

MIS 0855 Data Science (Section 005) – Fall 2016
Answer Sheet for Assignment #1 – Data Analysis Plan

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Part 1: Develop Hypotheses

| Hypothesis (1 sentence) | Rationale (2-3 sentences) |
|---|--|
| Hypothesis 1: A Philadelphia neighborhood with more bike riders has a lower obesity rate. | When more people bike, they are exercising more and burning more calories. |
| Hypothesis 2: A neighborhood with more condom distribution sites has a lower obesity rate. | When people are able to get condoms easier they are more likely to use them which leads to them being more active. |
| Hypothesis 3: When a neighborhood in Philadelphia has more bike lanes, there is less gun violence. | When there are more bike lanes, bikers don't get as mad at car drivers and are less likely to shoot them. |
| Hypothesis 4: When there are more security business security cameras in Philadelphia, there is less gun violence. | People are less likely to use guns around stores that have cameras because they don't want to get caught. |
| Hypothesis 5: When there are more condom distribution sites Philadelphia, then there is less gun violence. | When have more access to condoms, then are less likely to get angry if they have a surprise pregnancy. |

Part 2: Identify Data Sets

| Data set | Name | URL | Instructions (if URL is not available) |
|-----------------|---------------------|---|---|
| 1 | Bike network | https://www.opendataphilly.org/dataset/bike-network | |
| 2 | Adult Obesity | http://www.phila.gov/health/pdfs/Philadelphia_obesity_chronic_disease812.pdf | |
| 3 | Condom Distribution | https://www.opendataphilly.org/dataset/condom-distribution-sites | |
| 4 | Gun Violence | https://www.opendataphilly.org/dataset/shooting-victims | |

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|---|------------------|---|--|
| 5 | Business Cameras | https://www.opendataphilly.org/dataset/biz-security-camera-program-grants | |
|---|------------------|---|--|

Part 3: Mapping Data to the Hypotheses

| Hypothesis | Source |
|--|--------|
| Hypothesis 1: A Philadelphia neighborhood with more bike riders has a lower obesity rate. | 2 |
| | 1 |
| Hypothesis 2: A neighborhood with more condom distribution sites has a smaller STD rate. | 3 |
| | 2 |
| Hypothesis 3: When there are more bike lanes, there is less gun violence. | 1 |
| | 4 |
| Hypothesis 4: When there are more security business security cameras, there is less gun violence. | 5 |
| | 4 |
| Hypothesis 5: When there are more condom distribution sites Philadelphia, then there is less gun violence. | 3 |
| | 4 |