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Research Note

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Is the Positive Effect of Education on Ethnic Tolerance a Method Artifact? A Multifactorial Survey Experiment on Social Desirability Bias in Sweden

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Abstract

Educated individuals are believed to be more tolerant towards ethnic minorities—a finding widely inferred from standard survey items. We propose a new approach that helps mitigate the risk of socially desirability bias (SDB), using a multifactorial survey experiment with name-based vignette dimensions. The experiment is strategically inserted into a question about a social dilemma not related to ethnicity. By embedding our experiment into an established survey—the Swedish part of the European Values Survey—we show that individuals with a high level of education are more tolerant towards ethnic minorities, even under a lower risk of SDB. The study strengthens findings in prior research and supports the hypothesis that education can further ethnic tolerance.

Education has long been promoted as the ultimate tool to foster ethnic tolerance (Hagendoorn & Nekuee, 1999; Stouffer, 1955). Studies across a wide range of country cases indicate that citizens with a higher level of education are overall more supportive of political candidates who represent minority groups (e.g., Heerwig & McCabe, 2009), more willing to extend social and political rights to members of society with a different ethnic or racial background than their own (e.g., Weldon, 2006), and generally more accepting of diversity in their community (e.g., Hello, Scheepers, & Sleegers, 2006). The positive relationship between education and ethnic tolerance is therefore largely considered one of the most consistent findings in social science research.

What makes this widespread and strong assertion about the role of education rather worrisome is that it is not based on a particularly solid foundation. Much of what we know about the topic has been developed by interpreting results of surveys with single-item questions. Ethnic tolerance is typically assessed by asking respondents direct questions about their views of members of a specific minority group (e.g., Hello et al., 2006; Weldon, 2006). The problem, however, is that respondents may conceal their true attitudes when asked directly about sensitive topics, that is, so-called social desirability bias (SDB).

As for the impact of education, "cognitive sophistication"—learned through either schooling or social contacts—has repeatedly been assumed to explain why the highly educated are more tolerant (Hagendoorn & Nekuee, 1999; Stouffer, 1955). The problem is that highly educated individuals are also likely be more aware of the sensitivity of certain—in our case, ethnic-related issues. In addition, they may have higher cognitive capacity to conceal socially undesirable responses when answering (more or less) demanding questions (e.g., Walzenbach, 2019). Therefore, the widely assumed positive relationship between education and ethnic tolerance might be considerably overestimated or even nonexistent.

One of the most promising and common solutions to the problem of SDB is the use of multifactorial survey experiments (MSEs; Auspurg & Hinz, 2015; Bansak, Hainmueller, Hopkins, & Yamamoto, 2021; Mutz, 2011). Respondents are typically presented with either a list of items (in "list experiments"), such as policy proposals or normative statements (Bansak et al., 2021; Comşa & Postelnicu, 2013), or a vignette, a written description of a fictitious scenario (Auspurg & Hinz, 2015; Stadtmüller, Silber, & Beuthner, 2022). Each respondent is then asked to evaluate the presented text as a whole, rather than giving answers relating to every detail. Variations between individual questions, groups, or respondents allow us to study the relationship between specific dimensions on an aggregate level without asking respondents about each dimension specifically; sensitive issues can thus be incorporated as one of several dimensions (Mutz, 2011). In the best-case scenario, respondents do not conceal their attitudes to this particular dimension but are offered an additional "cloak of anonymity" vs. in standard single-item questions (An, 2015; Hainmueller et al., 2014).

Using MSEs, researchers have been able to show that highly educated individuals tend to be particularly prone to SDB (Auspurg & Hinz, 2015). Equivalent research on tolerance, however, almost completely lacks studies of education

and social desirability. This is rather surprising, especially considering that survey experiments have become an established tool in attitudinal research on, for example, religion, race, and ethnicity (Besco et al., 2022; Heerwig & McCabe, 2009; Lajevardi, 2021; Moshagen & Musch, 2012). To our knowledge, the topic has only been touched on briefly in two studies, one based on a nationwide survey in Turkey (Aytaç & Çarkoğlu, 2019) and one conducted in a small city in Germany (Walzenbach, 2019). Both studies indicate a positive impact of education on tolerance towards religious and ethnic minority groups, even when MSEs are used to minimize the risk of SDB (Aytaç & Çarkoğlu, 2019; Walzenbach, 2019).[1]

