Does personalized information improve health plan choices when individuals are distracted?

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ABSTRACT

Choice-based health insurance systems allow individuals to select a health plan that fits their needs. However, bounded rationality and limited attention may lead to sub-optimal insurance coverage and higher-than-expected out-of-pocket payments. In this paper, we study the impact of providing personalized information on health plan choices in a laboratory experiment. We seek to more closely mimic real-life choices by randomly providing an incentivized distraction to some individuals. We find that providing personalized information significantly improves health plan choices. The positive effect is even larger and longer-lasting if individuals are distracted from their original task. In addition to providing decision support, receiving personalized information restores the awareness of the choice setting to a level comparable to the case without distraction thus reducing inertia. Our results indicate that increasing transparency of the health insurance system and providing tailored information can help individuals to make better choices and reduce their out-of-pocket expenditures.

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1. Introduction

Health insurance expenditures place a substantial burden on household budgets. For example, a typical household in the United States spends approximately 5% of pre-tax income on health insurance (Bureau of Labor Statistics, 2016). In the European Union, where basic health insurance is mostly mandatory, household spending on health insurance relative to disposable income amounts to approximately 8% in Germany and the Netherlands, and 7% in France and Belgium (Eurostat, 2016). In Switzerland, expenditures for basic health insurance amount to approximately 6% of disposable income and almost 10% if out-of-pocket health expenditures are taken into account. Households with low socio-economic status face even higher relative costs, up to 20% in the lowest income quintile (Federal Statistical Office, 2013). Despite the financial importance for households, 17% of the Swiss population are not able to give exact details about their health insurance plan (Federal Statistical Office, 2012). In a representative survey of the Swiss population conducted in 2015 (Boes et al., 2015), more than 40% of the respondents reported that choosing health insurance is difficult because of the many health insurers and plans offered in the market. The low health insurance literacy exhibited by a non-negligible part of the population is not specific to the

Swiss system, with similar discrepancies being observed for other countries such as the United States (Loewenstein et al., 2013).

Choice-based health insurance systems, such as that in Switzerland rely on the ability of individuals to choose a health plan that fits their health care needs and preferences. However, a rich body of economic and psychological literature casts doubt on the ability of individuals to choose optimally and consistently in situations of risk and uncertainty (e.g., Kahneman, 1973; Kahneman and Tversky, 1979 Hirshleifer and Teoh, 2003 see Kunreuther et al. (2013) for an overview in the domain of health insurance). The number of choice options, switching costs, myopic preferences, menu and framing effects, probability weighting and limited consumer information have been studied as potential determinants of health plan choices (e.g., Schram and Sonnemans, 2011 Abaluck and Gruber, 2011; Ketcham et al., 2012; Heiss et al., 2013; Barseghyan et al., 2013; Bhargava et al., 2015; Handel and Kolstad, 2015; Schmitz and Ziebarth, 2016). Van Winssen et al. (2016) provide several behavioral explanations for the low uptake of voluntary deductibles in basic health insurance in the Netherlands. They suggest that providing specific information regarding the health insurance system or the individuals' health care expenditures may improve health insurance competence and, thus, decrease inertia. Heiss et al. (2016) test two different sources of inertia in Medicare Part D, namely switching costs and inattention. They present evidence that inattention contributes substantially to inertia in health plan choices. This is supported by Eisler (2009) who finds that a substantial share of Swiss residents is not aware of the magnitude of price differences between health plans and the related savings potential, which is one reason for the individuals' low intention to switch health plans. The objective of our paper is to expand on this literature and to gain a better understanding of the role of personalized information and limited attention in health insurance decisions. As it is difficult to control for the choice environment and learn more about the mechanisms guiding decision-making with observational data, we implement a laboratory experiment.

Our contribution to the literature on health insurance choices is threefold. First, we investigate the effects of providing personalized information on health plan choices in a laboratory experiment. This setup allows us to isolate the impacts of specific information interventions by randomly assigning participants to treatment and control groups, thereby systematically eliminating endogeneity issues that are omnipresent in observational data (e.g., Frechette and Schotter, 2015). Second, in contrast to existing experiments on health insurance choices (e.g., Schram and Sonnemans, 2011), we introduce two new and relevant features in our design: (*i*) inertia and (*ii*) incentivized distraction. We allow for inertia by offering subjects the option to, at the end of each round, either adjust their insurance decision or to remain inactive and retain their previous insurance plan. Thus, we can exclude the possibility of potentially distorting effects of forcing individuals to make active decisions (e.g., Dhar and Simonson, 2003). In addition, we contribute to the current discussion on inertia and inattention in health plan choices (e.g., Heiss et al., 2016) as our results generate direct insights about the effects of information on attention and consequently plan choice quality. We also impose opportunity costs on the health plan decision by allowing subjects to pursue an incentivized secondary task during each round. The rationale is to more closely mimic real-life choice situations where individuals have to allocate their attention to several competing tasks. We investigate how personalized information affects choice behavior and decision quality in this setup. Third, we observe not only the final insurance choice of an individual but also whether an individual made an active decision; we record the decision time, we document whether an individual changed contracts and whether expected costs were reduced, and we calculate the distance to the expected cost-minimizing contract in each round. These outcomes allow us to gain a better understanding of the mechanisms driving an individual's health plan choice in the experimental setup.

Our results suggest that providing personalized information has a positive effect on decision quality. Participants who received information on optimal health insurance coverage and potential cost savings had, on average, lower out-of-pocket expenditures for a given health status. Introducing an incentivized secondary task substantially reduced choice quality, as subjects moved further away from their optimal insurance coverage relative to subjects who were not distracted. This result may be explained by rational inattention because we observe a positive net effect on the individuals' bank account. Providing personalized information to individuals distracted by the incentivized secondary task had a strong and long-lasting positive effect on decision quality. The informed individuals selected better-suited health plans relative to those who were purely exposed to the distraction treatment. Regarding the underlying mechanisms, the effects seemed to operate mainly through the increased awareness of the choice setting and incorporation of the personalized information into the decision-making process. The latter is reflected in the finding that individuals more likely switched toward better-suited plans in the periods following the receipt of information than individuals who did not receive such information.

The remainder of the paper is organized as follows. Section 2 contextualizes our study in the broader literature on bounded rationality and limited attention. Section 3 briefly summarizes the main features of the Swiss health insurance system. Section 4 presents the hypotheses to be tested with our experiment. Section 5 describes the experimental design and data used for the analysis. Section 6 presents an overview of the econometric methodology. Section 7 describes the main results and findings regarding the choice mechanisms. Section 8 concludes the paper.

2. Related literature

The study of individual choice behavior has been of interest to economists for many decades. Under the neoclassical economic paradigm, individuals are fully rational and process all relevant information to make choices that maximize their expected utility. Individual preferences are assumed to be domain-independent and time-consistent. It is also assumed that preferences only depend on own payoffs and are not influenced by framing (see DellaVigna, 2009 for an overview). In the