Homework 1

Research Methods, Spring 2026

Answer Key

My answers to the homework questions are described below. Note that code and data are available here. Enjoy!

Building the Data

Answer the following based on our initial, simplified dataset of enrollments, plan types, and service areas:

1. Provide a table of plan types in 2015.

Table 1: All plan types in 2015

plan_type	Count
Medicare Prescription Drug Plan	989936
Local PPO	906543
HMO/HMOPOS	508649
Regional PPO	25783
PFFS	16663
Employer/Union Only Direct Contract PDP	9581
1876 Cost	8439
Medicare-Medicaid Plan HMO/HMOPOS	7312
National PACE	1949
MSA	254
HCPP - 1833 Cost	9

2. Remove all special needs plans (SNP), employer group plans (eghp), and all "800-series" plans. Provide an updated table after making these exclusions.

I remove the relevant plans just by applying the relevant filters described above. The resulting plan types with these exclusions are presented in Table 2.

Table 2: Revised plan types in 2015

plan_type	Count
Medicare Prescription Drug Plan	310801
HMO/HMOPOS	89772
Local PPO	41759
Regional PPO	14883
1876 Cost	7583
Medicare-Medicaid Plan HMO/HMOPOS	7312
PFFS	4048
National PACE	1949
MSA	198

3. Now calculate the average enrollments by plan type in 2015, using the same exclusions as above.

To do this, I collapse the data to the plan-type level and compute (i) the number of plan–county observations and (ii) the mean `avg_enrollment` across the counties in which each plan type operates. The resulting table is presented in Table 3.

Table 3: Enrollments by plan type in 2015

plan_type	Count	Avg_Enrollments
Local PPO	38574	331.000000
HMO/HMOPOS	33236	756.000000
Regional PPO	6797	189.000000
1876 Cost	4872	252.000000
PFFS	2726	94.000000
National PACE	902	144.000000
Medicare-Medicaid Plan HMO/HMOPOS	418	989.000000
MSA	183	58.000000