

8/18/2021
7.30pm

Webinar!

Case Studies on "Choosing an Effective Visual"

Visualizations:

Consider data first → data (huge) → bring data into story.
Story → how → (use words - paragraph - story)
attention of audience? → won't be much effective

Picture should be better instead of words.

↓
grab audience attention

Data Analyst → explore & understand data. → explain story.

→ Understand and interpret data.

Visuals → interpret data better.

Present good visualization to present data.

1. Visualization context.

- who, what, how.

who → your audience → to whom you want to consider your point of view.
→ how we can identify audience?

Example: Improve sales in company.

You → audience (senior of company, HR manager).

Presentation → sales.

Narrow → audience (more number).

↓
how? → Be specific about data.

→ data related to,

→ which data you are going to present.

→ action

→ who has to take action

what → after presentation

→ identify specific decision-makers.

→ Effectively → whom you are going to present.
(audience).

After identifying audience → what actions they have to do.

How?

→ how we can present your view?

Visualizations (how part).

Select best visualization

(present our views), etc. → good point

Visualization chart types. - choose best chart → to convey our point

Based on data

choose to better reflect our message

Taxonomy → classification or categorization

(5 categories) → each chart type.

- Comparing
- Arranging
- Hierarchies
- Showing changes over time
- Plotting connections, relationships
- mapping spatial data.

Topic: "Choosing an effective visual" → Case Study

Case Study 1

Number of meals served each year

Meals served over time

Campaign Year Meals Served.

2010	2010	not available
2011	2011	40,189
2012	2012	127,020
2013	2013	166,193
2014	2014	159,115
2015	2015	202,102
2016	2016	232,897
2017	2017	277,912
2018	2018	205,350
2019	2019	233,389
		288,797

what visual could you create from the given data?

Information of company → meals served each year.

Observations (from data)

1st column → type of data → quantitative ~~value~~ interval.

2nd column → → quantitative ~~value~~ (magnitude).

Data - 1st column → increasing on regular intervals.

2nd column → increasing, decreasing (not continuous).
Too many changes in data.

What visualize?

Heatmap → observations?

- highlight high frequency.

highlight high colors.

green color → used.

When it is used? We will get interest in 2016 and zero
because of color use.

audience get more attention on 2016, zero.

Advantages

* get maximum value and minimum value.

Disadvantages

* rendering is monochromatic

* relative comparison not possible

* difficult to differentiate values. (color difference)

2010 - 2011 → cannot easily compare.

not identifiable.

Next option

Bar Graph

- how to change data into graph?

1st column → x axis

2nd column → y axis (no. of meals served)

Vertical bars

Visual perspective - identify difference easily b/w bars

- more attractive

- focus of audience grabbed.

Disadvantage - looks up over value frequently.

Space → less

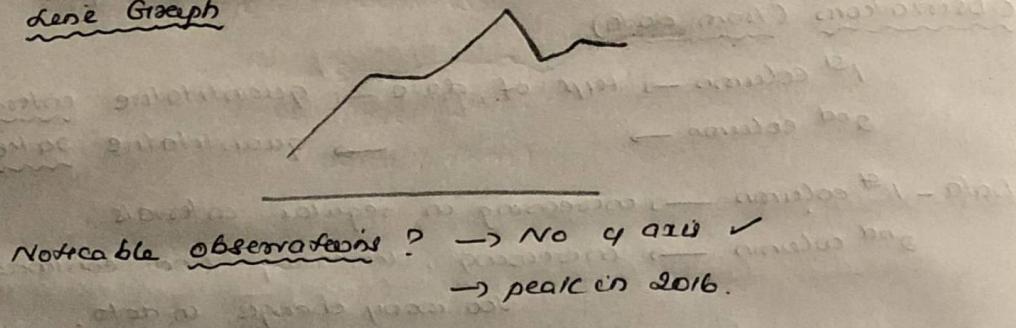
Size → triple

} main disadvantage.

interpret wrongly.

Compress → more helpful.

Demand Graph



No difference in providing y axis or not.

→ labels given - 2010, 2019.

→ y axis (title).

(Labels → do know first and last month
(trend can be identified from
first year to last year))

To plot only data → line chart is the best one.

First case steady → line chart is better option

selection on visual changes based on context (scenario).

Month	Demand
2019-04	29,268
2019-05	28,037
2019-06	21,596
2019-07	26,295
2019-08	35,638
2019-09	22,027
2019-10	23,605
2019-11	26,269
2019-12	24,248
	34,364

Demand and capacity by month.

