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**Who Supports Free Trade in  
Developing Countries and Why:  
Comparative Advantage vs the Skill  
Premium**

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**Abstract**

Previous studies on free trade preferences in developing countries have shown mixed results thus supporting either model in international trade theory: free trade is favored by unskilled labor (the comparative-advantage model) or skilled labor (the skill-premium model). We apply the synthetic model by Burstein and Vogel while addressing two major issues overlooked in previous research. We distinguish (1) between education levels and occupational categories and (2) between preferences and reasons. Using a survey in Turkey we show that individuals who work in an unskilled occupation but who are better educated tend to favor free trade because of exports.

**Keywords:** Public opinion, Free trade, Comparative advantage, Skill premium, Turkey, Developing countries

**JEL classification:** [F14](#), [F16](#), [F66](#)

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## Introduction

Research on public opinion toward free trade has drawn on international trade theory; it initially applied the Heckscher-Ohlin and Stolper-Samuelson (HO-SS), or comparative-advantage model of relative factor abundance: people who own the factor (skilled labor or unskilled labor) that is relatively abundant in the country support free trade. Earlier research on developed countries has shown that skilled workers (managers and professionals) support free trade whereas unskilled (manual) workers oppose it. While unskilled workers should support free trade in developing countries according to the same model, the evidence is either weak or contrary to the expectation. Some studies argued then that the skill-premium model offers an alternative explanation: trade openness induces technological change that increases demand for skilled labor. More recently, however, Burstein and Vogel (2017) reconciled the comparative-advantage and skill- premium models to suggest that in developing countries free trade most benefits skilled labor in export firms/sectors (due to skill premium) that produce unskilled intensive goods (due to comparative advantage).

We apply their synthetic model to the Turkish case using a nationwide probability sample of 1,770 respondents while addressing two major issues overlooked in previous research on public support for free trade. First, the above findings for developing countries were drawn using quantitative measurements of labor skill, such as years of education or occupationally coded values. As a result, it is difficult to differentiate the effect of individual labor skill from that of occupational skill (occupationally required labor skill). We introduce detailed occupational categories to unravel the two separate effects on free trade preferences: individual labor skill measured by education level and

skilled/unskilled labor intensity associated with the occupation. As in other developing countries, self-employed and manual workers are the two largest unskilled occupational categories in Turkey. Second, previous research used support for free trade as the dependent variable without breaking it down into support for exports and imports. We use the multinomial dependent variable we examine not only who favors free trade but also why: because of exports, imports, or both. This is because the synthetic model indicates that free trade most benefits skilled labor in (unskilled intensive) export firms/sectors.

The results reveal that who support free trade depends on the reasons why. Individuals who are in unskilled occupations (self-employed or manual workers) but who are better educated tend to favor free trade because of exports. The overall evidence thus suggests that both the comparative-advantage and skill-premium models hold for a developing country such as Turkey. The outline of this paper is as follows. The next section reviews the literature and formulates the hypothesis. The research design section elaborates the data, sampling, and measurements. The results section presents the major findings from the multinomial logit model. Finally, the conclusion offers an interpretation of the results and a discussion of their implications.

## **Comparative Advantage and the Skill Premium in Developing Countries**

### ***Labor skill and occupational category***

The literature on free trade and public opinion has applied the combined Heckscher-Ohlin and Stolper-Samuelson (HO-SS) model of relative factor abundance: people who own the factor (skilled labor or unskilled labor) that is relatively abundant in the country support free trade. Earlier research on developed countries has shown that skilled

workers (managers and professionals) support free trade whereas unskilled (manual) workers oppose it (Gabel and Palmer 1995, Gabel 1998a, Gabel 1998b, Brinegar and Jolly 2005, Anderson and Kaltenthaler 1996, Anderson and Reichert 2009, Mansfield and Mutz 2009, Fordham and Kleinberg 2012, Tomiura et al. 2016).

For developing countries, the comparative-advantage model predicts that skilled labor opposes free trade and unskilled labor favors it but there are few relevant studies and their findings are mixed. Mayda and Rodrik (2005) showed that in developing countries, the effect of education or occupational skill on public support for free trade is either negative or weakly positive.<sup>1</sup> In contrast, other studies showed that skilled labor (measured by education level or occupation type) had a positive, not negative, effect on free trade preferences (Hicks, Milner, and Tingley 2014, Baker 2005, 2009, 2003, Beaulieu, Yatawara, and Wang 2005). Those scholars argue that free trade opinion in developing countries might be driven by skill premium rather than comparative advantage.

The skill-premium model in international trade theory claims that trade openness increases demand for skilled labor by triggering skill-biased technological change (Feenstra and Hanson 1996b, Wood 1997). The model is inherently premised on the impact of import liberalization that (1) increases market competition and/or (2) encourages the import of capital-intensive goods,<sup>2</sup> both of which induce technological change that favors skilled labor over unskilled labor (Goldberg and Pavcnik 2007, 62-65). While there is growing empirical evidence in the international trade literature for the skill-premium model as well as for the negative impact of trade liberalization on wage equality between skilled and unskilled labor (Meschi and Vivarelli 2009, Ha 2012, Franco and Gerussi 2013, Goldberg and Pavcnik 2007, Harrison, McLaren, and

McMillan 2011), it comes primarily from middle-income countries, rather than lower-income countries (Meschi and Vivarelli 2009, Franco and Gerussi 2013, Fukase 2013). The finding that the skill-premium model is better suited to higher-income (capital-abundant) developing countries than to lower-income (labor-abundant) developing countries is consistent with the outsourcing model developed by Feenstra (2004, 99-136).

It could be possible, however, to reconcile the comparative-advantage and skill-premium models. More recently, Burstein and Vogel (2017) who emphasized the distinction between factor intensity and productivity, demonstrated that the skill-premium effect does not have to be confined to middle-income developing countries. In a nutshell, even if the country has comparative advantage in unskilled intensive sectors, there is greater demand for productive, and therefore skilled, labor. Their model, which integrated the comparative-advantage (HO-SS) mechanism with the sectoral skill heterogeneity theory (Bernard et al. 2003, Melitz 2003), showed that reduced trade costs shift factors of production not only (1) toward comparative advantage sectors but also (2) toward skill-intensive (productive and exporting) firms within each sector and toward skill-intensive sectors, thus raising the relative demand for skilled labor in all countries, even in those where skilled labor is scarce.<sup>3</sup> Their results suggest that in developing countries free trade most benefits skilled labor in export firms/sectors that produce unskilled intensive goods.

