It’s Personal: Can Personalization Improve Nudges on Financial Decisions?

The philosophy of “nudging” individuals toward better choices and outcomes, rather than relying on financial incentives or outright restrictions, has become a major topic within the past decade. Financial services companies have enthusiastically adopted nudging, especially for encouraging customers to save more within retirement plans.

Typical nudges include defaults in initiating savings and scheduled escalations, using anchors for increasing savings rates and reframing rates to appear less costly. These changes to presenting information to investors and employees have been credited with driving significant increases in retirement savings among 401(k) plan participants.[1] Beyond their use in financial contexts, nudges have been employed in environmental, educational and health contexts with significant success.

However, most nudges are applied equally across populations in a one-size-fits-all approach. Decades of research in psychology and economics have recognized that individual differences also matter. We all differ in the amount of risk or loss we are willing to accept, how we value the future, our sensitivity to anchors or social norms, or a wide variety of other behavioral characteristics.

In this article, I discuss how and why such individual differences matter in financial decisions and suggest customized nudges to make choice architecture more effective for different types of individuals.

Suzanne Shu, Ph.D.
Consultant to Avantis Investors

Suzanne is the John Dyson Professor of Marketing at Cornell University’s Dyson School of Applied Economics and Management within the SC Johnson College of Business. The types of decisions she analyzes in her research include consumer self-control problems and consumption timing issues, with important implications for both negative behaviors (e.g., procrastination) and positive behaviors (e.g., saving).

It's Personal: Can Personalization Improve Nudges on Financial Decisions?

Which Psychological Individual Differences Matter for Financial Decisions?

Financial decisions are challenging for those who believe in rational decision-making because it is easy to assume that the trade-offs between outcomes are quantifiable in dollars and thus approached as a rational cost-benefit analysis. However, human behavior is rarely that predictable! A variety of psychological factors affect all types of decisions, including financial ones, and some of these factors are further exacerbated when large outcomes are involved. In research my coauthors and I have done on financial decisions, especially decisions around retirement income, we consistently find four individual-specific factors with significant impacts: loss aversion, psychological ownership, time discounting and social influence.

Loss Aversion

The idea that a loss is more painful than the happiness from an equivalent gain is one of the best-known findings of behavioral finance. We find it in a variety of financial decisions. For example, loss aversion affects decisions about selling a house at a loss rather than a gain,[2] determining whether to hold a winner stock versus a loser stock[3] or decisions about bank accounts.[4] While those studies have focused on population-level loss aversion, we have done research linking individual-level loss aversion to financial decisions around retirement income.[5] Overall, highly loss-averse individuals are less likely to accept positively skewed gambles than similar individuals who are not as affected by losses.[6]

Psychological Ownership

A feeling that something is "mine" applies not only to legally owned physical items but also to concepts, public spaces and even different types of money.[7, 8] A pre-retiree with higher levels of psychological ownership toward their government benefits may claim Social Security benefits earlier than optimal, even at a substantial financial loss.[9] Interventions to increase feelings of psychological ownership toward benefits can encourage higher uptake of government benefits such as tax credits and stimulus checks.[10]

Differences in Time Discounting (i.e., Patience)

These differences are regularly included in models for valuing financial outcomes over time, such as the standard approach to calculating net present value. However, individuals may exhibit time discounting that is more severe than most rational models assume. Rather than exhibiting a standard exponential discount function, many people are myopic and discount any outcomes that happen more than a few days away. This degree of patience for future outcomes can vary substantially, with some individuals being very patient for future outcomes and others heavily discounting them. Those who heavily discount the future are more likely to undervalue savings or investments that will take time to pay off.

Susceptibility to Social Influence

Social influence is a psychological factor we all experience, but rational financial decision-making models rarely account for it. Learning from those around us, including family, friends and coworkers, is a useful way to filter information in a busy world. However, social influence gets us in trouble when poor advice from a close friend is more heavily weighted than good advice from a professional. Individuals differ in how much they defer to these influences. This can directly impact the decisions individuals make when they feel that some decisions will help them fit in better to their social circles.

It’s Personal: Can Personalization Improve Nudges on Financial Decisions?

How Can Choice Architecture for Financial Decisions Be Made More Effective?

The concept of personalized medicine suggests that individual physiological differences can enable doctors to create treatment plans customized to the individual patient, even down to the genetic level. Similarly, customized choice architecture (or customized nudging) argues that we should consider individual psychological characteristics when designing environments to lead to better financial decisions.

Developing these customized interventions can be challenging since it requires

(1) Collection of psychological measures from each person

(2) Large-scale testing to understand which nudges match best to specific characteristics.

As a result, very few studies exist that test the linkage of psychological individual differences to behavioral nudges.

Independent from thinking about individual-level factors, research in behavioral science has recently expanded to include simultaneous testing of many interventions in “mega-study” experiments. Examples include testing financial work incentives,[11] flu vaccination messaging and savings incentives.[12, 13] These studies, while requiring significant resources, allow direct comparison of a large number of behavioral nudges in a controlled environment.

Only a Few Messaging Interventions Are Reliable for Changing Social Security Decisions

Building on both of these approaches, in a forthcoming paper with my colleagues Adam Greenberg, Hal Hershfield and Stephen Spiller, we explored (1) how multiple messaging interventions can affect financial decisions and (2) whether individual differences moderated the effects of these interventions.[14] Given the extensive prior research on messaging interventions for Social Security claiming intentions and new research on how individual psychological factors affect those intentions, we tested 13 different message types alongside 20 individual difference measures. This approach allowed us to not only compare the effectiveness of the interventions but also look at how those interventions interacted with individual characteristics.

All 13 of our messaging interventions were effective in prior research, but they had never been simultaneously tested on a single population. We found that only a few were reliably successful in changing decisions about claiming Social Security benefits.

