The Effect of Choice Set Size on the Attraction Effect in Numerical and Visual Representations

Claudio Wellinger, Master Thesis, Spring Semester 2021

Abstract

The likelihood of choosing an option A from a choice set can be increased if an additional option is added which is inferior only to option A. This phenomenon is called attraction effect. I derived the roles of intuitive (System 1) and deliberate thinking processes (System 2) in producing the attraction effect and how these roles differ for small and large choice sets presented numerically or visually. I conducted an online study where participants had to choose an olive oil bottle from a small or large choice set which was either presented by photographs or by numbers. In every choice set was one inferior (asymmetrically dominated) bottle. As I expected, the results of the study show an attraction effect for small and large visually presented choice sets. Although for the small numerically presented choice set an attraction effect was expected, only a weak effect size was obtained. Instead, contrary to the expectations, it was obtained in the large numerically presented choice set.

Hypotheses

Perception is mainly a System 1 process and the attraction effect underlies perceptual mechanisms. I derived the following hypotheses:

H1: The attraction effect occurs in small and large visually presented choice sets.

H2: The attraction effect occurs in small numerically presented choice sets. It does not occur in large numerically presented choice sets or it occurs with smaller effect size than when large choice sets are visually presented.

Method

- 800 online participants.
- Asked to choose an olive oil bottle from a three-bottle or four-bottle choice set.
- Olive oil bottles either represented by photographs or numbers.
- How does choice share change when the inferior bottle changes? (see visual three-bottles example on the right side)

£58.80   £36.00   £36.00

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Results

Effect Size in %
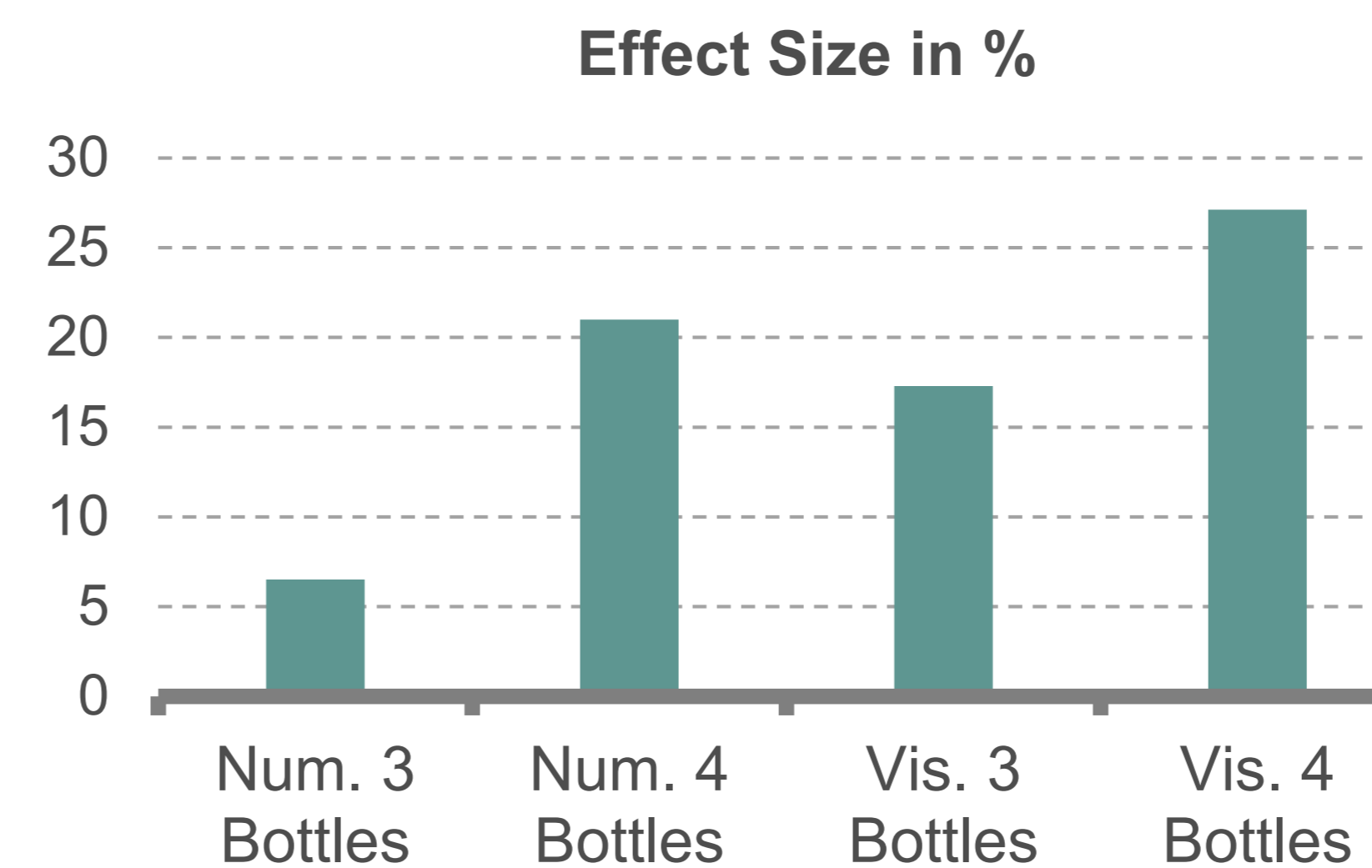
The bars show the increase in percentage points of the choice share of the large full bottle in the four different conditions. For example in the choice set on the left (visual and three bottles), the large full bottle got in the bottom choice set 17.30%-points more choice share than in the upper choice set. I conducted chi-square tests of the inferior bottle (small or large) by the large full bottle being selected (yes or no). See the table below which condition reached a significant attraction effect.

Effect Size			
Presentation Mode	Set Size	Effect Size on Large Full Bottle	P-Value
numbers	3	6.52%	0.268
numbers	4	20.99%	< 0.000
visual	3	17.30%	0.003
visual	4	27.12%	< 0.000

References

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