Although the skill-premium model is compatible with the comparative-advantage model and presents a plausible explanation for both developed and developing countries, those cross-national studies used numerical measurements of labor skill, such as years of education (Mayda and Rodrik 2005, Hicks, Milner, and Tingley 2014, Baker

2005, 2009, 2003, Beaulieu, Yatawara, and Wang 2005) or values assigned to occupational categories (Mayda and Rodrik 2005). As a result, it is difficult to differentiate the effect of individual labor skill (years of education) from that of occupational skill (measured for occupational categories). For developed countries, this ambiguity of labor skill measurements does not matter because theoretically both numerous years of education (according to the skill-premium model) and manager/professional status (according to the comparative-advantage model) predict strong support for free trade.

[Insert Figure 1 here]

In contrast, for developing countries the ambiguity of labor skill measurements makes it difficult to reconcile the two models. Only if the skill-premium model applies to both manual workers and managers/professionals can it become compatible with the comparative-advantage model (Figure 2). Years of education make both unskilled and skilled occupations more pro-trade even though unskilled occupations are more pro-trade than skilled workers. Since the share of skilled occupational categories (managers and professionals) to total occupational categories is smaller in developing countries than in developed countries (Handel, Valerio, and Sánchez Puerta 2016, Kupets 2016), the negative effect of skilled occupational categories on free trade preferences does not override the positive effect of years of education on free trade preferences.

[Insert Figure 2 here]

The diversity of occupational categories in developing countries stems in part from the large presence of the self-employed, defined as “employers or own-account workers,” who comprise a third of workers in developing countries.<sup>4</sup> Employers are only slightly better educated than wage and salary employees while own-account workers are clearly less educated than wage and salary employees (Gindling and Newhouse 2014, 318, Table 2; Table 4). Additionally, employers (as self-employed) predominantly own small and medium-sized enterprises (SMEs) that employ half of all workers in developing countries (Ayyagari, Demirguc-Kunt, and Maksimovic 2014). In those SMEs, employers are often hardly more educated than wage and salary employees according to Gindling and Newhouse (2014). The self-employed category are therefore can be characterized as an unskilled occupational category rather than a skilled one.<sup>5</sup>

### *A comparative perspective on Turkey*

Turkey provides a representative case for the analysis of the separate impact of occupational labor skill and individual labor skill on public attitudes toward free trade because of the relevance of SMEs to exports. First, Turkey shifted its development strategy during the 1980s from import substitution industrialization under a state-led economy to export-led industrialization under a market economy. The latter strategy was most strongly accelerated by the Justice and Development Party (AKP) government that came to power in 2002. The ratio of trade to GDP increased from 30% in the 1980s to 50% in the 2000s,<sup>6</sup> while the ratio of foreign direct investment inflows to GDP grew from 25% to 180% during the same period. Second, Turkey’s small enterprises (henceforth including micro-enterprises) contributed to 38% of export value in 2014,<sup>7</sup> the fifth highest among 33 OECD countries (Figure 4); moreover, the position of the six

countries in the top rank can be attributed to small population size with the exception of Turkey. Since SMEs' share of employment is above 90% in Turkey, their strong export orientation benefits individuals in unskilled occupations that they dominate.

[Insert Figure 3 here]

[Insert Figure 4 here]

Third, export-oriented SMEs emerged in the 1990s, known as the Anatolian Tigers; the share of SMEs in Turkey's exports increased from 10% in 2000 (Organisation for Economic Cooperation and Development (OECD) 2004, 27) to 50% in 2010 (TurkStat 2018). Özar (2009, 209) argued that Anatolian Tigers are not competing firms but rather form a hierarchical structure of parent companies and their subsidiaries. Their workers are predominantly of low education and nearly half of their managers are only primary school graduates (Cizre-Sakallioglu and Yeldan 2000, 500). Fourth, levels of schooling for the labor force in Turkey are relatively low in comparison to countries with similar levels of economic development (Luca 2016, 481) as illustrated in Figure 5. This is partly because only the first five years of primary education were compulsory in Turkey until 1997. This created a significant shortage of skilled labor at least in terms of school education although a rapid increase in the number of universities since the 2010s mitigated the skilled labor shortage.

[Insert Figure 5 here]

### ***Hypothesis***

The previous discussion highlights, first, that both the comparative-advantage and skill-premium models focus on how free trade affects skilled/unskilled labor engaged with exports. Second, for developing countries the fact that years of education increases support for free trade does not necessarily reject the comparative-advantage model as long as unskilled occupational categories favor free trade (Figure 2), as the synthetic model demonstrated. The comparative-advantage model is thus more adept at explaining attitudinal differences between skilled and unskilled occupational categories than the skill-premium model, which better accounts for individual attitudinal differences within the same occupational category. Third, small businesses are essentially an unskilled occupation in developing countries including Turkey. Synthesizing the comparative-advantage and skill-premium models, we hypothesize therefore that individuals who work in unskilled occupations (such as small business owners and manual workers) but who are better educated tend to favor free trade because of exports.

## **Research Design**

### ***Dataset and sample***

The data ( $N = 1,770$ ) are from the Türkiye'nin Nabzı (Turkey's Pulse) survey conducted by the Metropoll opinion poll company using stratified probability sampling and weighting methods on 1,802 people interviewed face to face in 28 provinces based on the 26 regions of Turkey's NUTS 2 system between September 15 and 21, 2017. The descriptive statistics are shown in Appendix 1. The data that support the findings of this study are available from the corresponding author upon reasonable request.

### ***Dependent variable***

The multinomial pro-trade variable was generated in three steps. First, attitudes toward free trade were surveyed using the question “Over the last few years trade between Turkey and other countries of the world has increased. The major reason is a reduction in obstacles to trade. This tendency is called ‘free trade.’ Are you for or against free trade? Please choose your answer from the following: Strongly against, Against, Neither for nor against, For, Strongly for.” The answers “For” and “Strongly for” were coded as “Supportive,” while “Strongly against,” “Against,” “Neither for nor against,” and “Don’t know” or “No answer” were coded as “Not supportive” (instead of deleting “No answer” listwise) in accordance with Mayda and Rodrik (2005).<sup>8</sup> Second, the reason for the above answer was asked as follows: “Is the main reason for your opinion for or against free trade related to imports, exports, or both?” The answers were coded for the three alternatives plus “Don’t know” or “No answer.” Third, five categories were created for the pro-trade variable: 1 = Support free trade because of imports, 2 = Support free trade because of exports, 3 = Support free trade because of both imports and exports, 4 = Support free trade for no specific reason, 5 = Don’t support free trade.

