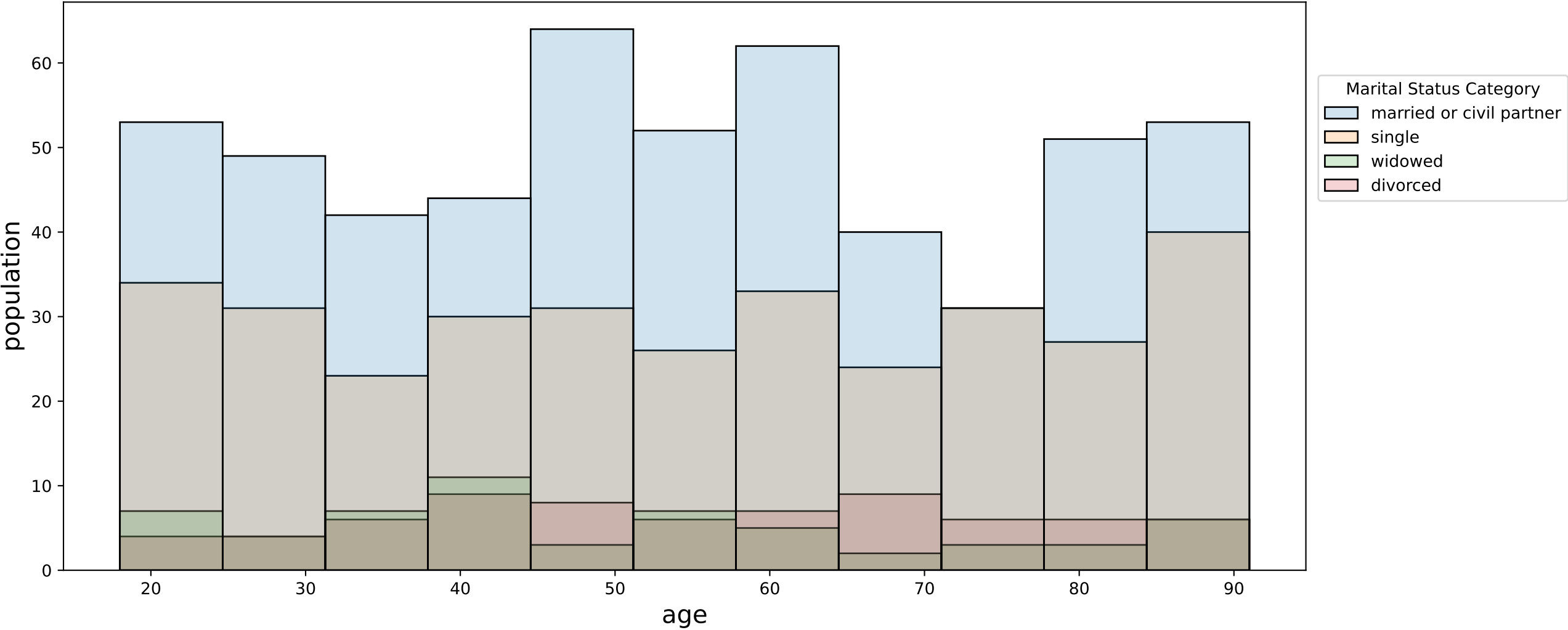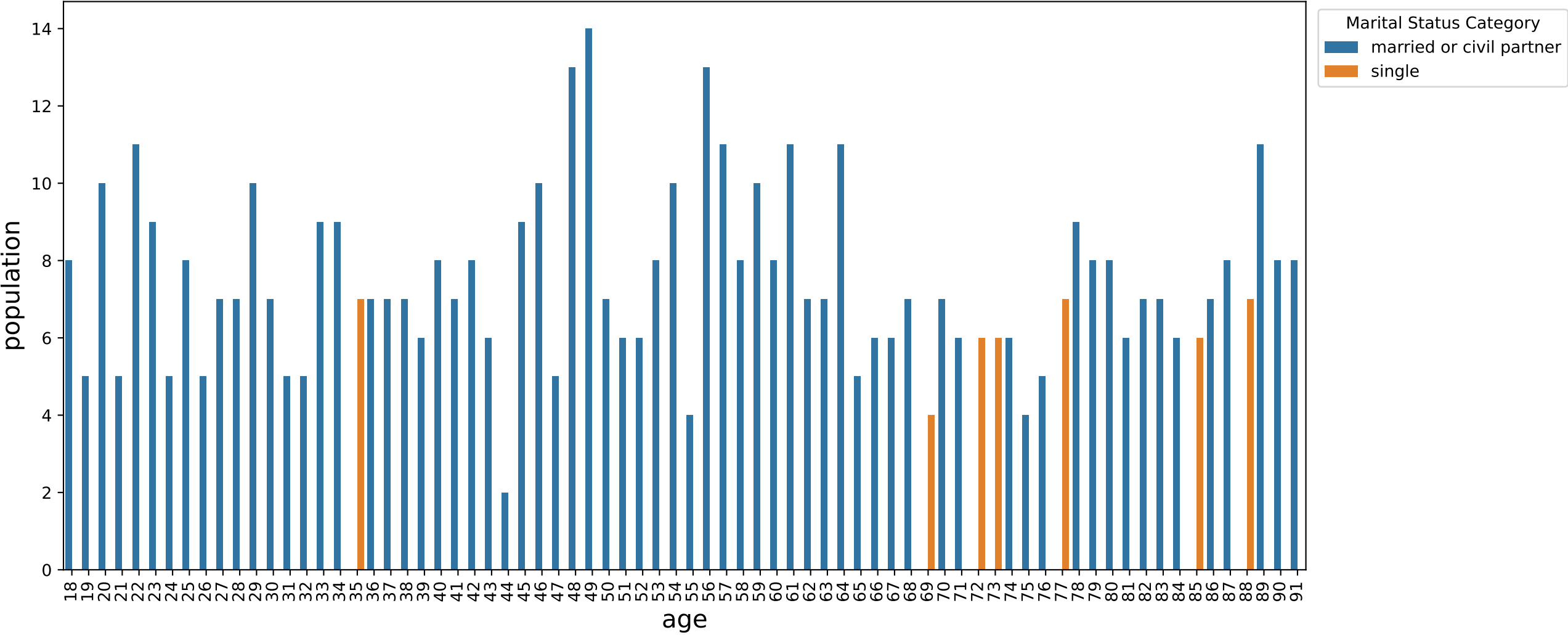Please refer to the jupyter notebook for more info.