Example 3: Communicating the effects of noise on frequency count data

*Background information for statistics producers*

*For the proper protection of the tables it is important that some parameters of the perturbation method remain secret. This concerns the individual record keys and the table defining the transition probabilities (the pTable). What can be communicated is the variance introduced by the cell key method. As this is a rather abstract concept for several users, a feeling for the noise added can be given through indicators suggested by Enderle and Vollmer (2019) for German university statistics.*

*Please note that if several data collections for the same population are protected with the cell key method, it is good to coordinate the parameter settings so that potential intruders cannot derive information from the differences between the information provided in different data collections.*

1. The variance introduced by the noise added for protection
2. The mean absolute difference between original and protected frequency counts is less than *x.*
3. At least 90% of the frequency counts stay unchanged or deviate from the original frequency count by at most *x*.
4. For at most 5% of the frequency counts, the deviation is *x* or more.
5. For at most 0.5% of the frequency counts, the deviation is *x* or more.