Nonresponse is a major threat to valid inference in sample surveys. In the nonresponse scenario, the driver of successful estimation is the efficient use of auxiliary information. Various approaches to accounting for the negative effects of nonresponse are proposed in the literature, with weighting the units in the response being one alternative. This thesis studies weighting for units in the response set by calibration approach. It is here suggested to combine two alternative weighting calibration estimators by means of two-step estimation and suggested a variance estimator for the resulting estimator. The thesis motivates the use of sample level auxiliary information for estimation in the first step and the use of population level is suggested for the second step. The thesis also introduces the use of principal components multivariate approach in estimation in surveys with nonresponse.