

# **Choice overload among children:**

## **The moderating role of cognitive ability**

**Hilla Schupak & Eyal Peer**

The Hebrew University of Jerusalem School of Public Policy

Multiple options in every day decisions may influence our choices and post-choice satisfaction in two distinctly different ways. The positive way states the probability of satisfaction is a function of the number of options available in the choice-set. When options increase so does the likelihood of finding exactly what is being looked for (Oppewal & Koelmeijer, 2005). On the other hand, assortment size can also have a negative effect. Known as the “choice overload” effect, it is when post-choice satisfaction decreases when extensive sets of choices are presented (Iyengar & Lepper, 2000). This decrease in satisfaction is mainly interpreted by either emotional or cognitive explanation. The emotional explanation centers on negative emotions, mainly regret, resulting from choosing from extensive assortments (e.g., Chernev, Böckenholt & Goodman, 2015; Inbar, Botti & Hanks, 2011). Regret may be more intense in larger assortments due to stronger doubts about making the best decision, and foregoing more options. The second explanation is cognitive in nature, suggesting that an increase in assortment size leads to a more complex task and to higher cognitive demands, which may result in choice avoidance (Iyengar & Lepper, 2000) or in applying a heuristic decision rule. While alternating between decision strategies demands cognitive flexibility that may allow decision-makers to avoid choice overload, it may also lead to poorer decisions (Dihel, 2005).

Extant research has examined adult response to large assortments but has not studied the effect of set size on post-choice satisfaction in children. This is puzzling since children are asked to make decisions from a very young age (cereal, clothing or toy choices, for example; McNeal, 1992; Valkenburg & Cantor, 2001). Combining knowledge of cognitive development with findings from studies on assortment size raises questions about how set size can affect children as decision makers. Thus, the goal of the current study is to examine whether and in what way the number of options may affect children’s choice satisfaction.

### **Method**

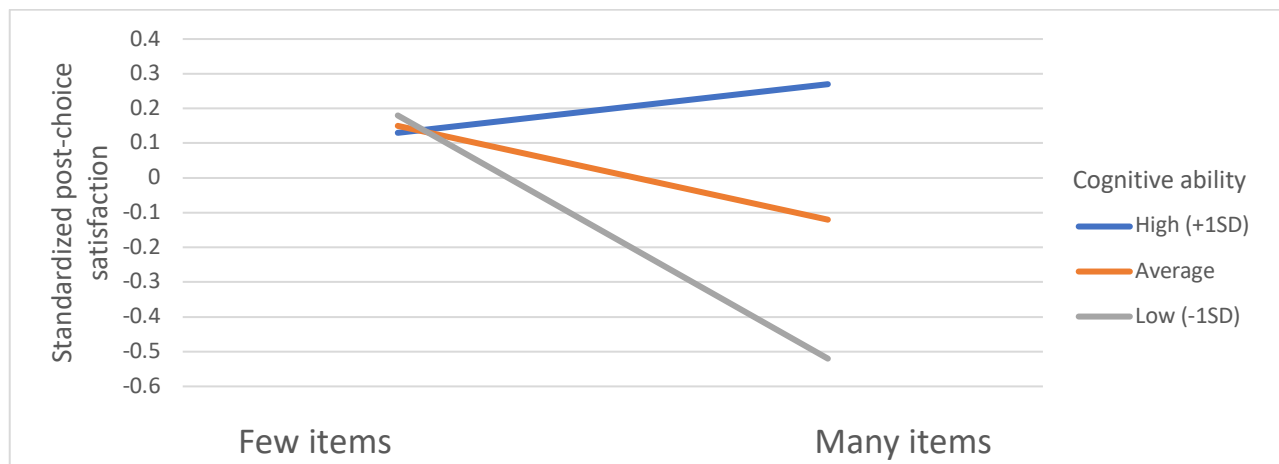
A sample of 442 children were recruited for this experiment (229 girls, 208 boys, 5 missing data). The youngest participants were 4.5 years old and the oldest were 11 years old. We sampled 111 preschoolers ( $M=60$  months;  $SD=3.4$ ), 180 first-graders ( $M=85$  months;  $SD=3.8$ ) and 151 fourth-graders ( $M=121$  months;  $SD=3.6$ ).

The study included three age groups. In each, the number of alternatives was manipulated at three or four levels. Overall we had 10 experimental conditions, differing by age and set sizes. In line with pre-conditions to the choice overload effect, sets of choices did not contain any obviously dominate items or popular brand names to minimize prior preferences. Each participant was randomly allocated to an assortment size following which a set of items was revealed to the child. After choosing an item from the set, the child was asked to indicate their satisfaction with the chosen item on a visual-analog scale.

