香港浸會大學
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Data Visualization

JOUR7280/COMM7780

Big Data Analytics for Media and Communication

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Data Types

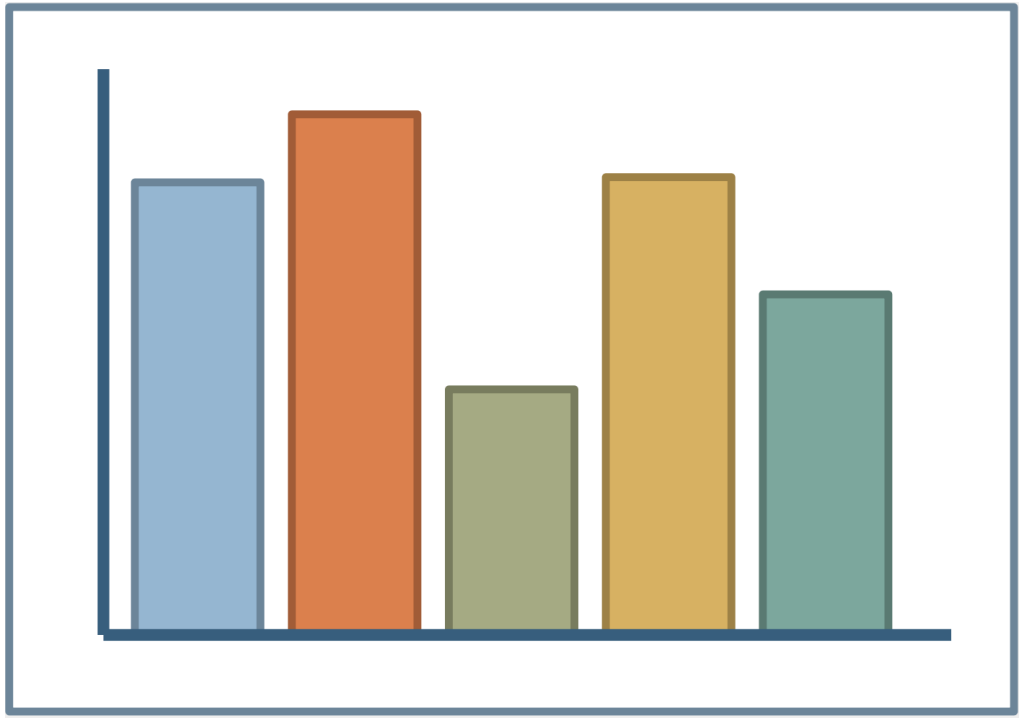
	Discrete (no between values)	Continuous (values between)
Ordered (values are comparable)	**Ordinal,** e.g. size: S,M,L,XL,… **Quantitative,** e.g. counts: 1,2,3,…	**Fields,** e.g. altitude, temperature
Unordered (values not comparable)	**Nominal,** e.g. shape: ☐○Δ **Categories,** e.g. nationality	**Cyclic values,** e.g. directions, hues

Data as Variables

- What's a variable?
  - A variable is an object, event, idea, feeling, time period, or any other type of category you are trying to measure.
  - There are two types of variables, independent and dependent.
- What's an independent variable?
  - An independent is a variable that stands alone and isn't changed by the other variables you are trying to measure.
- What's a dependent variable?
  - A dependent variable is something that depends on other factors.
- (Independent variable) causes a change in (Dependent Variable) and it isn't possible that (Dependent Variable) could cause a change in (Independent Variable).

