

Biostatistics 517

Survey Sampling

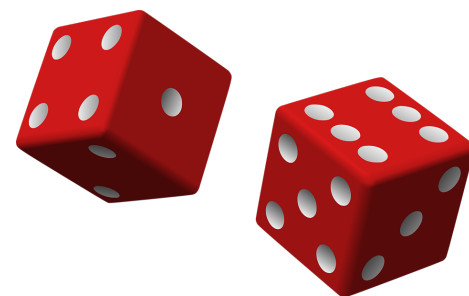
Jim Lepkowski, PhD

Professor & Research Professor *Emeritus*

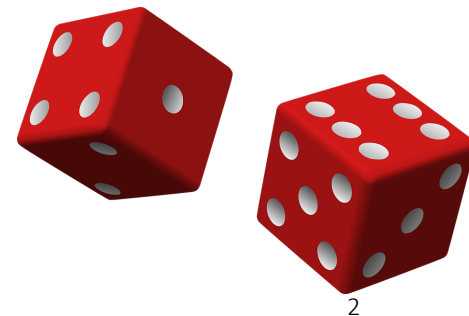
Tuba Suzer-Gurtekin, PhD

Assistant Research Scientist

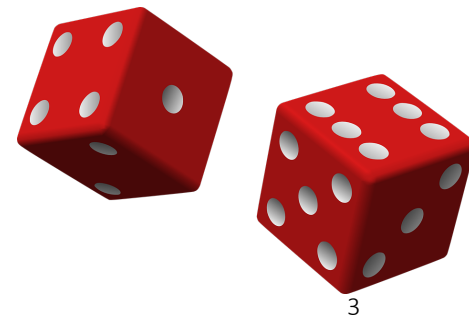
Institute for Social Research, University of Michigan



- **Unit 1: Preliminaries**
 - Lecture 1: Course overview
 - Lecture 2: Statistical inference
 - Lecture 3: Survey sampling inference
 - Lecture 4: Research design & surveys
 - Lecture 5: What is a survey?
 - Lecture 6: Why sample?
 - Lecture 7: Why randomize?
 - Lecture 8: What happens when selection is randomized?
 - Lecture 9: How can survey quality be evaluated?
 - Lecture 10: What kind of things can we sample?
- **Unit 2: Survey Lifecycle & Survey Error**
- **Unit 3: Mere Randomization**
- **Unit 4: Saving Money: Simple Cluster Sampling**
- **Unit 5: 2-stage Simple Cluster Sampling**
- **Unit 6: Designing Simple Cluster Samples**
- **Unit 7: Becoming More Efficient: Stratified Random Sampling**



- People
- Records
- Networks
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 - **Lecture 10: What kind of things can we sample?**
- Unit 2: Survey Lifecycle & Survey Error
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OJ/OC CRDSA Cohort 19

Biostatistics 517: Methods of Survey Sampling

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Seq. No.	ID	Division	Sex	Rank	Salary
1	38516070	Eng&Prof	m	3	\$88
2	25428686	Medicine	f	3	\$45
3	30318994	Medicine	m	3	\$57
4	35886147	Medicine	m	1	\$133
5	41416693	Eng&Prof	f	2	\$71
6	60055684	Lit&SocSci	m	1	\$113
7	76731882	Medicine	f	3	\$65
8	51765248	Biol&Sci	m	3	\$47
9	26471240	Lit&SocSci	f	3	\$39
10	25864673	Biol&Sci	m	1	\$74
11	23049573	Medicine	m	1	\$88
12	12928113	Lit&SocSci	m	1	\$62
13	13594590	Lit&SocSci	m	1	\$49
14	20820530	Medicine	m	3	\$88
15	52026919	Medicine	m	1	\$181
16	59283042	Eng&Prof	m	3	\$63
17	37941753	Medicine	m	2	\$94
18	32498845	Eng&Prof	m	1	\$91
19	42120123	Medicine	m	1	\$60
20	83562743	Eng&Prof	m	3	\$55
21	39834280	Biol&Sci	m	2	\$55
22	60683602	Medicine	f	1	\$106
23	18186559	Medicine	m	1	\$116
24	20110594	Medicine	m	3	\$79
25	61862981	Lit&SocSci	m	1	\$61

