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# Alternative Measures of Noncognitive Skills and Their Effect on Retirement Preparation and Financial Capability

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It is now known that noncognitive skills and personality traits, such as grit, self-control, a growth mindset, and conscientiousness play a prominent role in shaping long-term outcomes, such as educational attainment and labor outcomes, beyond the role of cognitive ability. Less is known, however, on the role they could potentially play on explaining individual differences in financial capability and retirement preparation. A limited amount of research has highlighted the potential role that personality traits, such as conscientiousness and neuroticism, could have for retirement planning and savings. However, this research has only used self-reported measures of these skills.

Self-reports of noncognitive skills and personality traits can be problematic as they have been shown to be potentially affected by reporting biases. Respondents might tend to provide responses of their levels of noncognitive skills that are seen favorably by others leading to social desirability bias, or self-evaluations of these skills might be affected by different intrinsic ideas, across groups of respondents, of what it means to possess a certain noncognitive skill (i.e., reference group bias). Measures derived from performance tasks, where respondents are asked to perform a specific, carefully designed task to detect meaningful differences in behaviors as indicative of their level of a given skill, have been proposed as an alternative way of measuring noncognitive skills.

Though performance-task measures do not always suffer the same sources of biases as previously described measures, they have limitations of their own. Tasks can be costly and difficult to administer in large samples. Also, it is not always clear the degree which validated tasks in a particular setting still would be valid in other populations or settings. Moreover, the ability of behavioral tasks to capture specific noncognitive skills of interest is not always clear. Finally, existing performance tasks are difficult to implement multiple times, as participants might show learning effects after having performed the task once.

In this paper. we study the validity of two types of performance tasks to capture noncognitive skills among adults in the Understanding America Study (UAS), a nationally representative internet panel of about 6,000 households run by the University of Southern California. First, we study an adaptation, for the adult population, of the Academic

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Diligence Task (ADT). Secondly, we argue that questionnaires themselves can be seen as performance tasks, such that measures of survey effort can lead to meaningful measures of noncognitive skills.

The ADT is a computer-generated task first validated among high school students. In the original task, students were given the option to perform simple math problems, which they were told would be beneficial for them, or play computer games. This task was designed to measure academic diligence by mirroring a real-world choice that students face when completing homework: the choice to remain engaged in tedious, but important assignments, and/or browse the internet or play video games. Similarly, a subsample of respondents to the UAS were first prompted about the importance of simple mental exercises and their potential role on preventing mental diseases (e.g. Alzheimer's disease). Secondly, they were asked to choose several webpages that would be available during the task as distractors. Finally, respondents were asked to perform as many verbal and math problems as possible in 10 minutes but allowed to take breaks to surf the web through their selected webpages. Measures of time on task and percentage of correct answers were used to assess performance. Our results show the difficulty of adapting the ADT to a different context and population. Most of respondents in the UAS that took the ADT did not seem to be tempted by the distractors offered during the task. They took the task very seriously and devoted all or almost all their time on the task. This resulted in very high percentages of correct answers during the task, a lack of variation across respondents on their performance, very small correlations with self-reported measures of noncognitive skills, and a lack of construct validity. Future research is needed to better design performance task measures that could work in an internet panel for a population similar to that represented in the UAS.

For our second set of performance task-based measures, we constructed measures of survey effort by means of item nonresponse rates and measures of careless answering behaviors. One advantage of these measures is that respondents are typically unaware that they are being assessed on survey effort, which can help minimize experimenter effects on task performance. Our results for item nonresponse rates show how the validity of these measures could be affected by survey design decisions. Item nonresponse is discouraged in the UAS. Since respondents know that, they may be tempted to provide a less than thoughtful answer rather than leaving a question unanswered. We believe this could have contributed to the finding that item nonresponse does not appear to be a good proxy for relevant noncognitive skills in the UAS. In contrast, measures of careless answering showed promise as a good proxy measures of noncognitive skills related to conscientiousness and neuroticism.

Finally, we explore the relationship between alternative measures of noncognitive skills, and measures of financial capability, financial well-being, and retirement preparation. Our results show that both self-reported measures of noncognitive skills, and careless-answering behaviors are important determinants of the level of financial capability and retirement preparation. Self-reported conscientiousness was found to be significantly related to financial well-being and retirement preparation. Self-reported grit was also found to be significantly related to higher levels of financial well-being, perceived financial literacy levels, and retirement preparation and planning. Interestingly, careless answering consistently showed significant correlations with all outcome variables considered. Those respondents who engaged in this behavior also showed lower levels of financial literacy scores, perceived financial literacy, total value of assets, financial well-being scores, lower probability of reporting good or excellent credit scores, and preparation for retirement. These results highlight the importance of considering psychological factors when designing policies that aim to improve the population's level of financial capability and retirement preparation.