It is necessary to clarify the reason for the support of free trade because, besides the comparative-advantage and skill-premium models that are built on benefits from greater export, the consumption model points to consumer benefits from greater imports in developing countries. In Brazil, an opinion poll in 1999 showed that free trade supporters referred to consumer welfare (such as price reduction and quality increase) twice as frequently as job creation while opponents cited job losses most often (Baker 2003, 440-441). In Turkey, however, job creation (81.7%) is a more frequent reason for support of free trade than consumer welfare as represented by price reduction (61.1%).<sup>9</sup>

Our weighted sample indicates that exports account for 19.2% of the reasons for supporting free trade whereas imports alone and both imports and exports constitute respectively 10.3% and 48.1% of the reasons; there remain 22.4% without specific reasons.

### ***Major independent variables***

Besides the skilled and unskilled occupational categories, previous research also found that export-sector jobs are associated more with pro-trade opinion than the import-competitive sector jobs (Fordham and Kleinberg 2012, Urbatsch 2013) whereas comparative-disadvantage job sectors are less pro-trade than non-traded sectors (Mayda and Rodrik 2005). Although our dataset does not include the export/import sector category, we did introduce the public/private divide to capture the relevance of international trade to respondents' economic interests. The public sector category can also serve as an anchor or reference category. Since the public sector is less exposed to international trade than the private sector, we do not expect the public sector to be inclined to free trade. The literature also suggests that there is not much opposition to imports in developing countries. This is because imports primarily consist of capital-intensive goods, which are necessary for production, and skill-intensive goods, which affect the skilled labor that makes up a smaller share of the labor force (Baker 2005, 2003, 2009, Feenstra 2004). The question therefore primarily centers on which occupational categories are more favorable to exports than others.

Occupational category was coded by a set of dummy variables consisting of 1 = Business owner (owner of small or large business), 2 = Manager (high level manager), 3 = Manual worker, 4 = Service/sales worker, 5 = Public servant, 6 = Professional

(doctor, engineer, etc.), 7 = Independent profession (financial consultant, lawyer, etc.), 8 = Unemployed, 9 = Retired, 10 = Student, 11 = Homemaker, and 12 = Other. In the ensuing analysis, the public servant category is used as the reference category; we assume that public servants have relatively stable attitudes toward free trade whether because of imports, exports, or both. We assume that the overwhelming majority of business owners are self-employed either as employers or as own-account workers.

Individual skill level is approximated by education level, in accordance with the literature. The effect of education may be more complex than the skill-premium model, which assumes that more-educated (and thus skilled) workers are more pro-trade than less-educated (or unskilled) workers. Hainmueller and Hiscox (2006) showed that a college education, but not other levels of formal education, is correlated with pro-trade attitudes, apparently through exposure to economics knowledge; controlling for value attachments or tolerance did not affect the results. Rho and Tomz (2017) also argue that most people do not understand the effect of protectionism; economics knowledge, however, changes their behavior to pursue their own self-interests.

We tried to control for exposure to economics knowledge by asking the respondents how close their view is to the statement that “[f]ree trade creates jobs in Turkey.” The answers were coded as 1 = Very distant, 2 = Distant, 3 = Neither distant nor close, 4 = Close, 5 = Very close, and 99 = Don’t know. These answers yielded two types of economics knowledge variable. One is a six-category variable, i.e., a set of five dummy variables using the first category as the reference category. This “economic theory” variable measures how the respondent’s understanding of free trade conforms to orthodox economic theory. There is a possibility, however, that this variable partly reflects preferences for free trade (“Because free trade creates jobs, I support free

trade”) in addition to economics knowledge. The other is a single dummy variable coding the “Don’t know” answer as 1 and the rest as 0. For this “economics opinion” variable we assume that individuals who lack economics knowledge are less likely to answer the question than those with economics knowledge.

### ***Control variables***

When trade liberalization has been a major strategy of economic development for the country, sociotropic (rather than egotropic) economic evaluation (Gabel and Whitten 1997) and incumbent support (Baker 2003) positively affect preferences for free trade. Respondent evaluations of the national economy over the last 12 months and the last 5 years were measured on a five-point scale (1 = very negative; 2 = negative; 3 = neither positive nor negative; 4 = positive; 5 = very positive). The question was “How do you view the country’s economic condition for the last 12 months/5 years?” For the above questions, “Don’t know” and “No answer” were treated as missing values. Since the preliminary analysis showed that the evaluation for the last five years is the stronger predictor, this variable was used for the estimation models. Incumbent support is a dummy variable that represents the “AKP” answer in response to the following question: “Which party would you vote for if there was an election this Sunday?” All other answers, including non-responses, were coded as 0.

Values such as ethnocentrism and nationalism can affect free trade opinion (Mayda and Rodrik 2005, Mansfield and Mutz 2009). For Turkey as well, Aydin (2014) showed that values are more important determinants of support for free trade than demographic variables. Our dataset did not include any variables that measure attachments to values. As an approximation we used political identity, which was coded into 11 categories:

“Idealist” (far-right ultranationalist), “Nationalist,” “Kurdish nationalist,” “Traditional conservative,” “Religious conservative,” “Democrat,” “Liberal,” “Ataturkist,” “Social democrat,” “Socialist,” and “Other.” Obviously, this variable does not gauge the strength of attachments to political identity.

Among sociodemographic variables, gender was coded as zero for men and one for women. There is evidence that women are less pro-trade than men because they are less favorable to competition, relocating for work, and activist foreign policy (Mansfield, Mutz, and Silver 2015). Age was measured as five dummies: 18-24, 25-34, 35-44, 45-54, 55 or above. Religious affiliation was divided into five categories: 1 = “Sunni Muslim,” 2 = “Alevi Muslim” (the largest non-Sunni Muslim religious affiliation in Turkey), 3 = “Atheist,” 4 = “Other,” 5 = “Don’t know” or “No answers.” The first two categories constituted nearly 98% of the responses. Ethnicity was coded into six categories: 1 = “Turkish,” 2 = “Kurdish” (the largest non-Turkish ethnic group in Turkey) including Zaza (the second largest subgroup in the Kurds), 3 = “Arab,” 4 = “Ethnicity not important,” 5 = “Other,” and 6 = “Don’t know” or “No answer.”

