**Question:** Is there one (or more) question addressed by the visualization? The question is very clear: what is the budget breakdown per category of expenses for an average wedding?

**Data:** Is the data quality appropriate?

***Accuracy***: data are comparable and the values are reasonable according to common judgment.

***Completeness***: data are complete, several categories are reported and we can assume that the list is exhaustive.

***Consistency:*** the percentages of the categories correctly sum to 100%. The meaning of additional costs is unclear.

***Currency:*** data are referred to the year 2020, so it is updated.

***Credibility:*** the source is mentioned at the bottom and they are domain experts. We don’t know how many couples answered the survey.

***Understandability:*** data are understandable, but it is better to report absolute numbers instead of percentages.

***Precision:*** a higher precision, maybe to the first decimal digit, would be more appropriate as many values are equal.

**Visual Proportionality**: Are the values encoded in a uniformly proportional way? Not at all, as the lengths of the bars representing 1% and 2% (or 2% and 3%) are almost equal.

**Visual Utility**: All the elements in the graph convey useful information? Several elements are useless: the colored background, the icons of the categories, the icon at the bottom-right, the textual comment, the rectangle around the title.

**Visual Clarity**: Are the data in the graph clearly identifiable and understandable (properly described)? The usage of direct labeling is appropriate and very clear. However, the meaning of the different colors associated with the bars is not clear.

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**Question:** Is there one (or more) question addressed by the visualization? The question is quite clear: what is the size of wildfires that happened in 2020 in California and how does it compare with the size of wildfires from 2000-2019 and 1932-1999?

**Data:** Is the data quality appropriate?

***Accuracy:*** the values reported are reasonable, the largest wildfire is about 0.9% the area of California.

***Completeness:*** data are not complete, as only the top 20 wildfires are considered.

***Consistency:*** the three different timeframes are of different lengths. The values of 2020 are estimated.

***Currency:*** data were last updated in September 2020, but it was current when the visualization was created.

***Credibility:*** the source is mentioned in the logo and it is trusted because it is a government agency.

***Understandability:*** data are understandable in the USA, but in general it is better to use square kilometers.

***Precision:*** precision is too detailed, apart the size of the first wildfire.

**Visual Proportionality:** Are the values encoded in a uniformly proportional way? The slices of the piechart and the colors of the timeframes are proportional to the size of the wildfires. However, this visualization has serious perceptual problems because it is very difficult to compare areas and shades.

**Visual Utility:** All the elements in the graph convey useful information? Several elements are useless: the image in the background, the CAL FIRE logo, the different shades for each timeframe, the donut around the piechart.

**Visual Clarity:** Are the data in the graph clearly identifiable and understandable (properly described)? The usage of direct labeling is appropriate. The choice of piechart is wrong because the values are not part of a whole. The shades for each timeframe are difficult to interpret. It is not clear that only 20 wildfires are considered.

**Question:** Is there one (or more) question addressed by the visualization? The question is quite clear: what is the average monthly salary of a web developer in Italy by years of experience?

Data: Is the data quality appropriate?

***Accuracy:*** the values are monetary amounts and they are expressed in Euros.

***Completeness***: data are complete, as all the ranges of years of experience are available.

***Consistency***: data are not consistent, as the ranges have different timespans.

***Currency***: unclear, because no date is available.

***Credibility:*** the source is Salary Explorer, data were probably collected with a survey.

***Understandability***: the values probably represent the salaries before taxation, but this is not reported.

***Precision***: precision is appropriate for the task.

**Visual Proportionality**: Are the values encoded in a uniformly proportional way? The lengths of the bars are not proportional to the corresponding salaries because the y axis does not start from zero. In any case, the usage of 3D and the translucent effect make the comparison quite difficult.

**Visual Utility**: All the elements in the graph convey useful information? Not at all: the background, the translucent effect, the shades, the percentages, the green arrows, the flag of Italy can be removed.