The above-mentioned studies employ MSEs by randomizing information about ethnicity in their survey questions. However, we believe that the tool can be used even more effectively against SDB. The strategy we propose is to incorporate survey experiments on ethnic tolerance into questions about completely unrelated social dilemmas. In this way, respondents are not only provided with a "cloak of anonymity" but are actively distracted from the underlying assessment of ethnic tolerance, thereby being offered "psychological protection" (Kuklinski, Riggle, Ottati, Schwarz, & Wyer Robert, 1991). Details of this approach are introduced in the next section.

Our Design

We use a vignette-based approach with a "between design" (Auspurg & Hinz, 2015). This means that respondents are randomly allocated to experimental groups and presented with slightly different versions of a text that describes a fictitious scenario. We structured the core narrative of the experiment around a moral dilemma about meritocracy and gender equality, that is, whether the former or the latter should be prioritized when hiring a teacher at a school for 10- to 12-year-old children. The experimental element of the text, ethnicity, is indicated by using different sounding names for the (fictitious) applicant (details below). Hence, our treatment is not only embedded into a distracting question about an unrelated social dilemma but also introduced more subtly than in prior studies, which used more explicit descriptions of ethnic and religious attributes (Aytaç & Çarkoğlu, 2019; Walzenbach, 2019).

Our data were collected in Sweden, a country long viewed as exceptional in comparative research on public attitudes, with ethnic tolerance remaining relatively high in comparison with other countries (e.g., Gusciute, Mühlau, & Layte, 2021). However, in recent years, a more nuanced picture has emerged: field experiments in public administration and private-sector workplaces show considerable evidence of discrimination, particularly towards members of society who have roots in Muslim-majority countries in the Middle East (Adman, 2023; Arai, Bursell, & Nekby, 2016; Taghizadeh & Adman, 2022). These findings are substantiated by the recent electoral success of the right-wing Populist Party, the Sweden Democrats (Rydgren & van der Meiden, 2019).

Our experiment was incorporated into the Swedish sample for the fifth round of the European Values Survey (EVS), an established and well-regarded survey program with nationwide randomized sampling. Interviews for the study were conducted over the phone and face-to-face in two rounds in 2017 and 2018 (for more details on the sample, see Appendix 1). It is sometimes argued that respondents encountering actual interviewers might be particularly likely to manifest SDB. However, SDB has repeatedly been detected in completely anonymous online and offline settings as well, suggestively due to factors such as self-deception and identity definition (Larson, 2019).

Incorporating our experiment into a nationally representative survey allows us to compare the results of our experiment to a single-item measure of ethnic tolerance. The EVS has long included an item battery with an array of societal groups to assess the level of tolerance in society. Respondents are asked which of the presented groups they could or could not imagine having as neighbors. The variable for ethnic tolerance was coded as 1 if the answer did *not* include the group "Muslims" and 0 otherwise. Naturally, we are aware of the contextual differences between neighborhoods and schools as arenas of social interactions. Still, the two are traditionally studied in combination with each other in research on the social dimension of tolerance due to their strong interconnectedness (Dunn & Singh, 2014; Everett, 2018). Moreover, Islam and migration from the Middle East are (often conflated) sensitive topics in the Swedish public discourse. Therefore, no matter the exact choice of societal arenas, we would expect more tolerant answers from highly educated respondents in the single-item question The single-item measure thus serves as a benchmark against which we can compare the findings of our survey experiment.

Our experiment was placed last in the survey. About 65% of all EVS respondents provided answers to our questions (720 complete responses). Respondents were randomly assigned to either of two groups of equal size, each corresponding to different names of the individuals in the presented text. This means that each group was presented with a slightly different version of the same question. The text was phrased as follows:

> Imagine you have a child who goes to a middle school where most of the teachers are women.[2] A teaching position is advertised, and among the applicants are two suitable candidates whose qualifications as a whole are judged to be approximately equivalent. One is Johanna, a middle-aged woman who in the final assessment is found to have slightly more suitable qualifications for the advertised position. The other person is [**Abdelhakim/Martin**], a middle-aged man. The school decides to hire him, which means that he becomes a teacher of your child's class.

