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Data Visualization – EN.605.662

Project #1: Visualization Critique

Data

At some point before 2020, the New York-based food site Kitchn published a visualization on their Instagram, which Codewave Insights highlighted as complicated in an article titled "Design thinking led Data visualization." [1]

The visualization embodies quantitative percentages in response to the proposed question: "HOW MUCH DO YOU SPEND ON GROCERIES EVERY WEEK?" The proportional data adds up to 100% and is categorized into five monetary ranges:

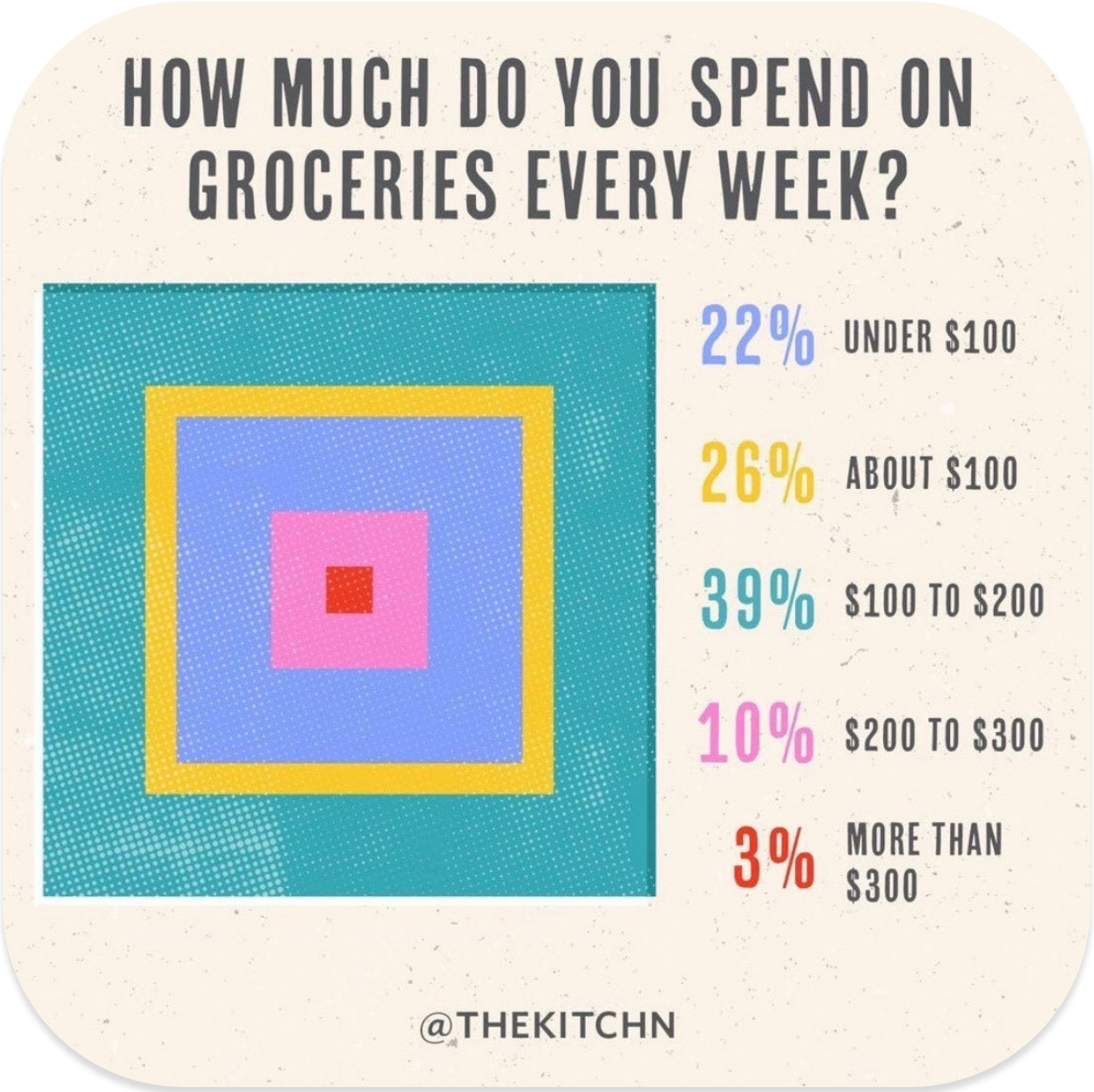
- *Under $100*
- *About $100*
- *$100 to $200*
- *$200 to $300*
- *More than $300*

Description of Visualization

A possible minimalistic attempt at a hybrid pie/area chart as a metaphorical square food plate. The subsections of the plate correspond to the respective portions of the data categories. There is a color-coordinated legend with the actual percentages

[1] https://insights.codewave.com/design-thinking-data-visualization/

linking these sections and the categories. Additionally, an inquisitive title describes the nature of the visualization.