Mayda and Rodrik (2005) found that, for a sample of developed and developing countries, both high-income and upper-social class identity increase support for free trade, suggesting that high spending power or a luxurious life style generates demand for free trade. The monthly household income was initially measured at nine levels: 0 - 500 TL, 501 - 1000 TL, 1001 - 1500 TL, 1501 - 2000 TL, 2001 - 2500 TL, 2501- 3000 TL, 3001- 3500 TL, 3501 - 4000, and TL 4001 TL or above and then converted to a continuous variable with each level representing the range mean (i.e., 250 TL, 750 TL, and so on ). Their estimation results were almost the same whether the set of dummies or the continuous variable was used.

## Estimation Results

### *Occupation and education*

In this section, we first go over descriptive statistics that characterize the relationship between occupational categories and education levels and then present the results of multinomial-logit model estimation. Burstein and Vogel (2017), who used a parameterized model for 60 countries, found that the share of workers with a tertiary degree in the industrial sector is a good approximation to the share of skilled labor. Accordingly, we use the share of university graduates by occupational category as the measurement of occupational skill. On one hand, only 13.8% of business owners and 10.8% of manual workers are university graduates. We call them the unskilled group, which form 38.8% of the total occupational categories and 62.4% of the in-work occupational categories. On the other hand, for each of the other in-work occupational categories, independent professions (financial consultants, lawyers, etc.), managers, service/sales workers, and professionals (doctor, engineer, etc.), and public servants, at least one-third are university graduates. Although there is significant variation in education level among these categories, it would be realistic to call these categories, except for public servants, the skilled group due to its small size (only 8.0% of the weighted sample) of relatively skilled occupational categories. Public servants stand as a separate neutral category because they are outside the private sector.

### *Multinomial logit model*

Because the coefficients from the multinomial-logit model are relative to the base outcome (i.e., the reference category for the dependent variable: “Don’t support free

trade”) and, thus, difficult to interpret, we have estimated the average marginal effect of a one-unit change in each independent variable on the probability of observing an outcome holding other variables at their observed values; this is called average because marginal effects differ by the value of the independent variable due to the non-linearity of logistic function. Table 2 shows the average marginal effects of increasing each variable by one unit.<sup>10</sup> Education was measured as a continuous variable here whereas in Appendix 2 education was measured as a five-category variable. These two models yielded very similar results.<sup>11</sup> There are two contrasting patterns in which occupational category and education level determine pro-trade attitudes. On one hand, the impact of occupational category on pro-trade attitudes varies widely by reason in accordance with comparative advantage. On the other hand, education level consistently affects only pro-export attitudes, which gives credence to the skill-premium model.

[Insert Table 2 here]

Here, we discuss these two features in more detail. First, for unskilled labor, business owners attribute their pro-trade preferences to “exports” and “both imports and exports” while manual workers attribute their preferences to “exports.” For a majority of business owners exports are the primary business objective but imports of capital-intensive and intermediate goods are also essential for producing exports; for manual workers, their wages and job opportunities significantly depend on export performance. Second, for skilled labor, imports are not the reason for their support of free trade: skilled labor has to compete with skill-intensive goods that dominate the imports of developing countries. Third, retirees appear supportive of exports and non-supportive of

imports. Although their average marginal effects are the largest among the occupational categories, their large standard errors (nearly twice as large as for the other occupational categories) requires caution in interpretation. Nevertheless, there are previous studies that found the retirees support free trade (Urbatsch 2013, Mansfield and Mutz 2009, Gabel and Palmer 1995, Gabel and Whitten 1997). In the Turkish context, the law stipulates that pensions are adjusted to inflation and GDP growth. It would be rational for retirees to expect exports rather than imports to contribute to economic growth and thus to increase their pensions.

With respect to education level, pro-export opinion is stronger among more highly educated respondents. In the (multinomial) logit model the effect of an independent variable on the probability of the given outcome is nonlinear and dependent on the value of the independent variables. Since the number of people who are in skilled occupational categories is relatively small, we collapsed four occupational categories (independent professions, managers, service/sales workers, and professionals) into the skilled group; business owners and manual workers were collapsed into the unskilled group.

The estimation results that used these recoded occupational categories are shown in the reduced model in Appendix 3. Based on this reduced model, Figure 6 illustrates that the impact of years of education on pro-export opinion is stronger for the unskilled than skilled group: for the unskilled group the impact of 16 years of formal education (equivalent to university graduate) is significantly larger than that of no formal education, whereas for the skilled group the impact of 16 years of education did not significantly differ from that of 0 years of education. Although the skill-premium effect has been confirmed for the sample as a whole, it is predominantly attributed to unskilled

labor.

[Insert Figure 6 here]

In sum, support for free trade because of exports is stronger among unskilled labor occupational categories such as business owners and manual workers, a result consistent with the comparative-advantage model. Similar patterns were not observed for imports alone, both imports and exports, or no specific reason. Second, however, support for imports is not accounted for by business owners, manual workers, or university graduates. Support for both imports and exports is associated with business owners and manual workers to a lesser extent than support for exports but not with any education level. These results indicate that unskilled labor intensity, labor skill, and export orientation are synthetic determinants of public support for free trade.

The control variables by and large indicated expected effects. The long-term evaluation of the national economy had a significant effect on support for free trade for all types of reasons. The negative sign of incumbent support can be explained by its high correlation (Spearman's rho = 0.65) with the evaluation of the national economy. Household income and gender are correctly signed. Kurdish ethnicity was positively and Alevi religious affiliation was negatively associated with three reasons for support for free trade. The impact of political identity was relatively small and varied by the type of reasons. In our preliminary logit model analysis, the effect of Kurdish ethnicity and Alevi affiliation on support for free trade was statistically significant ( $p = 0.16$ ,  $p = 0.01$ , respectively) while none of the political identity categories had any significant effect.