**Visual Clarity**: Are the data in the graph clearly identifiable and understandable (properly described)? The numerical values associated with each bar are clearly reported. It is difficult to evaluate proportions and understand the correct value because of the 3D effect and the missing axis. It is stated that the values represent the average monthly salaries. The meaning of the percentages is clear, even if they are useless. Each salary is associated with a range of years of experience

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**Question**: Is there one (or more) question addressed by the visualization? The question is quite clear: what are the top 10 football clubs by market value and how does it compare with their annual revenue and with their agreement to join the European Super League? **Data**: Is the data quality appropriate?

***Accuracy***: the values reported are reasonable, it is not clear how current value is computed.

***Completeness***: data are not complete, as only the top 10 football clubs are considered.

***Consistency***: data should be consistent if current value is computed with the same methodology for all clubs.

***Currency***: data were probably updated in 2020, but this is not reported in the visualization.

***Credibility***: the source is mentioned in the logo and it is a well-known and trusted magazine about finance.

***Understandability***: data are quite understandable, it is not clear that the revenue is annual.

***Precision***: precision is appropriate, but it varies among different clubs (from 0 to 2 decimal digits).

**Visual Proportionality**: Are the values encoded in a uniformly proportional way? The football balls look proportional to the corresponding values. However, this visualization has serious perceptual problems because it is very difficult to compare areas represented by football balls. The balls are not aligned and they are also divided to represent two values.

**Visual Utility**: All the elements in the graph convey useful information? Several elements are useless: the football field in the background, the balls, the stars, the logos.

**Visual Clarity**: Are the data in the graph clearly identifiable and understandable (properly described)? Data are understandable because the numerical values are reported. It is very difficult to compare these values because they are not properly aligned. The number of stars has no real meaning. The rank is very clear because each football club is associated with a number.

A bad bar graph

3D bars are impossible to read / Heavy gridlines are a source of distraction/ Vertical labels are hard to read / Years run counterintuitively from back to front

Horizontal let longer labels /

A pie chart

Size of slices not proportional to values / 3D Perspective worsen readability Depth add noise

Pie Charts: guidelines ▪ Have serious limitations ω To represent part-whole relationship ω Only with a small number of categories – Up to four – Avoid rainbow pie ω When proportions are distinct enough ▪ Remember to ease reading ω Labels placed close to slices ω Labels include values (percentages)

Analysis Analyze the above graph illustrating the Lego sets with the most pieces.

**Question**: Is there one (or more) question addressed by the visualization?

The question is clear and it is stated in the title of the visualization: what are the Lego sets with the highest number of pieces?

**Data**: Is the data quality appropriate?

***Accuracy***: data are absolute values representing the number of pieces, ranging from 4k to 12k, and they look reasonable. ***Completeness***: data are not complete, as only the top 15 Lego sets are considered.

***Consistency***: data are consistent, as they express an absolute value obtained by counting the number of pieces.

***Currency***: currency is appropriate, data are updated to the year 2021.

***Credibility***: the source is reported: it is a website (thecollector.io) and it seems trusted.

***Understandability***: the meaning of the values is quite clear (the number of pieces in each set).

***Precision***: precision up to the unit is appropriate for the task.

**Visual Proportionality**: Are the values encoded in a uniformly proportional way? Not at all: the area of the bubbles seems not related to the corresponding value, but only to the “row” where they are located (smaller bubbles are in the bottom, bigger bubbles in the top). In any case, bubbles should be avoided because of Stevens’s law.

**Visual Utility**: All the elements in the graph convey useful information? No, some elements can be removed: the Lego pieces in the background, the legend (in this case is useless), the bar below the title, the pictures of the Lego sets.

**Visual Clarity**: Are the data in the graph clearly identifiable and understandable (properly described)? The colors associated with the Lego sets have no real meaning and they represent a clarity issue as they are a source of distraction for the reader. The order of the values is following the convention left-right and top-bottom, but this is not appropriate for a ranking (either use left-right or top-bottom).

Field Dim./Measure Description

PIECES Measure The number of pieces in the Lego set

LEGO\_SET Dimension The name of the Lego set

COLOR Dimension No real meaning