Visualization Technique

The visualization is trying to show composition, which in this case means the proportion of the population n under each category. Given that this is static data, possibly collected around the publication timeframe, the authors intended to describe the simple shares of the total, i.e., a pie chart.

Ineffective Properties

The visualization had the right intentions but failed with a classic case of putting aesthetics over function. As one starts to inspect the visualization objectively, an optical illusion renders the proportional sections in the middle impractical. It might be argued that the “yellow” section is indeed bigger area-wise, but the overlapping “blue” section creates an illusion of a bitwise subtraction and “yellow” ends up looking smaller than the “blue.” Vice versa for the other sections is true as well.

Likewise, given that the “green” section represents both the totality and a data category – cognitively, something goes terribly amiss!

Furthermore, the existence of a legend does not help much either, as those numbers mean nothing, even how hard one tries.

Effective Features

The title is the most compelling feature of this visualization, as it provides some cognizance of what is being presented because otherwise, one would have no idea! The overall color scheme is quite balanced and coherent as well.

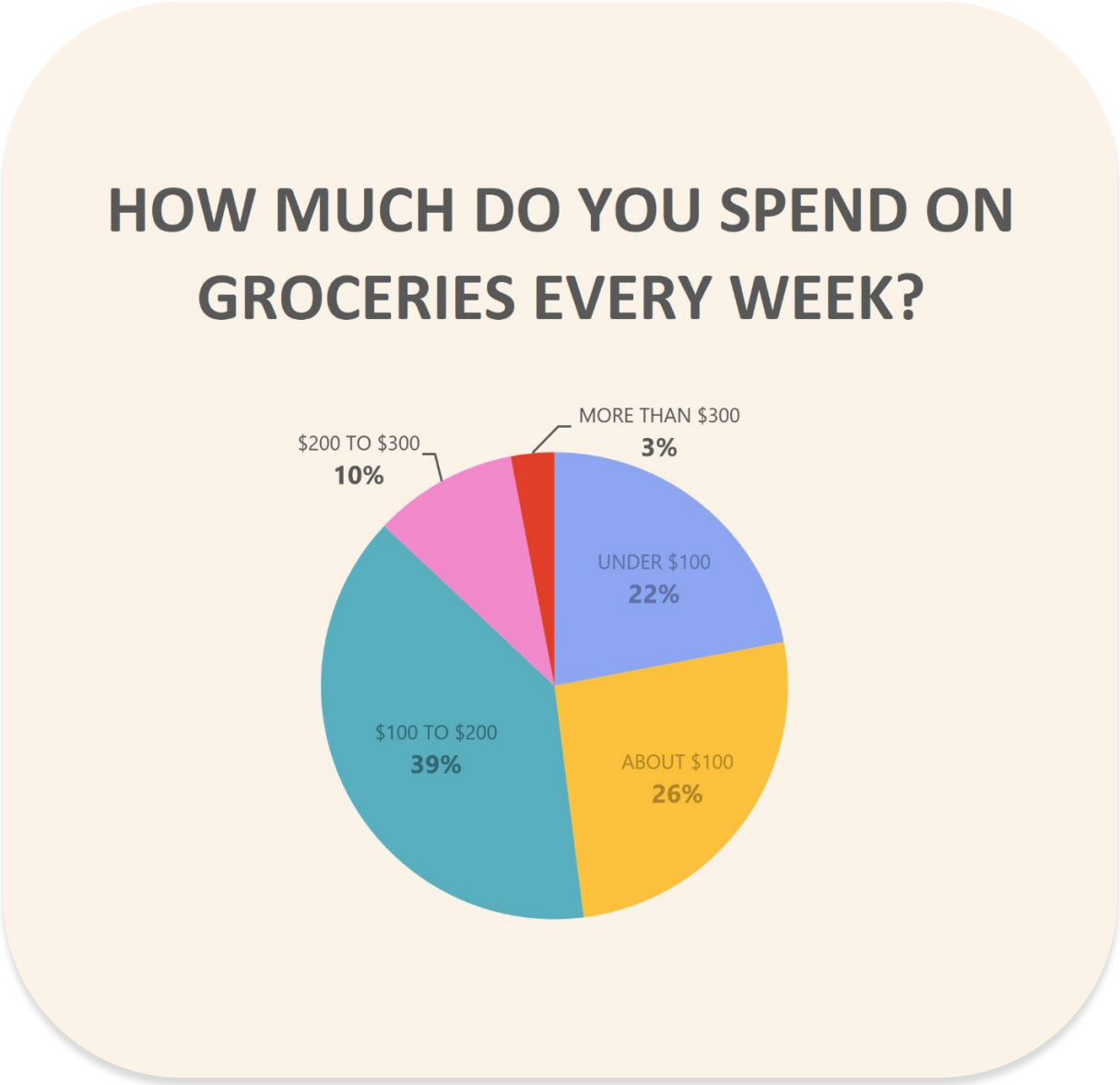
How to improve?