### ***Robustness checks***

There is concern that high education level represents exposure to economics knowledge more than labor skill as was discussed in the previous section. To check for this possibility, we added to Model 1 each of the two variables for economics knowledge: “economic theory” (Model 3) and “economic opinion” (Model 4), as shown in Appendix 3. If exposure to economics knowledge is strongly correlated with education level, the effect of education will be reduced. The results show, however, that the effect of education level remains largely unchanged, especially for the reason of exports. In Model 3, respondents who agree with the statement based on orthodox economic theory that free trade creates jobs in Turkey tend to support free trade. If those who agree with the statement were highly educated, the effect of education level would have been much weaker than in Model 1. In Model 4, respondents who showed any opinion on the statement are more likely to support free trade because of export than those without any opinion. The inclusion of this economic opinion variable even slightly increased the effect of education level.

The “economic theory” variable, however, perceptibly reduced the effect of occupational category on attitudes toward free trade. On support because of export, only manual workers and managers show positive and negative effects respectively. It appears that expectations of job creation through export vary substantially across occupational category. Even though the question asked about the possible effect of free trade on job creation in Turkey, the respondents might have answered with regard to their own job opportunities.

## **Conclusions**

The two competing models, comparative advantage and skill premium, have yielded ambiguous results for developing countries. This paper reconciled the two models by giving greater clarity to operationalization. First, using the probability sample of 1,770 respondents that represents the Turkish population, we introduced detailed occupational categories to unravel two separate effects on free trade preferences: individual labor skill measured by education level and skilled/unskilled labor intensity associated with occupation. As in other developing countries, self-employed and manual workers are the two largest groups in the unskilled occupational categories. Second, we used the multinomial dependent variable (support for free trade because of imports, exports, both, or non-support) to examine not only who favors free trade but also the reasons why. The results revealed that support for free trade depends on occupational skill, individual skill, and the reasons why. Individuals who work in unskilled occupations (such as small business owners and manual workers) but who are better educated tend to favor free trade because of exports. The evidence suggests that both the comparative-advantage model and the skill-premium models hold for a developing country such as Turkey.

The conclusions of the present study provide us with implications and limitations, and therefore require further scrutiny. First, this research shows only a snapshot of how labor skill affects public opinion on free trade in Turkey. The effect of changes in economic conditions or political sentiments were beyond the scope of this paper. Second, regarding the theory of skill premium, the synthetic model by Burstein and Vogel differs

from the skill premium model in that the former regards reduced trade costs and the latter import-induced technological change as key to greater demands for skilled labor. While we adopted the latter model for its synthetic and empirical appeals, we could not provide sufficient theoretical justification for choosing this model over the other. Third, the synthetic model indicated that the benefit of free trade accrues most intensively to export sectors while the survey question did not ask which sector the respondent worked for. The fact that the respondent chose “exports” as the main reason for supporting free trade does not necessarily mean that she worked for the export sector. Fourth, because of limitations on the number of questions we could ask, we could not include attitudinal questions that play an important role in opinion formation on free trade. We have nevertheless shown an original contribution by showing that in developing countries: the relationship between occupational category and pro-trade opinion is diametrically opposite to the one in developed countries and that skill counts even in the unskilled occupational category.

## Notes

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<sup>1</sup> Using the sample of both developed and developing countries, Mayda and Rodrik (2005) showed that the larger the per capita GDP, the more positive the effect of education or occupational skill on support for free trade. The insignificant effect of education on public support for free trade in Turkey, found by Aydin (2014), does not divert from this general tendency given Turkey is a middle-income country.

<sup>2</sup> Capital-intensive goods are regarded as complementary to skilled labor.

<sup>3</sup> Burstein and Vogel (2017, 1) meanwhile showed that within the same industrial sector, larger and exporting producers are more skill intensive than smaller and domestic ones.

<sup>4</sup> Gindling and Newhouse (2014) estimated that employer and own-account workers

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respectively account for 2.7% and 32.7% of the workers in the 74 developing countries.

<sup>5</sup> To the extent that SMEs' share of the country's exports becomes large, their wage level approaches that of larger firms (OECD 2018, 6), indicating that exporting SMEs are more productive with higher skill premium than other SMEs.

<sup>6</sup> Trade liberalization was boosted by the ratification of the Customs Union agreement with the European Union in 1995.

<sup>7</sup> Moreover, micro-enterprises defined as employing fewer than ten workers account for as much as 17.4% of export value. SMEs accounted for 29.4% of import value in 2014.

<sup>8</sup> The reduced sample after listwise deletion nearly the same results as the full sample. The former results are available from the author.

<sup>9</sup> In parentheses are weighted percentages.

<sup>10</sup> Prior to the multinomial logit model analysis, we ran a logit model with support for free trade as the dependent variable (1 = Support free trade for any reason, 0 = Don't support free trade) and the same independent variables as Model 1. The average marginal effect of education level was positively signed but statistically insignificant. Among the occupational categories, business owners, manual workers, retirees, and homemakers supported free trade at the 0.01 significance level.

<sup>11</sup> Although in Appendix 2 the effect of high school graduation is slightly smaller than that of middle school graduation, years of education in Table 2 shows a robust linear effect ( $p = 0.003$ ). We thus used years of education to estimate the impact of education for skilled and unskilled occupational categories;

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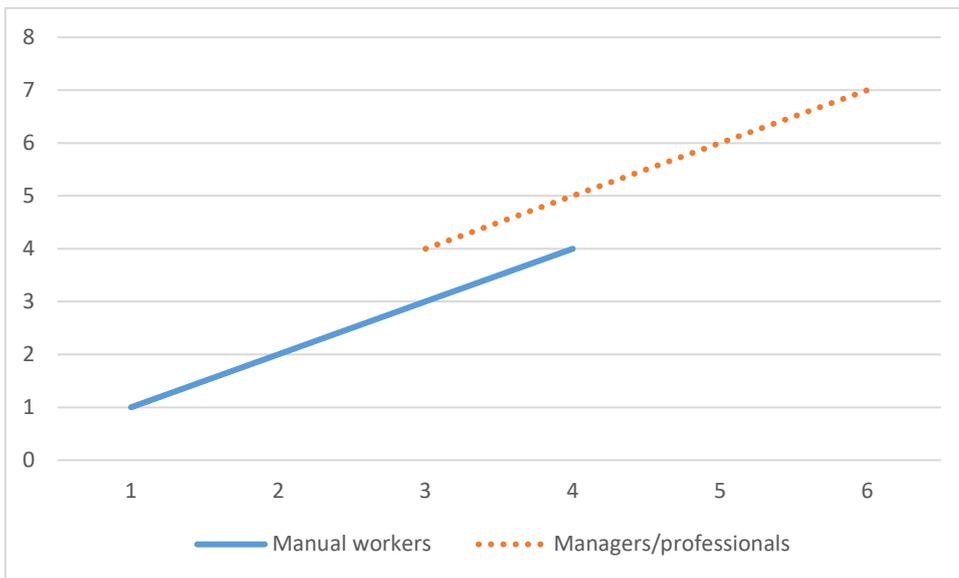
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Figures and Tables