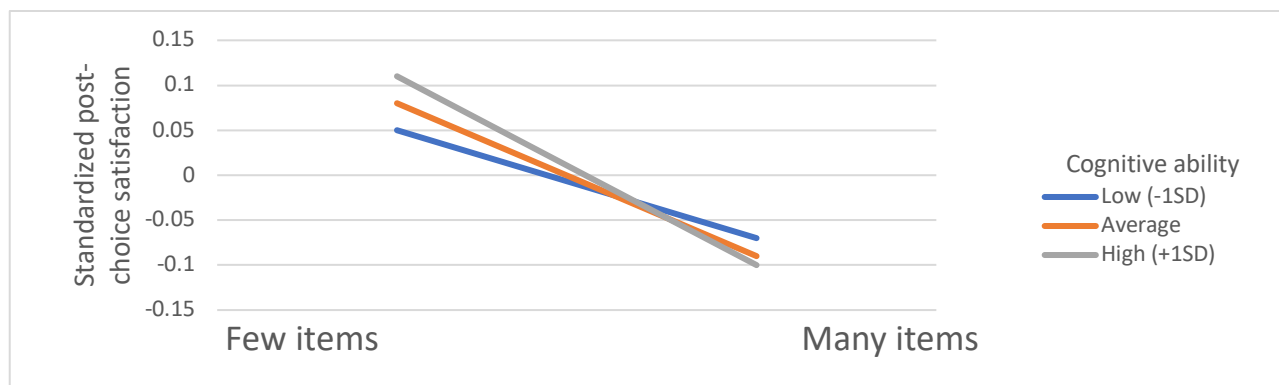
## Results

An overview of our measures reveals that preschoolers' cognitive ability was moderating the effect of set size on post-choice satisfaction ( $F(3,105)=4.34$ ,  $p=0.01$ ,  $R^2=0.11$ ), so that average-low cognitive ability was related to lower satisfaction when set size increased ( $b=-0.69$ ,  $t(105)=-2.59$ ,  $p=0.01$ ; see Figure 1). First-graders did not show any consistent trend of such influence or moderation ( $F(3,173)=0.44$ ,  $p=n.s$ ; see Figure 2). Fourth-graders demonstrated a moderation effect ( $F(3,146)=3.02$ ,  $p=0.03$ ,  $R^2=0.06$ ), in which average cognitive ability was related to higher satisfaction with larger sets of choice ( $b=0.39$ ,  $t(146)=2.24$ ,  $p=0.03$ ; see Figure 3).

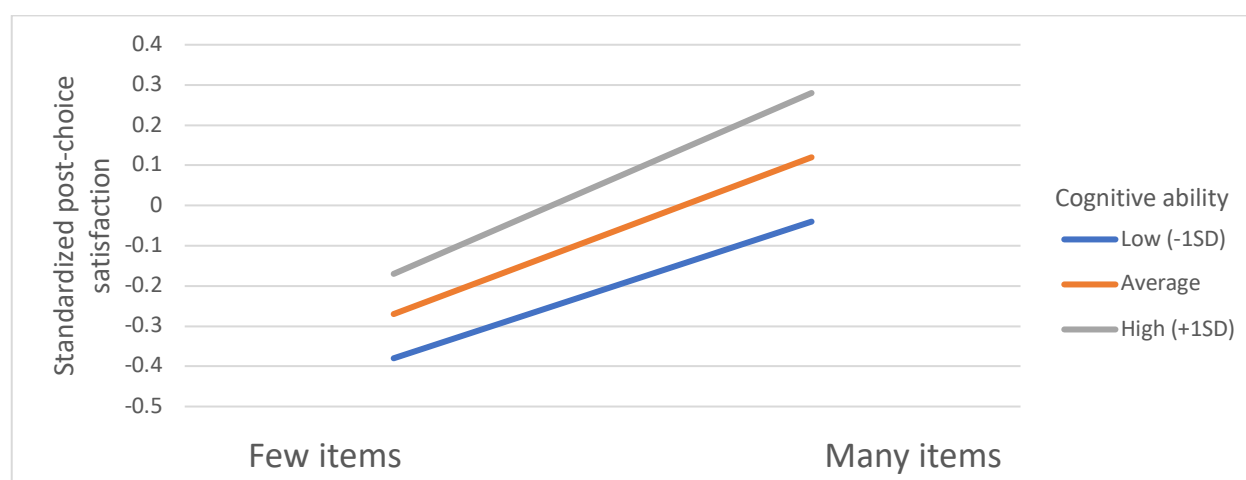
*Figure 1 -Post-choice satisfaction as a function of set size at values of cognitive ability*



*Figure 2 - Post-choice satisfaction as a function of set size at values of cognitive ability*



*Figure 3 - Post-choice satisfaction as a function of set size at values of cognitive ability*



## Discussion

Our results demonstrate the choice overload effect in an environment where, due to developmental age (pre-school), regret is hardly possible, and inhibitory control is not mastered yet. However, the effect of large assortment size on post-choice satisfaction was positive among older children of whom regret is possible, and inhibitory control is mastered. This pattern of results suggests that inhibitory control (i.e., cognitive ability), and not regret, is a crucial component of choice overload effect among children, since the older group was less vulnerable to the extension of the choice-set than the younger group. Cognitive flexibility may be another potentially relevant cognitive ability, which may also shed light on the mixed-trend of influence observed in the first-graders. However, that ability was beyond the scope of our research and was not measured. Although this study only observed children, its results challenge the central explanation that the choice overload effect stems from feelings of regret in adults.

## References

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