Well, for starters, let's replace the square plate with a circular one, i.e., a proper pie chart.

It already looks much more functional, as we can now correctly visualize the share of the totals as referred to in the legend.

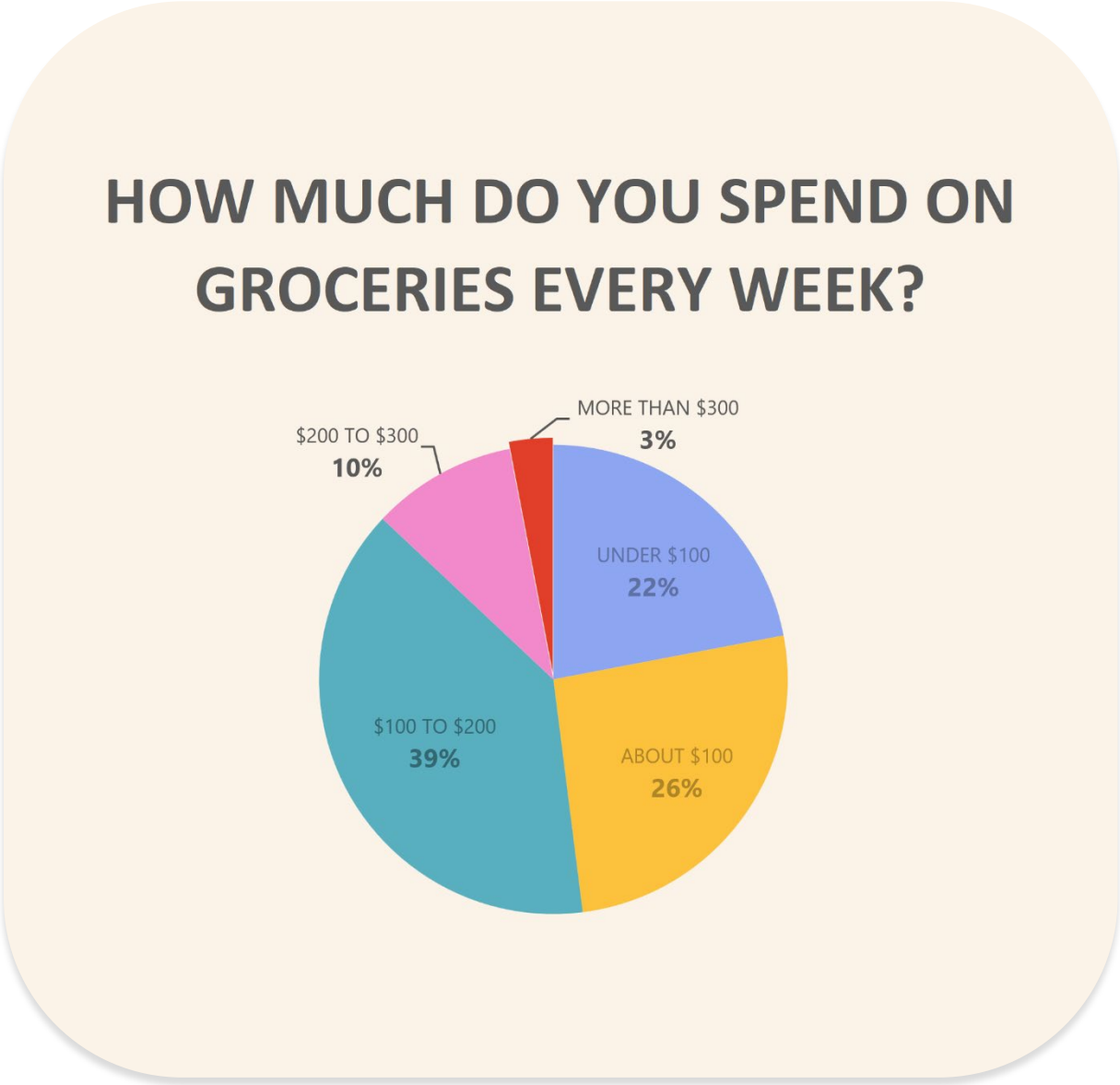
The proportions add up to the whole and no single category functions in a duality like the “green” in the original plot. From a visual perspective, the hidden area optical illusion is eliminated, and each category is represented with the correct area/slice of the pie.

