Male Work Participation Rate & Education Facility". In urban areas, the factors were given divided into groups "Economic Condition and Demographic Factors related to Women and Child", "Reserved Category and Poverty", "Religion & Health" and "Male Work Participation Rate & Percentage of Villages with Primary or Middles School". In combine Maharashtra data the Beta values in Multiple Regression Models pointed out that Male Literacy Rate had the maximum positive effect on female literacy rate. Female work participation had a negative significant effect on female literacy and Schedule Tribe had a positive significant effect on the said variable. In Rural – Urban Maharashtra data it was observed that Male literacy rate had the maximum effect on female literacy rate, followed by rural or urban code and Mean Number of Births. While the earlier two had positive effect on the literacy rate of female, the third factor, fertility had a negative effect on female literacy. As Code was found to be significant, it indicated that Multiple Regression Analysis should be run separately in Rural as well as Urban Area.

In Rural areas Male Literacy Rate, Schedule Tribe and Female Work Participation were the factors which were found to be significant. In urban areas Male Literacy Rate had the maximum effect on female literacy rate followed by Composite Economic Wealth Index and Female Work Participation. In all Models Male literacy rate had the maximum effect on Female literacy rate. Very strange but significant results were obtained, Schedule Tribe was found to have a significant positive effect on female literacy in Combine Model and Female work participation was found to have significant negative effect on female literacy in rural, urban data as well as combine data.

The study gave many suggestions to improve female literacy in the districts of Maharashtra based on the findings of the study.

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