Bar Chart

Quantitative dependent variable

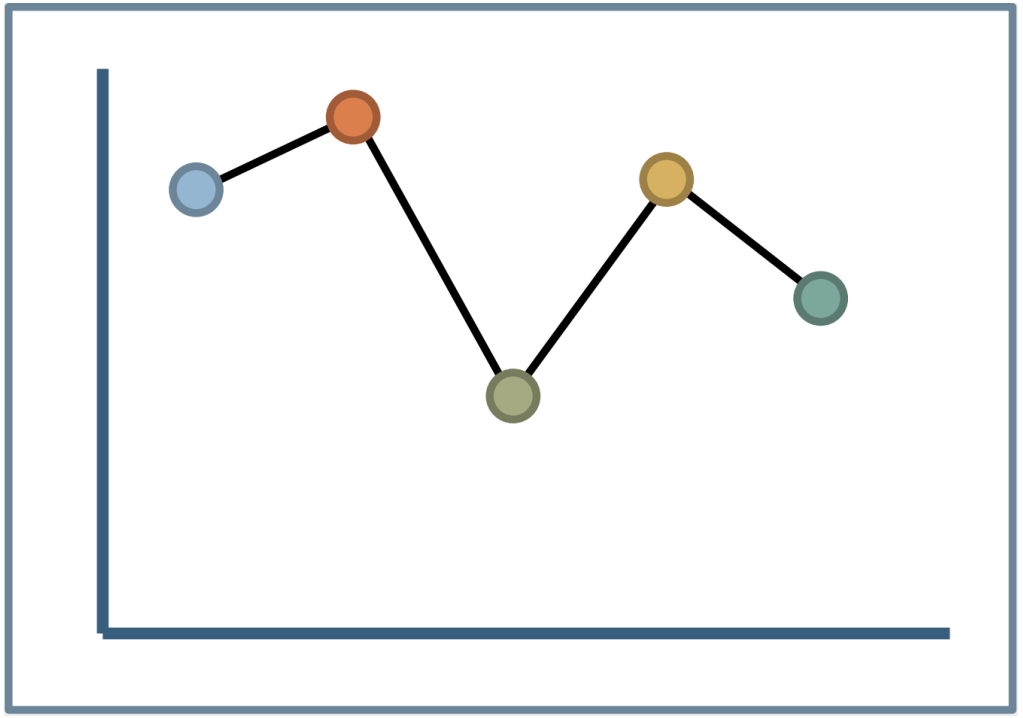


Discrete/nominal independent variable

Benefits from both position (top of bar) and length (size of bar)

Line Chart

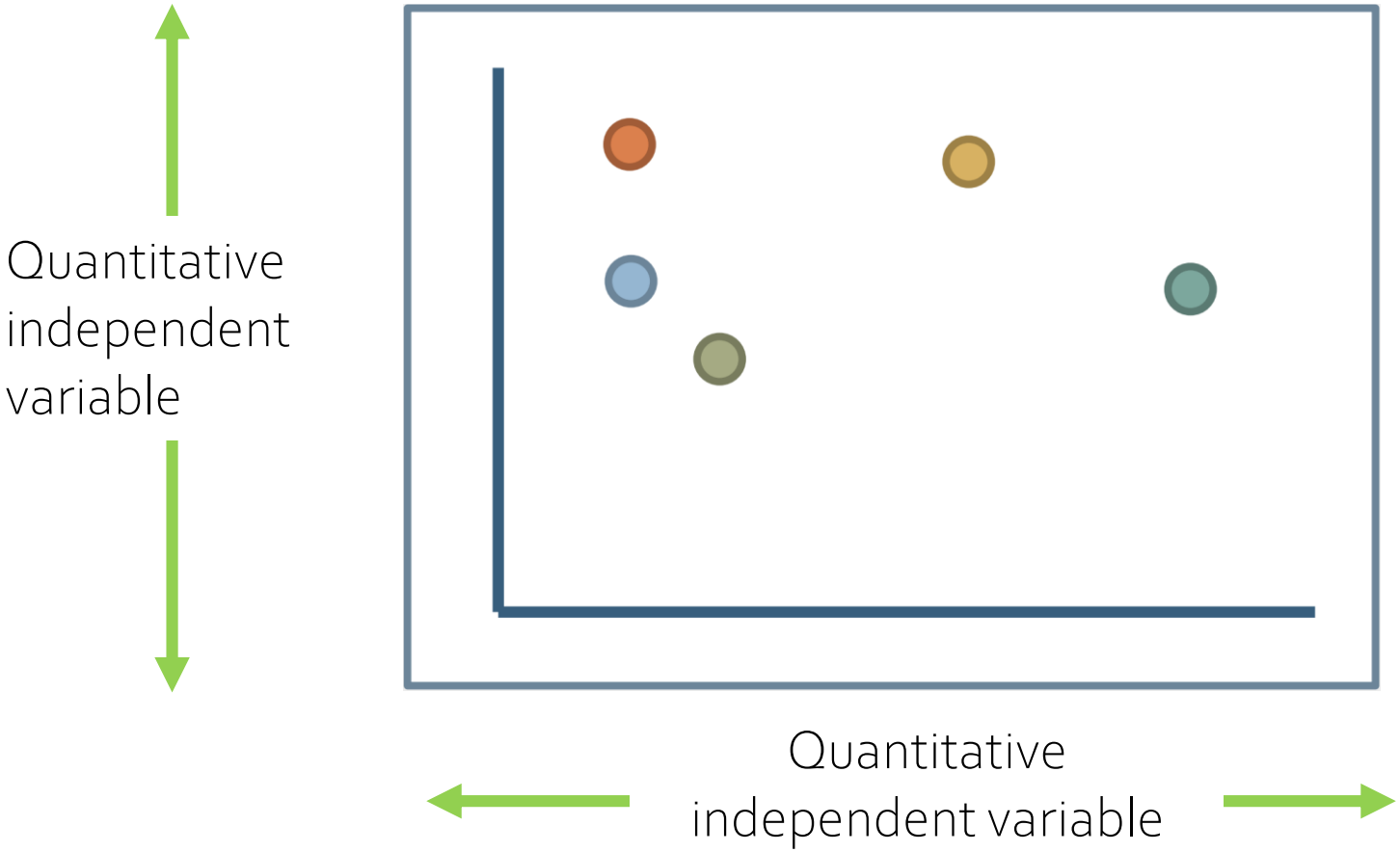
Quantitative continuous dependent variable



