

How too many options can impair the ability to make skillful choices

June 30 2011

A study by Columbia Business School Professor Sheena Iyengar, S. T. Lee Professor of Business, Management, and Emir Kamenica, Associate Professor of Economics, University of Chicago Booth School of Business, found the more fund options an employee has to choose from when presented with 401k options deters he or she from enrolling in the plan. The professors conducted three experiments in order to determine how increasing the size of a choice set will impact the option the consumer will chose, evolving from earlier studies that have focused on whether increasing the number of choices affects consumers' willingness to participate in the market. The researchers discovered that giving consumers too many options can impair their ability to make skillful choices and erode their ability to determine the optimal choice for them. The study was published by the *Journal of Public Economics*.

In the first study, one group of subjects selected a gamble from the menu of 11 gambles, which includes ten risky options and one less lucrative gamble of five dollars. Another group of subjects was offered a three-gamble subset of the 11 gambles, which included the less lucrative gamble of five dollars. They found that many more subjects chose the simple option (five dollars for sure) from the set with 11 options than from the set with three. In the first experiment, the simplest option was also the least risky option.

The second experiment deviated from this design by making the simplest option the riskiest. Once again subjects were offered either 11 gambles or a subset of three. The set of 11 included ten gambles that yielded a

distinct amount of money (between zero and ten dollars) for each outcome of a die toss. The remaining gamble yielded zero or ten dollars, based on the toss of the die. The all-or-nothing gamble was both simpler and riskier than the other 10 gambles. The professors found that, as in the first experiment, the simpler gamble was selected – in this case, the simpler gamble is selected from the larger choice set, versus the smaller choice sets.

The third study examined how the size of the choice set affects people's behavior in context of 401(k) plans: the experimenters tested whether, conditional on participation, the number of funds offered influences asset allocation. Using data from the Vanguard Center for Retirement Research, they analyzed the investment decisions of over 500,000 employees in 638 firms. The data provides information on how individuals allocated their total annual 401(k) contribution in 2001 (including the employer match) across seven different categories: money market funds, bond funds, balanced funds, active stock funds, indexed stock funds, company stock, and other funds (mainly insurance policies and non-marketable securities). Conditional on a host of individual and plan-level controls, with every additional ten funds in a plan, allocation to equity funds decreased by 3.28 percentage points. Moreover, for every ten additional funds, there was a 2.87 percentage point increase in the probability that participants will allocate nothing at all to equity funds. As revealed in the first two studies, the presence of complicated choices caused decision-makers to choose the simpler options, even if they were not as lucrative.

In addition, the data revealed that employees under 30 years of age are as likely as others to allocate no money at all to equity funds and their participation in equities is just as sensitive to the number of funds as that of older employees. The findings are of particular economic significance, as non-participation in the stock market, especially for younger employees, is likely to be detrimental to one's retirement

income.

This research joins a growing body of research in psychology and economics that demonstrates why consumers can be better off with a strictly smaller choice set.

More information: Paper: [doi:10.1016/j.jpubeco.2010.03.006](https://doi.org/10.1016/j.jpubeco.2010.03.006)

Provided by Columbia Business School

Citation: How too many options can impair the ability to make skillful choices (2011, June 30)
retrieved 2 May 2024 from

<https://phys.org/news/2011-06-options-impair-ability-skillful-choices.html>

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