All respondents were asked to give their opinion on the decision using a four-point Likert scale: very bad (1), fairly bad (2), fairly good (3), and very good (4). The names "Abdelhakim" and "Martin" signal variation in the ethnic background of the fictitious applicant. They mirror the name combinations used in several Swedish field experiments on discrimination in public administration, the political arena, and the labor market (Adman, 2023; Arai et al., 2016; Taghizadeh & Adman, 2022). Male names were chosen not only due to the implied

[1] In the study by Walzenbach (2019), the substantially noticeable effects were not statistically significant; however, the sample size was notably small.

[2] "Middle school" refers to years 4–6 in the Swedish primary school system, that is, the children are about 10–12 years old. About 75% of the teachers in Swedish middle schools are women (see Skolverket 2018).

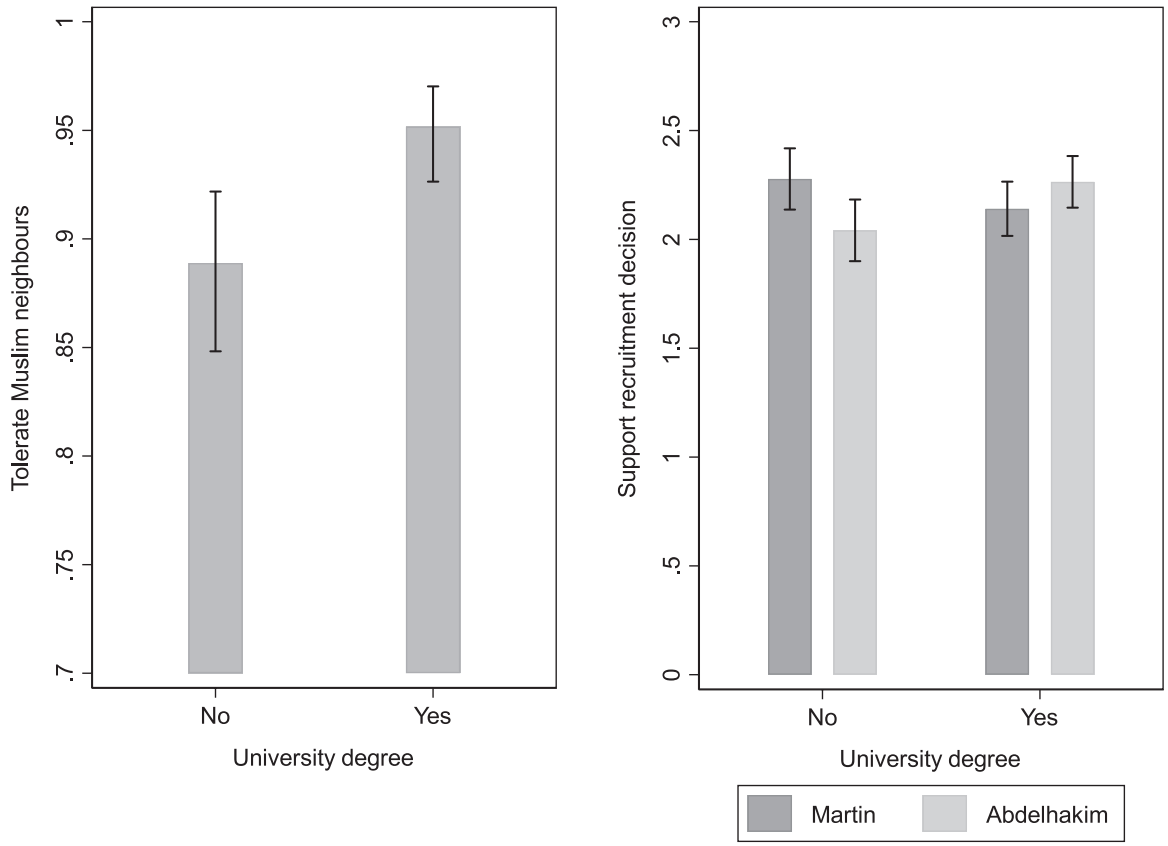

Figure 1. Results of the single-item measure (left) and the survey experiment (right) by level of education.

