Stray dogs" causes human health, animal health, road accidents and nuisance, wake residents at night, disturb rubbish, frighten children, and cause complaints to municipalities. It is against this backdrop the study seeks to investigate the factors influencing level of stray dog population in Kenya. According to the researcher knowledge no such study has been done before more so in Kenyan context. Thus the research will be filling this research gap on the effectiveness of government measure in control of stray dog population in Kenya. The study general objective was to investigate the factors influencing the level of stray dogs" population in Dagoretti Constituency Nairobi County. The researcher used descriptive survey design. The survey target population was the government veterinary, health officers and households in Dagoretti constituency in Nairobi County. The researcher selected randomly a sample of 30 governments veterinary and health officers Dagoretti constituency in Nairobi County. The researcher further used purposive random sampling to select 65 household head in Dagoretti constituency in Nairobi County. Data was collected from primary sources. The collection of primary data was done using structured questionnaire. The data was edited then; cording and tabulation will be carried out using statistical package for social scientist (SPSS). The study concluded that it can be concluded that there are several factors that affect level of stray dogs" population in Kenya. Reproductive control has been identified as the most contributing factor that affect stray dog"s population in Kenya. Lack of enough level of education has also been identified as another factor where by dog owners lack the technical knowhow on how to deal with stray dog"s population. Registration of dogs has been deemed important in order to give the total population of stray dogs in Kenya and come up with a strategy on how to manage them. Dog breeders and dealers were found to have no specific associations that encourage a commitment to the raising and selling of physically and psychologically healthy dogs. The study also found that stray dogs" population affects the community with them transmitting dangerous diseases to the community. These factors were identified as very crucial factors that affect stray dogs" population In Kenya. The researcher recommends that dog breeders and dealers should put in place adequate reproductive control in order to get them to ensure that stray dogs" population is controlled. Also dog owners should ensure that they have adequate level of education in dealing with stray dogs" population. This will ensure that high quality dog breeds are produced. In addition to this the researchers recommends that there should be a proper method of registration of dogs in order to keep an updated number of stray dogs" population. Dog breeders and dealers are advised to join associations in order to ensure that there is a set of regulations that is followed among the dog dealers. The researcher also recommends that the effects of stray dogs" population to the community should be well addressed as this may pose a great threat to the community due to transmission of dangerous diseases.