1. What is the source of the visual? (e.g., URL or bibliographic citation)

Visualization is done by YouGov based on a survey of 3683 respondents of a sample taken from the adulthood population of Great Britain during the period February 26-28, 2017.

Presentation of main findings can be find on:

<https://yougov.co.uk/news/2017/03/06/does-pineapple-belong-pizza/>

Who is the intended audience (i.e., decoders)? How do you know this?

Intended audience is the general population via media outreach, not an auditorium familiar with central statistical concepts. Why? The topic of what kind of toppings you like on your pizza does not relate to a specific group of persons. It is a story you want to tell in general to get population wide attentiveness. Also the visualization of the data in form of a ‘pizza chart’ underlines this.

Other aspects supporting are the general distribution via twitter to a wider audience:

<https://twitter.com/YouGov/status/838720989991223297>

and that the detailed data and description how the data was sampled is only provided via supplementary documents and not as a part of the presentation of the results on the website:

<https://d25d2506sfb94s.cloudfront.net/cumulus_uploads/document/7ordz029w2/InternalResults_170228_Pizza_W.pdf>

and not even the method of sampling and size of the sample is mentioned in the original text.

1. Identify the specific component(s) of the visual that is/are misleading

The visualization is misleading because the shape of a pizza suggests, especially to naïve consumers, a pie chart is presented here. As this kind of presenting your data is common in media one should imply the possible misinterpretation of the data.

But in contrast to the chosen form of data visualization the original question attended to choose all toppings that you like on your pizza. It is not a relative distribution which one can show by a pie chart, the numbers presented instead show the percentage of asked persons who decided, apart possible others, to like a specific topping like ham.

1. For each part(s) of the visualization that is/are misleading, identify the mechanism that is used: hiding relevant data to highlight what benefits us; displaying too much data to obscure reality; using graphic forms in inappropriate ways (distorting the data)

In general, the graph is misleading because of a combination of *displaying too much data to obscure reality* and *using graphic forms in inappropriate ways*. First occurs because the relative frequencies of persons who like specific different toppings on their pizza is combined in one visualization. Second results from the kind of graphical display. The presentation as a commonly understood pie chart is simply misleading as the data underlying is no relative distribution all in all. Technically the same-sized pizza slices might be ok, they are from different binary distributions (you like it or not). But the misleading presentation as a pie chart suggests the reader implicitly an equal importance of all toppings.

1. Explain how the mechanisms are used to mislead

The mechanisms are used to mislead by the form of presentation (see above). Also, the size of the slices does not fit to the percentages presented and, as mentioned before, we have multiple binary distributions presented in a graphical way suggesting one relative distribution. But apart from that one should state that these mechanisms seem not to be used willful to deceive the consumer of the graph. It seems to be a mixture of a misleading cooperation between the data analysis team and the graphical visualization team.

Why does that seem to fit? Simply because YouGov twittered a statement later on to clarify that they have not been intended to graph a pie chart…obscure, but an unintended way to fulfill Cairo’s way of misleading presentation of data.