1st → quantitative method. (monthly)

2nd → quantitative method (project hours)

What is the capacity and demand.

Legend - Capacity.

- Demand.

Horizontal bar graph is used. (cannot visualize more effective)
(cannot message focus).

Another way to represent same data →

① Vertical bars

x axis → month.

y axis → Project hours

horizontal bars — not intuitive.

→ time → placed left to right? Why?

↳ audience attention

start looking from left and reach right.

year, month, quarter → left to right

Project hours → bottom to top

↳ Legend → Shaded = capacity

(useful) empty = Demand

Main disadvantage in this visual?

↳ gap b/w each and every month.

Differentiate → grab more visual attention from audience

(delta of 1 month vs. previous month)

from another month) → which is gap & empty bar?

(confusion).

↓
→ projections, trends and controls

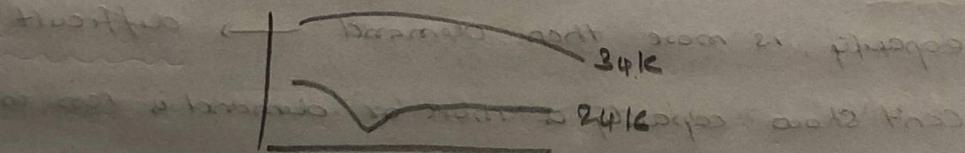
Colors. (reduce confusion).

British tennis & promotion in bet (grey color or yellow)

Another option

(empty bars).

line chart → did



Axis is same as previous one.

* Advantage → grab the audience focus.

Select diff b/w demand and capacity).

Labels also provided (gives updated information).

Recent data (segregated). → labels are provided.

Observations? : differentiated demand & capacity are how?

1. Thickness

2. Colors.

Hermann eye recognizes

- size (1st)
- shape (2nd)
- color (3rd)

Next Visualization

Overlapping Bars

confusion - which position?

legends — shaded → thick manner → opacity increased
empty → no thickness

Demand & capacity → start at 0.

cannot identify what? → unmet demand.

To identify unmet demand? → Critical using this

How is it possible? → Stacked Bars

Stacked Bars

capacity is a subset of demand.

→ shows distribution

representing capacity — bar is colored.

demand → colored.

Calculate unmet demand

— Difference b/w demand and capacity.

Interested in net demand & unmet demand.
(graph helpful).

both → identification is difficult.

capacity is more than demand → difficult.

can't show capacity is more or demand is less in stacked bar.

Another visual.

Dot Plot

Date markings.

shaded — capacity.

empty — demand.

Advantage:

Demand away from capacity → easy to identify difference

→ comparison is easy.

Represent capacity & more than demand.

Capacity & Demand \rightarrow same \rightarrow graph will overlap.

Helpful \rightarrow difference b/w demand & capacity.

Demand chart

- \rightarrow dealing with current demand.
- \rightarrow to see variations b/w diff months.

which type of charts would you prefer?

(chart) - based on scenario

- Dot plot (diff b/w demand and capacity)
- Bar chart (line chart)

(note) - dot towards no end - monthly

(dot charts do pass off scenarios of)

Case Study 3

Affection Rate:

Year Affection Rate.

2019 9.1%

2018 8.2%

2017 4.5%

2016 12.3%

2015 5.6%

2014 15.1%

2013 7.0%

2012 1.0%

2011 2.0%

2010 9.7%

Avg 7.5%

1st col - quantitative interval (regular) decreasing - avg.
2nd col - quantitative ratio

Observations ? Variations in each year.

2010 - more than avg.

Variables?

Scatter Plot

time : x axis

affection : y axis

avg : dotted line

label : rounded.

Advantage

- Identify

- which year attrition rate is more than average.
- " " " less than average

Audience can get date.

Two side

- See max and min

- Attrition rate and restoration rate of each

Line chart

- show trend (percentage rate changes over time).

- Label (avg) on right side. (top tool)

↳ Reason - focus on recent data (2019)

(to compare the avg % attrition rate)

better → avg on right side.

% of increase in that year.

- portion below avg line (shaded)

- maximum % when compared to avg - identified.

Area graph

- to get area confirmation

- represents size of area.

Size from 2010 - 2019. (use area graph).

Bar graph

- compare date of diff years

- highest attrition rate (which year) compared to avg.

- less attrition rate