MTH102
Engineering Mathematics II
2016-2017 Academic Year
Semester 2

Giovanni Merola

21 February 2018

Sources of data: Exercise (3 minutes)

Want to find out:

1. customer satisfaction?
2. Is a new drug useful?
3. Population in Italy
4. Import of goods in China from Viet Nam in USD
5. Viewers rating of new “Star Wars” film
6. Percentage of XJTLU students who come with an e-bike

Choices

A. Observational studies
B. Surveys
C. Experiments
D. Distributed by organisation
E. Commercial or free

Sources of data: exercise solutions

Want to find out:

1. Customer satisfaction Survey (opinion)
2. Is a new drug useful? Experiment (need to isolate samples)
3. Population in Italy Italian statistical office (official data) Why not wikipedia?
4. Import of goods in China from Viet Nam in USD Chinese statistical office or Vietnamese Chinese statistical office
5. Viewers rating of new “Star Wars” film Internet or survey
6. Percentage of XJTLU students who come with an e-bike observational study/ survey

A. Observational studies
B. Surveys
C. Experiments
D. Distributed by organisation
E. Commercial or free

Types of data: problem (3 minutes)

1. Telephone number
2. Intelligence quotient (IQ)
3. Education level (elementary, highschool, ..)
4. First names

Nominal
Ordinal
Interval
Ratio

Types of data: problem answers

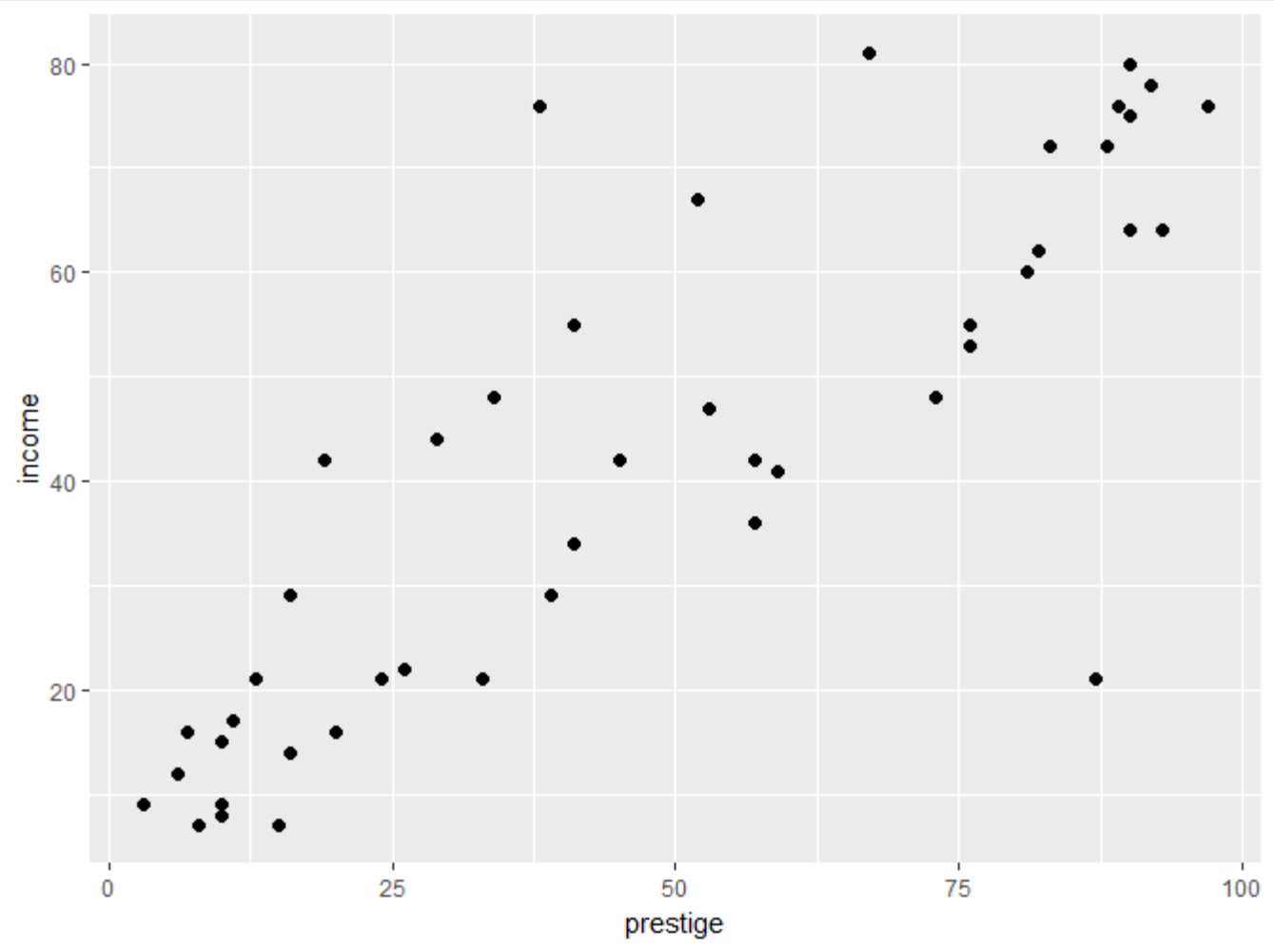
Nominal
Ordinal
Interval
Ratio

1. Telephone number Nominal
2. Intelligence quotient (IQ) Interval (can’t measure 0 IQ)
3. Education level (elementary, high school, ..) Ordinal
4. First names Nominal

1.1 Data and its Representation: problem (3 minutes)

Comment this scatter plot of income versus job prestige

job name	income	prestige
accountant	62	82
pilot	72	83
architect	75	90
author	55	76
.	.	.
.	.	.
.	.	.



1.1 Data and its Representation: solution

There is a strong positive linear relationship (income increases with prestige of the job).

However, some points are far away from the line (they are outliers)