DATALITERACY
LEARN THE LANGUAGE OF DATA

16 Chart Reading Tips

FROM *LEARNING TO SEE DATA: HOW TO INTERPRET THE VISUAL LANGUAGE OF CHARTS*

By Ben Jones, Co-Founder & CEO of Data Literacy

- [ ] **1. DATA:** Consider what data is shown in the display, and what relevant data might not be shown.
- [ ] **2. ENCODINGS:** Figure out which variables in the data encode which visual channels in the chart.
- [ ] **3. AXES:** If there are continuous axes, notice where they start and stop.
- [ ] **4. QUESTIONS:** Ask yourself whether the chart's encodings and design help you answer your most important questions.
- [ ] **5. COMPLETENESS:** If the chart expresses completeness or fullness, make sure the segments are *MECE:* mutually exclusive and collectively exhaustive.
- [ ] **6. TIME DIRECTION:** If a chart expresses change over time, check what direction corresponds with increasing time. It's likely left-to-right, but might not be.
- [ ] **7. VALUE DIRECTION:** If a chart expresses value or worth, check which direction corresponds with "more", "better", or "improvement". It's likely up, but might not be.
- [ ] **8. TIME PERIODS:** When data shown on a chart has been grouped by time period, verify whether the time periods are all complete, as some of them may only be partially complete.
- [ ] **9. PROMPTING:** Identify what brand new questions the chart prompts in your mind, and consider what further information is needed to answer them.
- [ ] **10. VARIETY:** When using charts to gain understanding about a topic, try looking at the same quantities and categories using a variety of different encodings and arrangements.
- [ ] **11. AGGREGATIONS:** Consider how the data in the chart has been aggregated (sum, average, median, etc), and whether it's suitable to answer your most important questions.
- [ ] **12. OUTLIERS:** If there are interesting values in the chart such as outliers, be sure to ask for labels or annotations to help you identify them.
- [ ] **13. DEFINITIONS:** Find out the operational definitions of the variables shown in the chart, learn how the records were collected, and consider what potential caveats these details introduce.
- [ ] **14. MODELS:** If a model like a regression line has been applied to the data in the chart, determine what type of model it is, and how well it fits the data.
- [ ] **15. LEGENDS:** Pay close attention to the different legends in the chart and see how they reveal encodings other than position such as size, color, or shape.
- [ ] **16. GIVE-GET RATIO:** Charts require readers to invest varying amounts of time to learn their encodings. The value of a chart is in the ratio of what you get from it to what you must first give.

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