moral dilemma of the core narrative, but also because of research findings indicating that men with Arabic names face particularly high levels of discrimination in Sweden (Arai et al., 2016; Taghizadeh & Adman, 2022; Vernby & Dancygier, 2019).[3]

A balance table for the experiment can be found in Appendix 2, together with descriptive statistics on the covariates. The table indicates that the randomization for the experiment was quite successful. The two groups are very similar in terms of their responses to attitudinal questions and concerning most of their socio-demographic characteristics. However, only about 65% of the EVS respondents took part in the survey experiment. The final sample consists, specifically, of individuals who are better educated and more likely to live in a large city than the respondents in the full EVS sample.

Analytical Strategy

We employ regression analyses with ordinary least squares (OLS) estimates and robust standard errors for both the single-item measure of ethnic tolerance and our survey experiment. Robustness checks with logistic and ordered logistic regressions can be found in Appendix 6. The primary independent variable is a binary indicator that assumes a value of 1 if the respondent has a university degree and 0 otherwise. This dichotomy follows the main line of socio-economic division in the Swedish education system and labor market (OECD, 2015), and is used with the intention of facilitating interpretation of the results.[4] Control variables were included in all models for the analysis with the single-item approach in order to hold other determinants of ethnic tolerance constant. These are: gender, age, migration background, labor market status, residential area, interest in politics, and political ideology (cf. Hello et al., 2006).[5]

Results

Descriptive results for the two stages of our study can be found in Figure 1. About 93% of all respondents report that they would accept Muslims living in their neighborhood. The bars to the left in Figure 1 illustrate this, broken down by the level of education among respondents. Here we can see that the general level of ethnic tolerance is higher among individuals with a university degree (95.2%) compared to those without (88.9%). The 95% intervals for the two groups do not overlap. Descriptive results for the survey experiment can be found on the right-hand side of Figure 1. Average support for the recruitment decision is overall slightly lower in the "Abdelhakim" group (2.17) compared to the "Martin" group (2.20). This negative effect of the experiment is primarily driven by individuals

[3] The "Abdelhakim" group had a slightly lower response rate (64%) compared to the "Martin" group (66%). This could suggest that some respondents decided not to answer when they were presented with the experiment. However, the difference is small and the groups were otherwise balanced in terms of demographic characteristics (see Appendix 2).

[4] A reanalysis using a three-step variable (basic education, high-school degree, university degree) returns similar results. In particular, tolerance levels appear high among those with university education (for tables, see Appendix 5).

[5] The variable indicates whether or not the person lives in one of the major cities of Gothenburg, Malmö, Stockholm, or Uppsala.

Table 1. *Regression Results for the Single-Item Measure of Ethnic Tolerance*

	Model 1	Model 2
University degree	0.063** (.0027)	0.044* (.0456)
Intercept	0.889*** (.0000)	0.790*** (.0000)
Controls included		√
Observations	720	720
Adjusted R^2	0.014	0.070

Note. All regressions are performed with robust standard errors. Continues variables are centered at their mean. *p*-Values are presented in parentheses. $^*p < .001$, $^{**}p < .001$, $^{***}p < .001$

Table 2. *Regression Results for the Survey Experiment*

	Model 3	Model 4	Model 5
Experiment: "Abdelhakim"	−0.029 (.6629)	−0.236* (.0197)	−0.253* (.0124)
University degree	0.037 (.5804)	−0.137 (.1509)	−0.173 (.0804)
Experiment "Abdelhakim" × University degree		0.360** (.0072)	0.370** (.0058)
Intercept	2.180*** (.0000)	2.278*** (.0000)	2.144*** (.0000)
Controls included			√
Observations	720	720	720
Adjusted R^2	0.001	0.011	0.032

Note. All regressions are performed with robust standard errors. Continues variables are centered at their mean. *p*-Values are presented in parentheses. $^*p < .05$, $^{**}p < .01$, $^{***}p < .001$.

without a university degree (−0.24). Those with a university degree are, instead, slightly more inclined to support the decision (+0.12) if they were allotted to the "Abdelhakim" group.[6]

Regression results for the single-item measure are provided in Table 1. Education is found to have a positive effect (Model 1), even when controlling for other attitudes and core socio-demographic characteristics (Model 2). Having a university degree is found to increase ethnic tolerance by about 4 percentage points. This is a substantially large difference in relative terms, considering that only 7% of the respondents would not tolerate Muslims in their neighborhood. Supporting the overall validation of the models, the coefficients for the control variables shown in Appendix 3 follow findings from previous research (e.g., Hello et al., 2006).