Taking it a step further, the legend is an unnecessary burden on the observer and should be combined with the plot as data labels to prevent the back and forth between the plot and the legend.

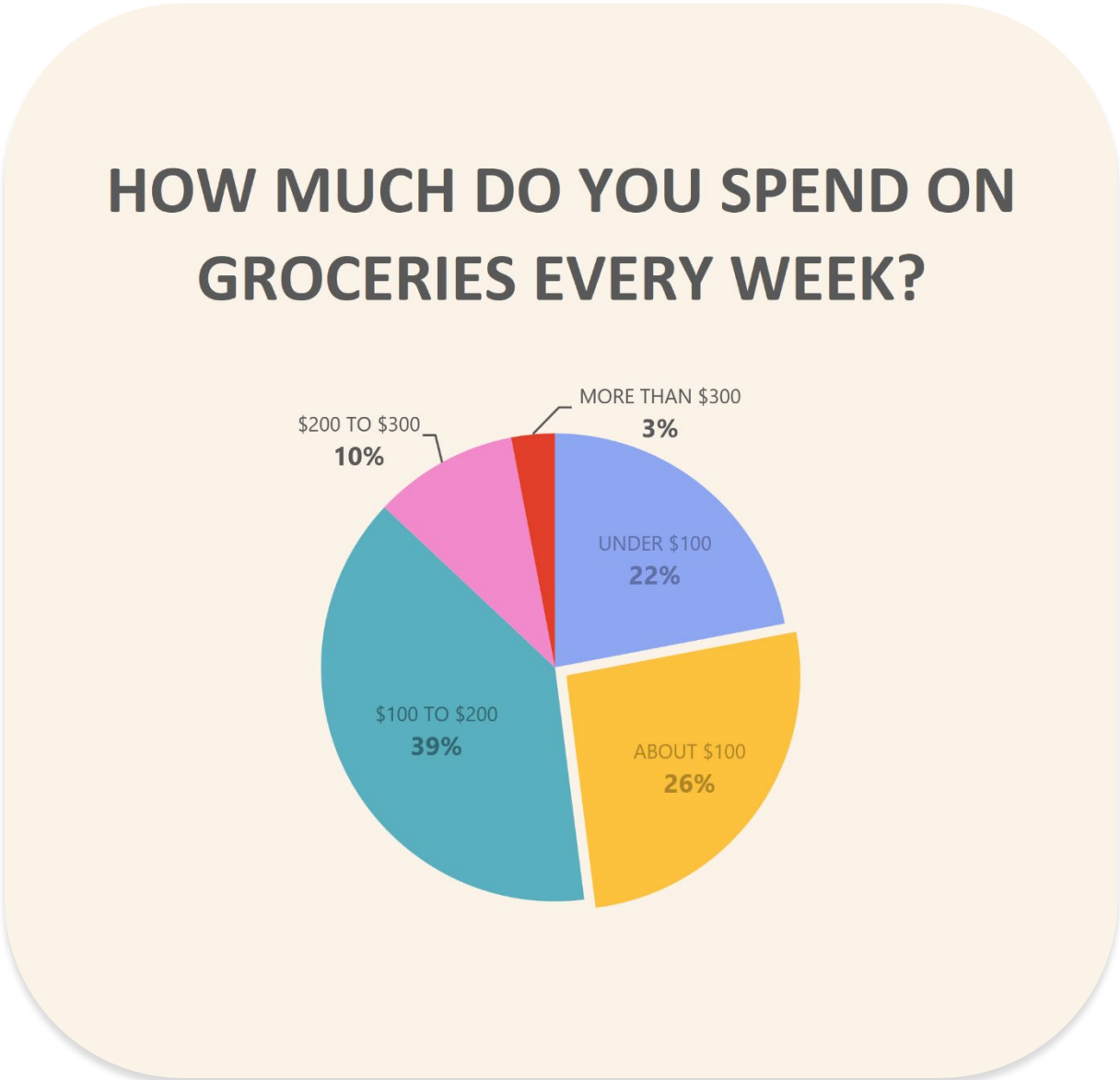


From there, depending on the author's needs and intentions, a single category can be emphasized, or deemphasized, and additional decorative elements can be added to enhance the aesthetics without ruining the functionality.