**Figure 1. Impact of Education and Occupation on Trade Attitudes:  
Developed Countries**

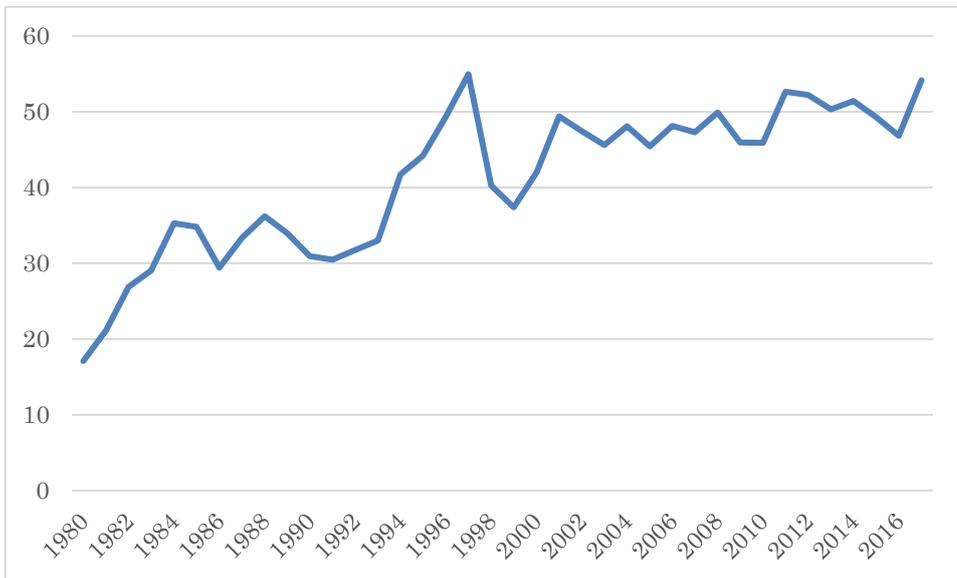


*Notes:* Hypothetical. Education level ranges from 1 to 6.

**Figure 2. Impact of Education and Occupation on Trade Attitudes:  
Developing Countries**



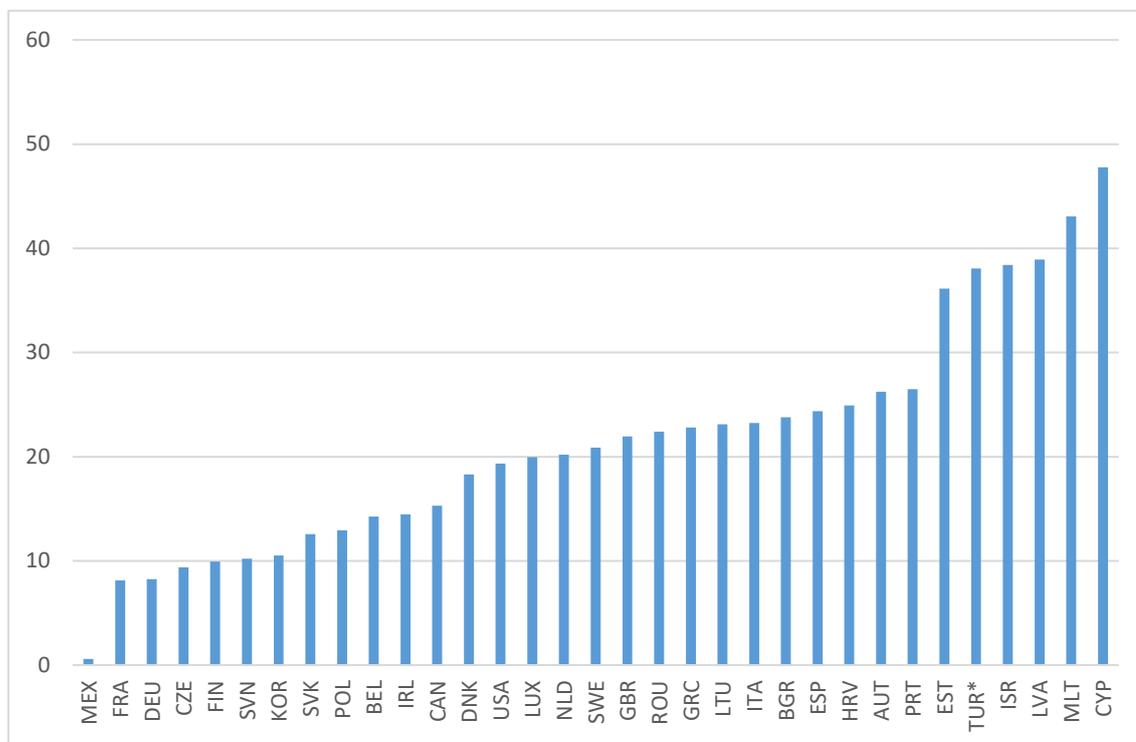
**Figure 3. Turkey's Trade (% of GDP)**



*Source:* World Development Indicators Database. Last Updated: 11/14/2018.