Results of the regression analyses for the survey experiment can be found in Table 2. The findings show that support for the recruitment decision is slightly lower in the "Abdelhakim" group and slightly higher among individuals with a university degree (Model 3), although neither difference is statistically significant. This changes when the two variables are interacted (Model 4), whereupon both main effects decrease substantially. The difference between the two experimental groups then becomes statistically significant, whereas the interaction term returns a positive and significant result. This result remains robust, even if the control variables are included (Model 5). Ethnic tolerance is thus found to be noticeably higher among educated individuals even when the risk of SDB is mitigated through the survey experiment.

[6] Unsurprisingly, considering the limited sample size, when breaking down education and the treatment factor in this way none of these differences are statistically significant.

Concluding Discussion

We have presented a fresh set of empirical analyses concerning the relationship between education and ethnic tolerance. Compared with the two prior studies that briefly touch on the topic using an MSE design (Aytaç & Çarkoğlu, 2019; Walzenbach, 2019), we provide respondents with more leverage to "hide" their answers by incorporating the assessment of ethnic tolerance into a fictitious social dilemma between meritocracy and gender equality. Still, we reach the same conclusion, that education is in fact associated with a higher degree of ethnic tolerance.

The study further strengthens comparable results from previous contributions to the literature, through its more rigorous strategy for the mitigation of SDB. In other words, our study points to the conclusion that education indeed has a genuine effect and that it may very well serve as an antidote to prejudice and intolerance (Coenders & Scheepers, 2003; Hagendoorn & Nekuee, 1999; Stouffer, 1955). Hence, on the aggregate level, with education levels steadily increasing in countries like Sweden, higher tolerance levels regarding individuals with a background in the Middle East could be expected to follow. At least, this should be the case among the highly educated segments of the population.

There are two more points we would like to make. First, the standard single-item approach and the survey experiment provided very similar results. From a methodological perspective, our findings therefore support continuing to use

less space and cognitively demanding standard items, at least when investigating the relationship between education and ethnic tolerance. Second, our study focused on the school sector. Ultimately a matter for further empirical investigations, we would not be surprised if findings would be similar in other Swedish societal contexts besides the school sector, for example, in other employment sectors and in the political sphere.

Our study is of course not without limitations. First, about 35% of the EVS respondents did not take part in our experiment, so the final sample may consist of people who are overall more inclined to answer questions about sensitive issues. However, that the overall levels of ethnic tolerance may be overestimated does not necessarily imply that the relationship between tolerance and education is estimated incorrectly. Second, it is still possible that more educated respondents, in particular, may have discerned the purpose of the experiment and reported a more tolerant view than they actually hold, despite the additional distraction added here through the unrelated social dilemma. Finally, although we believe that we find a substantial effect, the reader should recall that the results are not based on a field experimental design particularly aimed at identifying causal effects in a real-life setting.

Our approach could be further developed in several ways. Expanding the experimental design by adding even more dimensions and social dilemmas may be one option for future research efforts, to the extent that it does not overburden respondents cognitively. For example, it would be conceivable to vary more than one (male) name in the experiment; for example, the female name could be varied along different ethnicities as well. Moreover, when using the approach in other countries, the particular social dilemma as well as ethnic groups and names being used may have to be changed and adapted, due to contextual differences. In particular, it would be interesting to employ our approach in more recently established democracies. Using conventional survey items, the effect of education has been found to be smaller in such contexts (Coenders & Scheepers 2003). It seems vital to investigate whether such smaller effects remain too, using the method we propose here.

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Supplementary Data

Supplementary data are available at *International Journal of Public Opinion Research* online.

Biographical Notes

Per Adman is an Associate Professor and Senior Lecturer, specialized into political attitudes and behavior, for example, in relation to ethnicity. He has published frequently, for example, in Electoral Studies, Journal of Social Policy, Political Behavior, and Political Research Quarterly.

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