

# **Marketing Research** and **Analytics**





# Learning objectives

- Comparison between groups
- Tables
- Visualizations
- Tests

### **Questions & Dataset**

- Marketing analytics often investigates differences between groups
  - Do men or women subscribe to a service at a higher rate?
  - Which demographic segment can best afford a product?
  - Does region A perform better than region B?
  - Did same-store sales increase after a promotion?
- Answers help to
  - understand the market
  - target customers more effectively
  - evaluate the outcome of marketing activities such as promotions
- Data from a consumer segmentation project
- N=300
- Variables:
  - Age, Gender, Income, # children
  - own or rent a home
  - subscribe yes/no
  - Customer segment: Suburb mix/Urban hip/Travelers/Moving up

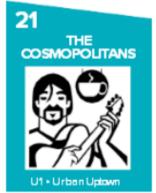
#### 21 The Cosmopolitans



#### **Upscale Younger Family Mix**

Age 25-44 Homeowners Moderate IPA Below Average Tech

Educated and upscale, The Cosmopolitans are urbane couples in America's fast-growing cities. Concentrated in major metro areas, a vibrant social scene surrounds their older homes. These residents tend to live an eco-friendly lifestyle and enjoy eating at organic/health food establishments.



Owns a BMW • Eats at organic/health food restaurants • Shops online at Crate & Barrel • Attends PAC-12 sports events • Visits Europe • Watches the Video Music Awards • Listens to Album Adult Alternative

<u>Lifestage Group: Y1- Midlife Success (Younger Years)</u>

Social Group: U1- Urban Uptown (Urban)

Source: 2022 Claritas, LLC (2022)

# Comparing groups: statistical tests

- Visual inspection and tables let us discover differences in groups
- "It looks different, but is it really different?"
- Inferential statistical procedures:
  - Testing frequencies: quisq.test()
  - Testing observed proportions: binom.test()
  - Testing group means: t.test()
  - Testing multiple group means: anova()

## Confidence intervals and significance

- Definition of a 95% confidence interval:
  - It is the range of possible estimates that we would expect to see 95% of the time if we repeatedly estimate a statistic using random samples of the same sample size under the assumption that the true value in an (almost) infinite population is the same as our current estimate
- Confidence intervals do not tell us how confident we are in the answer
- Non significant results:
  - Evidence for the result is weak and should not be interpreted
  - More data might be collected
- Significant results:
  - Significance is no measure for the (practical) importance of the result