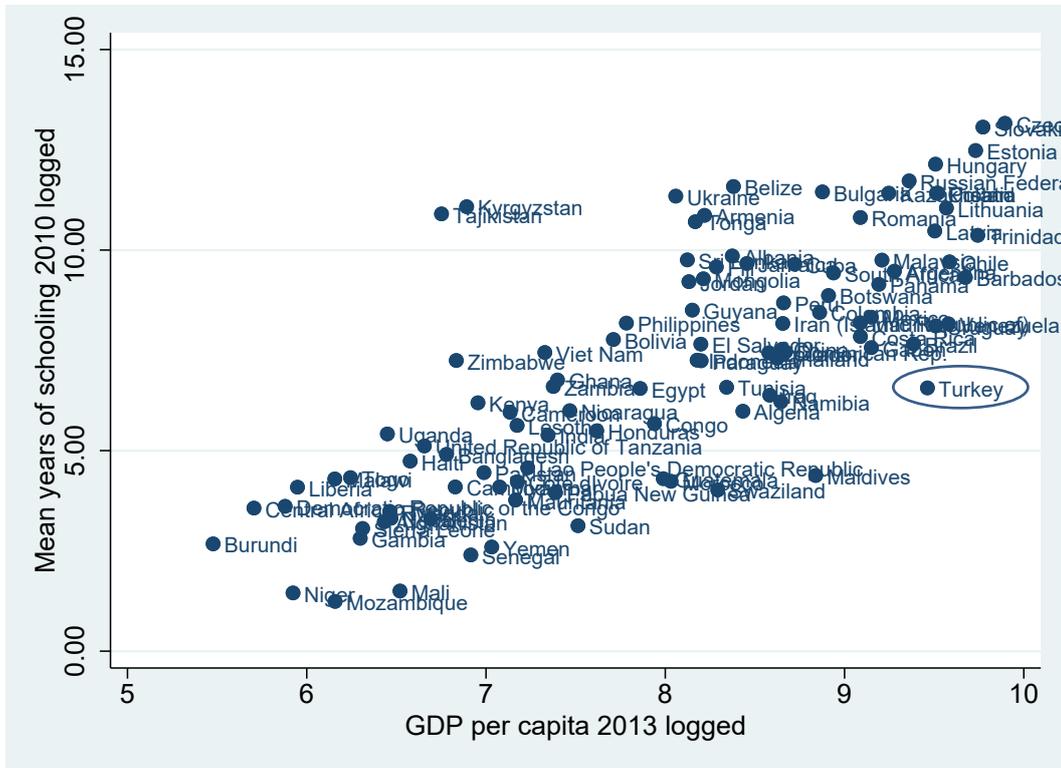
*Note:* Trade is the sum of exports and imports of goods and services measured as a share of GDP.

**Figure 4. Percent Share of Micro- and Small Enterprises in Export Value**



Source: OECD (2018), Exports by business size (indicator). doi: 10.1787/54d56e8b-en (Accessed on 16 October 2018)

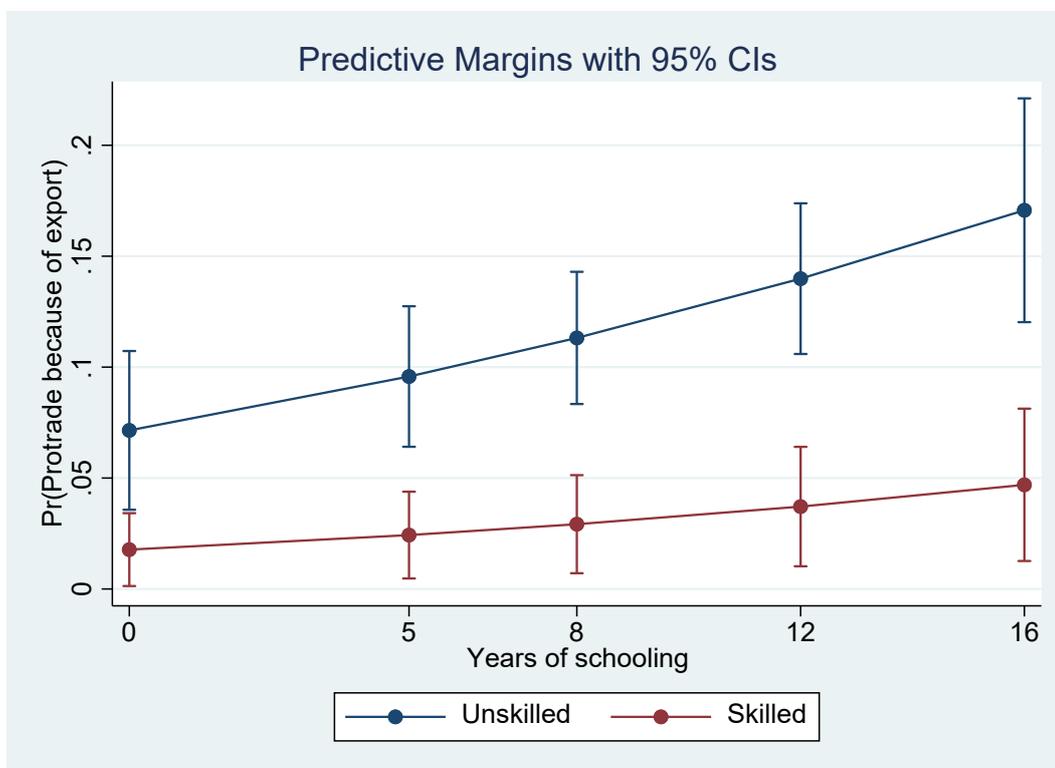
**Figure 5. GDP per Capita and Mean Years of Schooling in Developing Countries (N = 103)**



Sources: Barro and Lee (2013) and World Bank (2017).

Note: GDP per capita 2013 is in 2010 constant USD.

**Figure 6. Probability of “Pro-trade Because of Exports” by Education Level for Skilled vs. Unskilled Occupational Categories**



*Notes:* The graph is based on the results of the reduced model (Model 2) in Appendix 3. The predictive margin shows the probability of the multinomial pro-trade variable taking a value of 2 (= “Support free trade because of exports”) for skilled vs. unskilled occupational categories when all the other independent variables are held to their respective means. The unskilled are business owners and manual workers; the skilled are independent professions, managers, service/sales workers, and professionals.

**Table 1. Percent of Export and Import Value by Business Size**

Business size: Num. of employees	Turkey	Germany	France
	Export		
0-9	17.4	3.0	3.2
10-49	20.7	5.3	4.9
50-249	43.5	66.9	68.0
250 and more	18.4	11.3	8.9
	Import		
0-9	6.2	4.8	5.1
10-49	13.2	8.6	8.2
50-249	62.2	55.6	61.4
250 and more	18.4	13.5	10.8

*Source:* Compiled by the author from OECD (2018), Exports [Imports] by business size (indicator). doi: 10.1787/ef8f00b7-en (Accessed on 10 October 2018)

*Notes:* Export and import values in USD. According to the OECD definition, “SMEs employ fewer than 250 people, with further subdivision into micro-enterprises (fewer than 10 employees), small enterprises (10 to 49 employees), medium-sized enterprises (50 to 249 employees). Large enterprises employ 250 or more people.”