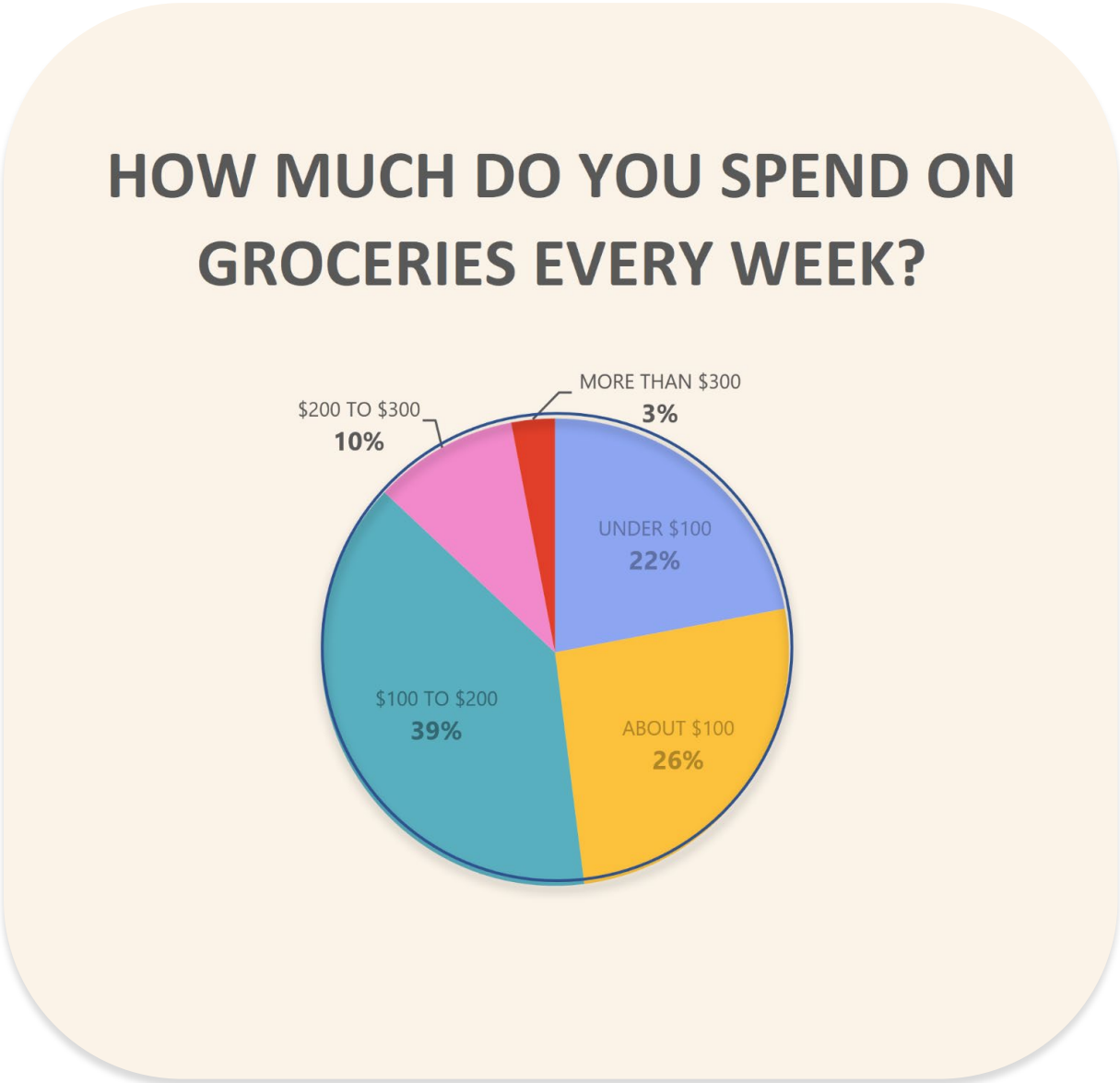
- For example, to emphasize "MORE THAN $300":



- Alternatively, to emphasize “ABOUT $100”:



- How about solidifying the food plate metaphor a little more?



Conclusion

Hence, as previously eluded, the whole visualization could have worked given certain minor tweaks and only if the authors had prioritized a balance between aesthetics and functionality. One of the biggest downfalls of the visualization was the hidden area optical illusion and the discrete legend confusing the observer.

However, the authors must be complimented on the excellent choice of color scheme and the proper realization of composition model for this static quantitative data.