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Measuring and explaining tax evasion: Improving self-reports using the crosswise model

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ABSTRACT

Due to its sensitive nature, tax compliance is difficult to study empirically, and valid information on tax evasion is rare. More specifically, when directly asked on surveys, respondents are likely to underreport their evasion behavior. Such invalid responses not only bias prevalence estimates but may also obscure associations with individual predictors. To generate more valid estimates of tax evasion, we used a new method of data collection for sensitive questions, the crosswise model (CM). The CM is conceptually based on the randomized response technique (RRT), but due to its advanced design, it is better suited for large surveys than classical RRTs. In an experimental online survey, we compared the CM ($N = 862$) to standard direct questioning (DQ; $N = 305$). First, our results showed that the CM was able to elicit a higher proportion of self-stigmatizing reports of tax evasion by increasing privacy in the data collection process. Second, on average, we found stronger effects of our predictor variables on tax evasion in the CM condition compared with the DQ condition such that an egoistic personality and the opportunity for tax evasion predicted actual tax evasion only in the CM condition.

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1. Introduction

Tax evasion presents a serious threat to society. It costs the state billions of dollars that could otherwise be spent on education, healthcare, infrastructure, or social services. In an attempt to uncover effective approaches for the prevention and combating of tax evasion, scientific research has put great effort toward studying tax evasion and its predictors (for an overview, see Alm, 2012).

However, in empirical work on tax evasion, it is very difficult to obtain valid information about this sensitive behavior. Most of the known measures of tax evasion suffer from inaccuracy (Alm, 2012; Alm & Torgler, 2011; Schneider & Enste, 2000). This holds in particular for survey measures that are based directly on taxpayer self-reports. Because survey questions about tax compliance can be regarded as very sensitive, respondents are expected to misreport their true behavior and

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answer in accordance with public norms because they may fear embarrassment in the interview situation or formal sanctions beyond the survey setting (Krumpal, 2013; Tourangeau & Yan, 2007). Due to such social desirability distortions, the prevalence of tax evasion will generally be underestimated, and effect sizes of individual predictors of tax evasion will be erroneous if respondents are interviewed using conventional data collection methods.

Therefore, for the present article, we applied a new alternative to standard direct questioning, the so-called crosswise model (CM; Yu, Tian, & Tang, 2008), an advancement of the randomized response technique (RRT; Warner, 1965) especially suited for large surveys. The CM might help to enhance the validity of prevalence estimates of tax evasion and its predictors in survey research. Using an experimental design, we compared estimates obtained with the CM with estimates from classical direct self-reports. In the following sections, we will review previous attempts to measure tax evasion and its predictors using surveys. Subsequently, we will present our main research questions and introduce the implementation of the CM. Finally, we will discuss our empirical results and conclude with some general considerations.

2. Measuring tax evasion

Tax evasion is an illegal act that violates the law and deviates from social norms that prescribe that taxes should be paid. Subjects committing tax evasion can expect severe repercussions such as criminal prosecution in the event that their behavior is uncovered. Those who evade taxes thus subsequently attempt to conceal their illegal behavior (Houston & Tran, 2001; Larkins, Hume, & Garcha, 1997). Because it is almost impossible to gather "hard," reliable, or at best, directly observable data on evasion behavior (Kirchler & Wahl, 2010), scientific research that is designed to estimate the prevalence and amount of tax evasion has relied on many different measurement approaches such as laboratory experiments simulating tax payment contexts, meticulous audits of individual returns, or the assessment of gaps between electricity consumption and official economic activity (for an overview of these approaches as well as their advantages and disadvantages, see Alm, 2012).

2.1. Measuring tax evasion via "classical" direct questioning in surveys

One further approach is direct measurement provided by surveys (e.g., Forest & Kirchler, 2010; Webley, Cole, & Eidjar, 2001; Wenzel, 2004, 2005). That is, respondents are asked whether or not they have evaded taxes in the past or whether or not they have reported all of their income on former tax returns (for a standardized test, see Kirchler & Wahl, 2010). Questions asking the respondents to self-report their tax evasion have been integrated into representative sample surveys such as the German General Population Survey (ALLBUS). On this basis, empirical researchers have tried to estimate the prevalence of tax evasion for all of society (e.g., Becker & Mehlkop, 2006). Moreover, survey data have the advantage of simultaneously measuring a variety of covariates (e.g., sociodemographic variables, opportunity structures, or personality characteristics) that are hypothesized to be associated with tax evasion, thus making empirical investigations of explanatory hypotheses possible.

One serious problem with direct survey measures, however, is measurement error due to systematic misreporting on questions that ask about sensitive behavior. More specifically, if respondents fear embarrassment or sanctions, they are likely to conceal their evasion behavior and provide socially desirable answers (i.e., they may systematically underreport the behavior of interest; Alm, 2012; Forest & Kirchler, 2010; Krumpal, 2013; Slemrod & Weber, 2012; Tourangeau & Yan, 2007). In a study comparing the self-reports of tax filers (whether or not they underreported their income or reported unwarranted deductions) with an actual classification of those filers into evaders and nonevaders on the basis of an in-depth examination of their last two tax returns by independent tax inspectors, Hessing, Elffers, and Weigel (1988) showed that 69% of the classified tax evaders denied their evasion in their self-reports. Although such a difference might, to a small degree, be explained by a lack of awareness, some tax filers' unintentional mistakes that were classified as tax evasion by the tax professionals, or some differences in the understanding of tax evasion by tax filers and tax professionals, such differences have been interpreted as empirical evidence for tax filers' socially desirable responding when questioned directly (Hessing et al., 1988; Kirchler & Wahl, 2010; Musch, Bröder, & Klauer, 2001).[1]

To reduce this kind of response bias, survey researchers have offered respondents the opportunity to submit their answers to the sensitive tax evasion question in a sealed envelope ("sealed-envelope technique"; Becker & Mehlkop, 2006; Sudman, Bradburn, & Schwarz, 1996) or to drop their completed questionnaires into a locked box ("locked-box technique"; Aitken & Bonneville, 1980). Other researchers have extended the term *tax evasion* to instead ask for *tax morale* (e.g., Frey & Torgler, 2007; Uslaner, 2007). Yet, it is obvious that the justifiability of and the attitude toward tax evasion are different from actual evasion behavior and that personally submitting answers in a sealed envelope or throwing them in a box may not grant the desired amount of anonymity. Furthermore, previous research has suggested the use of so-called de-jeopardizing techniques (Lee, 1993) such as the randomized response technique (RRT; Warner, 1965) or the crosswise model (CM; Yu et al., 2008), which were designed to minimize self-protective response bias and to elicit more honest answers to sensitive questions. For an overview of these techniques, see Krumpal (2013) or Krumpal, Jann, Auspurg, and von Hermanni (in press).

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[1] Hessing et al. (1988) also found that 25% of those who were classified as nonevaders by the tax professionals admitted some sort of tax evasion. However, because this result only demonstrates tax professionals' difficulties in detecting small or elaborated tax evasion, it is not considered important in terms of the discussed socially desirable responding to sensitive tax evasion questions.