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	<i>1-5</i>	<i>6-10</i>	<i>11-15</i>	<i>16-20</i>	<i>21-25</i>
<i>1</i>	57982	03250	09488	12085	38325
<i>2</i>	34104	88576	32549	09603	73860
<i>3</i>	01943	29119	72315	70334	98029
<i>4</i>	25329	02138	52670	11692	03654
<i>5</i>	23869	85541	29993	57693	84597
<i>6</i>	69419	03843	33691	19541	80307
<i>7</i>	14078	76539	08538	17888	65481
<i>8</i>	14339	07381	13958	46562	75860
<i>9</i>	97670	49015	97498	01260	63189
<i>10</i>	15279	11006	82780	74184	34105
<i>11</i>	97947	01993	12603	63485	16937
<i>12</i>	00631	55073	73183	05961	16402
<i>13</i>	30246	12514	24792	46736	61024
<i>14</i>	74016	75832	78113	18374	78851
<i>15</i>	53669	78559	66231	29085	78506
<i>16</i>	98280	13316	23734	63720	50355
<i>17</i>	32396	30527	10030	69065	87877
<i>18</i>	05708	99540	11289	09030	94001
<i>19</i>	04004	49911	47941	81165	14505
<i>20</i>	84424	61863	81655	87420	76149
<i>21</i>	84546	16063	09051	31787	57235
<i>22</i>	76882	00300	45868	17098	53385
<i>23</i>	98169	25789	99043	73890	35327
<i>24</i>	33621	78638	27009	29610	20171
<i>25</i>	61507	79038	38331	70320	73347

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No.	Seq. No.	Income	
1	341	42	
2	19	60	
3	253	134	
4	238	80	
5	140	148	
6	143	57	
7	152	37	
8	6	113	
9	302	89	
10	323	81	
11	57	64	
12	40	60	
13	336	41	
14	209	44	
15	83	109	
16	346	106	
17	184	87	
18	85	47	
19	129	102	
20	226	71	
Sum		1572	
Mean		78.6	(74.07)

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No.	Date	Time	Reference	Category	Subcategory	Business	Additional information	Amount
1	20160617	13274200	32016172018491	Business services	Advertising services	NA	5556128901	\$833.24
2	20160617	13274203	32016172018492	Merchandise & supplies	Book stores	NA	5552697691	\$26.52
3	20160617	13274210	32016172018493	Other	Utilities	NA	5558518280	\$91.95
4	20160617	13274211	32016172018494	Business services	Mailing & shipping	NA	5554888725	\$17.70
5	20160617	13274211	32016172018495	Business services	Contracting services	NA	5558398606	\$150.66
6	20160617	13274217	32016172018496	Merchandise & supplies	General retail	NA	5552808987	\$80.14
7	20160617	13274218	32016172018497	Merchandise & supplies	Music & video	NA	5558102117	\$59.27
8	20160617	13274220	32016172018498	Merchandise & supplies	Music & video	NA	5557495061	\$85.04
9	20160617	13274230	32016172018499	Business services	Health care services	NA	5559321864	\$624.80
10	20160617	13274236	32016172018500	Restaurant	Restaurant	NA	5551869731	\$56.32
11	20160617	13274239	32016172018501	Merchandise & supplies	Groceries	NA	5554914804	\$82.33
12	20160617	13274240	32016172018502	Business services	Health care services	NA	5552682932	\$842.16
13	20160617	13274241	32016172018503	Business services	Health care services	NA	5551606583	\$971.30
14	20160617	13274242	32016172018504	Fees & adjustments	Fees & adjustments	NA	5558979830	\$73.57
15	20160617	13274249	32016172018505	Business services	Contracting services	NA	5558855254	\$128.74
16	20160617	13274251	32016172018506	Entertainment	Sports events	NA	5557903363	\$122.68
17	20160617	13274258	32016172018507	Travel	Lodging	NA	5554231047	\$241.15
18	20160617	13274266	32016172018508	Other	Miscellaneous	NA	5551339259	\$42.92
19	20160617	13274274	32016172018509	Business services	Health care services	NA	5555502637	\$1,071.25
20	20160617	13274282	32016172018510	Merchandise & supplies	Groceries	NA	5551386371	\$30.51
21	20160617	13274287	32016172018511	Entertainment	Other entertainment	NA	5551508827	\$28.13
22	20160617	13274296	32016172018512	Merchandise & supplies	Department stores	NA	5554661994	\$194.13
23	20160617	13274302	32016172018513	Other	Utilities	NA	5554438826	\$111.73
24	20160617	13274306	32016172018514	Business services	Health care services	NA	5559722356	\$694.48
25	20160617	13274310	32016172018515	Merchandise & supplies	Appliance stores	NA	5553447554	\$294.00

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Sample person	Number of living siblings	Ever been told by MD have diabetes?	Number of cases of diabetes in network	Total number of cases	Person weight	Network size
1	0	0	0	0	100	1
2	2	0	0	0	100	3
3	3	0	1	1	200	4
4	1	0	1	1	200	2
5	5	0	1	1	100	6
6	0	1	0	1	100	1
7	1	0	0	0	200	2
8	2	0	0	0	100	3
9	2	1	1	2	100	3
10	1	0	0	0	100	2
	17	2	4	6	1300	27

Next lecture ...

- Unit 1: Preliminaries
- **Unit 2: Survey Lifecycle & Survey Error**
 - Lecture 1: Survey lifecycle & error
 - Lecture 2: Measurement error
 - Lecture 3: Coverage error
 - Lecture 4: Sampling error
 - Lecture 5: Nonresponse error
 - Lecture 6: Data collection & processing error
- Unit 3: Mere Randomization
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