Descriptive social norms about “what other people do,” such as “Millions of adults currently choose to delay claiming Social Security benefits,” were not effective, but injunctive social norms about what is the “right” choice, such as “Delaying claiming Social Security benefits is a wise choice,” did change outcomes. Reminders about possible future regret, such as “…about 4 out of 10 retirees say they wish they would have waited to collect Social Security benefits,” were very successful, while information about needs during retirement was not.

It’s Personal: Can Personalization Improve Nudges on Financial Decisions?

Messages about the financial benefits or gains from delaying claiming were only moderately successful. The most successful messages encouraged individuals to think about their likelihood of living to older ages and asked them to generate their own reasons why delaying benefits might be a good idea.

While many individual differences (such as patience, subjective health and psychological ownership of benefits) were predictive of decisions, we found little connection in this project between these unique factors and the interventions themselves. However, we continue to believe personalized choice architecture is a fruitful area for research.

Unlike nudges that encourage more retirement savings, which are helpful to almost everyone, retirement income decisions should be highly personalized to match the needs of the individual. Although these can be optimal choices for many individuals, not everyone should delay claiming their Social Security benefits, buy life annuities or self-manage their 401(k) benefits. In the future, larger data sets and data processing approaches such as machine learning and neural networks will help us further explore how individual traits link to behavior.

Implications for Financial Advisors

What do the findings of this project teach us about advising individuals in their retirement journey? We offer several key learnings:

Understand Each Individual’s Circumstances

The first step in working with individuals is learning about their unique circumstances. Family and financial circumstances are crucial information, but so are psychological traits like patience, feelings of financial ownership, loss aversion and attention to social norms. Tools and measures now exist to help capture these dimensions of any individual client.

Income Decisions Require Personalization

Unlike retirement savings decisions, retirement income decisions require an exceptional amount of personalization. For example, an individual with low patience, high loss aversion and a shorter life expectancy may be a good candidate for early Social Security claiming. In contrast, one with the opposite traits may be a good candidate for life annuities.

Some Messages Are More Effective Than Others

Though all 13 messaging interventions were successful when tested separately, it became clear that they were not equally powerful when we tested them against each other. When crafting messaging to guide individuals in these critical decisions, the most effective messages seem to be those that provide social norms about what “should” be done (injunctive norms) and those that encourage self-reflection about future trade-offs and possible regrets.

Overall, the importance of individual differences in financial decisions and the complexity of many of these decisions imply that there are few one-size-fits-all solutions. A careful and knowledgeable advisor who can customize advice is an essential guide through this challenging environment.

It’s Personal: Can Personalization Improve Nudges on Financial Decisions?

Endnotes

[1] Benartzi, S., & Thaler, R. H. (2013). Behavioral economics and the retirement savings crisis. *Science*, 339(6124), 1152-1153.

[2] Genesove, D., & Mayer, C. (2001). Loss aversion and seller behavior: Evidence from the housing market. *Quarterly Journal of Economics*, 116(4), 1233-1260.

[3] Odean, T. (1998). Are investors reluctant to realize their losses? *Journal of Finance*, 53(5), 1775-1798.

[4] Giné, X., Goldberg, J., Silverman, D., & Yang, D. (2017). Revising commitments: Field evidence on the adjustment of prior choices. *Economic Journal*, 128(608), 159-188.

[5] Shu, S. B., Zeithammer, R., & Payne, J. W. (2016). Consumer Preferences for Annuity Attributes: Beyond Net Present Value. *Journal of Marketing Research*, Vol. 53, No. 2, pp. 240-262.

[6] Seaman, K. L., Green, M. A., Shu, S., & Samanez-Larkin, G. R. (2018). Individual differences in loss aversion and preferences for skewed risks across adulthood. *Psychology and Aging*, 33(4), 654.

[7] Peck, J., Kirk, C. P., Luangrath, A. W., & Shu, S. B. (2021). Caring for the commons: Using psychological ownership to enhance stewardship behavior for public goods. *Journal of Marketing*, 85(2), 33-49.

[8] Sharma, E., Tully, S., & Cryder, C. (2021). Psychological ownership of (borrowed) money. *Journal of Marketing Research*, 58(3), 497-514.

[9] Shu, S., & Payne, J. W. (2023). *Social Security Claiming Intentions: Psychological Ownership, Loss Aversion, and Information Displays* (No. w31499). National Bureau of Economic Research.

[10] De La Rosa, W., Sharma, E., Tully, S. M., Giannella, E., & Rino, G. (2021). Psychological ownership interventions increase interest in claiming government benefits. *Proceedings of the National Academy of Sciences*, 118(35), e2106357118.

[11] DellaVigna, S., & Pope, D. (2018). What motivates effort? Evidence and expert forecasts. *Review of Economic Studies*, 85(2), 1029-1069.

[12] Milkman, K. L., Patel, M. S., Gandhi, L., Graci, H. N., Gromet, D. M., Ho, H., ... & Duckworth, A. L. (2021). A megastudy of text-based nudges encouraging patients to get vaccinated at an upcoming doctor’s appointment. *Proceedings of the National Academy of Sciences*, 118(20), e2101165118.

[13] Patterson, R. W., & Skimmyhorn, W. L. (2022). *How Do Behavioral Approaches to Increase Savings Compare? Evidence from Multiple Interventions in the US Army* (No. w30697). National Bureau of Economic Research.

[14] Greenberg, A. E., Hershfield, H. E., Shu, S. B., & Spiller, S. A. (2023). What Motivates Social Security Claiming Age Intentions? Testing Behaviorally Informed Interventions Alongside Individual Differences. *Journal of Marketing Research*, 0(0).