If the issue of variance of factory productivity is not treated with the seriousness it deserves and its huge variations brought under control, KTDA should forget its continued management of the smallholder tea factories in Kenya a situation that may spell death to the Agency. The main aim of the study was to establish the impact empowerment of factory supervisors has on productivity a case of KTDA managed factories. The study adopted a descriptive research design aimed at establishing the effects of supervisor empowerment on productivity a case of KTDA managed factories. The target population was the factory management and supervisor staff from the KTDA managed factories. The main focus was the management and supervisor staffs that were involved in the tea manufacturing process at the factory. From the population of 342 possible respondents, a sample of 30% was chosen using stratified random sampling. The researcher therefore examined a sample of 103 respondents drawn from the population of 342 comprised of the supervision and management staff working in the selected KTDA managed factories. The data was collected by use of structured questionnaires. The questionnaire was hand delivered where possible or sent by post with an attached self-explanatory introductory letter. Data was analyzed quantitatively by describing and summarizing the data using descriptive statistics to enable the researcher to give meaning to the distribution of scores or measures using statistics. Qualitative data was analyzed in a systematic way in order to come up with some useful conclusions and recommendations. The researcher used Pearson's product moment correlation to test for relationship between the dependant and independent variables. The Pearson's coefficient correlation shows that there was positive correlation between supervisors' empowerment and organization culture, supervisor training, corporate governance and supervisor performance measurement. From the findings the study concludes that organization culture affects supervisors' empowerment towards influencing productivity in the factory. The study recommends that since organization culture affects supervisors' empowerment towards influencing productivity in the factory to a great extent, the factories should strengthen various aspects of its culture including loyalty, personal commitment, extensive socialization, teamwork, self-management with a lot of social influence, rules, standard operating procedures, and hierarchical coordination and that an organization characterized with high levels of risk taking and creativity.