Quantitative continuous independent variable

Benefits from position but not length

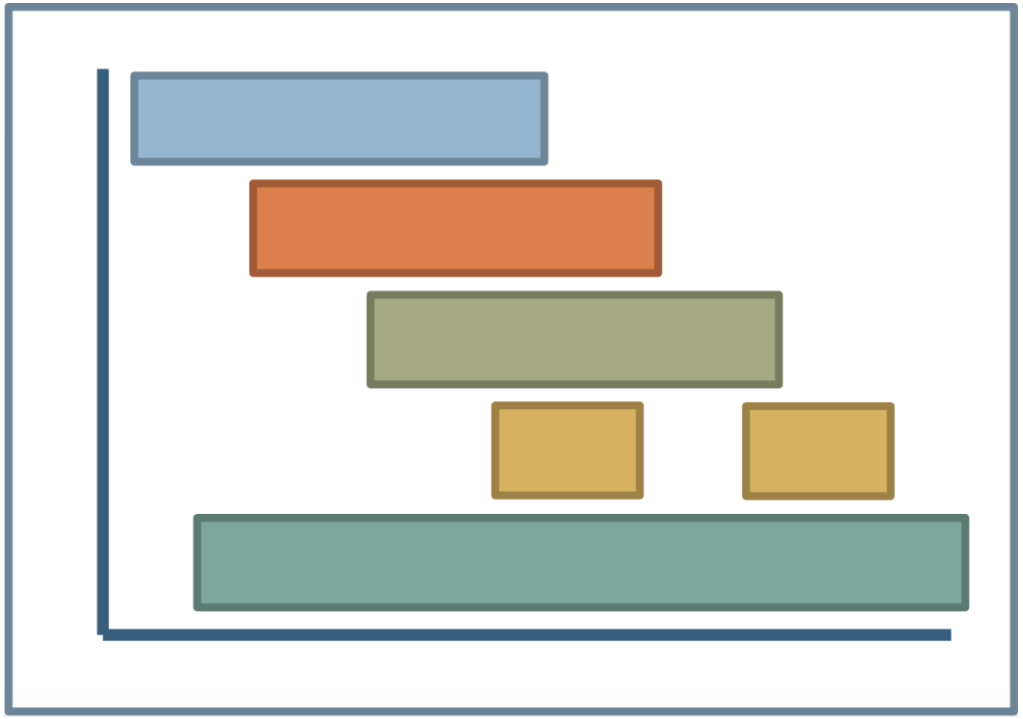
Scatter Plot



Relies mostly on position, but clusters also yield density

Gantt Chart

Discrete/nominal independent variable



Benefits from both position and length

Quantitative independent variable

Table

Discrete/nominal independent variable

Discrete/nominal independent variable

Benefits from position only

(notice the lateral inhibition flashing?)

What to Use?

Dep.	Quantitative Continuous	Bar	Line
	Quantitative Discrete	Bar	Bar
Ind.	Quantitative Continuous	Gantt	Scatter
	Nominal or Q. Discrete	Table	Gantt
		Nominal or Q. Discrete	Quantitative Continuous
		Independent	

Histogram

- Ages: 1, 3, 27, 32, 5, 63, 26, 25, 18, 16, 4, 45, 29, 19, 22, 51, 58, 9, 42, 6

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Buckets	Number

Histogram

- It is similar to a Bar Chart, but a histogram groups numbers into ranges .
- The height of each bar shows how many fall into each range.
- And you decide what ranges to use

Thank You