**Table 2. Four Reasons for Favoring Free Trade (Model 1)**

	Imports	Exports	Both	Don't know
Years of education	-0.00150	0.00602***	0.00197	-0.00250
(school levels converted)	(0.00221)	(0.00200)	(0.00349)	(0.00270)
Occupational category: Public servant			Reference	
Business owner	-0.0417	0.0802***	0.131**	0.0619
	(0.0357)	(0.0301)	(0.0606)	(0.0463)
Manual worker	-0.0175	0.0669***	0.0748	0.0276
	(0.0362)	(0.0256)	(0.0491)	(0.0364)
Independent profession	-0.0933***	-0.0289	0.297**	-0.0189
(financial consultant, lawyer, etc.)	(0.0337)	(0.0291)	(0.125)	(0.0598)
Manager	-0.0867**	-0.0497***	0.152	-0.00134
	(0.0387)	(0.0190)	(0.120)	(0.0662)
Service/sales worker	-0.0648*	0.0153	0.0368	0.0661
	(0.0375)	(0.0317)	(0.0674)	(0.0673)
Professional (doctor, engineer, etc.)	-0.0667*	-0.0362	-0.149**	0.0951
	(0.0397)	(0.0229)	(0.0712)	(0.0971)
Unemployed	-0.0933***	0.0441	0.122	0.00406
	(0.0337)	(0.0474)	(0.0861)	(0.0540)
Retired	-0.0746*	0.188***	0.0655	0.0363
	(0.0381)	(0.0589)	(0.0685)	(0.0478)
Student	-0.0596	0.0256	0.00886	-0.0345
	(0.0373)	(0.0365)	(0.0636)	(0.0409)
Homemaker	-0.0142	0.0580*	0.0451	0.0517
	(0.0408)	(0.0324)	(0.0561)	(0.0422)
Other	-0.0617	0.109	-0.0320	0.160*
	(0.0490)	(0.0705)	(0.0897)	(0.0923)
National economy last five years:			Reference	
Very bad				
Bad	0.0687*	0.114**	-0.00284	0.0261
	(0.0417)	(0.0453)	(0.0572)	(0.0516)
Neither bad nor good	0.0778*	0.122**	0.0721	0.0732
	(0.0424)	(0.0491)	(0.0631)	(0.0554)
Good	0.124***	0.152***	0.148**	0.0836

	(0.0455)	(0.0480)	(0.0641)	(0.0541)
Very good	0.172***	0.0971*	0.189***	0.0706
	(0.0460)	(0.0536)	(0.0680)	(0.0564)
Incumbent support	-0.00848	-0.00149	-0.0892**	0.0542**
	(0.0183)	(0.0236)	(0.0378)	(0.0275)
Household income: 000TL	0.0179***	0.0394***	0.0164	-0.00570
	(0.00677)	(0.00941)	(0.0145)	(0.0120)
Gender	0.00484	-0.0131	-0.0232	-0.0127
	(0.0179)	(0.0213)	(0.0301)	(0.0242)
Age: 18-24			Reference	
25-34	-0.00936	-0.0168	0.0377	-0.0516
	(0.0232)	(0.0342)	(0.0497)	(0.0365)
35-44	-0.0550**	0.00183	0.0416	-0.0548
	(0.0244)	(0.0343)	(0.0504)	(0.0365)
45-54	-0.0529**	0.0000630	0.0351	-0.0378
	(0.0266)	(0.0361)	(0.0529)	(0.0379)
55 or above	-0.0273	-0.0300	-0.0127	-0.00842
	(0.0337)	(0.0476)	(0.0601)	(0.0413)
Ethnicity: Turkish			Reference	
Kurdish	0.0356	-0.0644***	0.0726	0.0264
	(0.0269)	(0.0247)	(0.0451)	(0.0357)
Arab	-0.0507***	0.150	-0.0478	-0.0498
	(0.00745)	(0.101)	(0.102)	(0.0498)
Ethnicity not important	-0.0507***	0.0844	-0.0685	-0.0652
	(0.00745)	(0.130)	(0.123)	(0.0742)
Other	0.0280	-0.0115	0.0469	0.0305
	(0.0629)	(0.0507)	(0.0944)	(0.0600)
Don't know	0.0937	-0.119***	0.326	-0.119***
	(0.135)	(0.0103)	(0.276)	(0.0121)
Religion: Sunni Muslim			Reference	
Alevi Muslim	0.0339	-0.0249	-0.146***	-0.0409
	(0.0414)	(0.0313)	(0.0435)	(0.0433)
Atheist	0.126	0.210	-0.0678	-0.125***
	(0.0908)	(0.128)	(0.140)	(0.0110)

Other	-0.0357 (0.0247)	-0.0582 (0.0606)	-0.231*** (0.0636)	0.207 (0.173)
Don't know	0.0177 (0.0792)	0.0362 (0.0999)	-0.275*** (0.0291)	0.0186 (0.135)
Political identity: Idealist				
	Reference			
Nationalist	0.0127 (0.0307)	-0.0592 (0.0557)	0.105** (0.0434)	-0.00163 (0.0503)
Kurdish nationalist	-0.0121 (0.0368)	0.00264 (0.140)	0.160 (0.114)	0.00542 (0.0830)
Traditional conservative	0.00235 (0.0314)	-0.0788 (0.0558)	0.183*** (0.0522)	-0.0485 (0.0500)
Religious conservative	-0.00220 (0.0328)	-0.138** (0.0560)	0.229*** (0.0568)	0.0123 (0.0547)
Democrat	0.0757 (0.0598)	-0.0808 (0.0651)	0.0896 (0.0577)	-0.0580 (0.0533)
Liberal	0.0513 (0.0969)	-0.0898 (0.0744)	0.0447 (0.0954)	0.000707 (0.0949)
Ataturkist	0.0570 (0.0374)	-0.0951* (0.0565)	0.131** (0.0534)	-0.0409 (0.0532)
Social democrat	0.0960 (0.0613)	-0.122* (0.0628)	0.136 (0.0876)	-0.133*** (0.0452)
Socialist	-0.0405 (0.0284)	-0.161** (0.0639)	0.0709 (0.112)	0.0773 (0.121)
Other	0.0382 (0.0453)	-0.0812 (0.0656)	0.184*** (0.0683)	0.0493 (0.0648)
<i>N</i>	1524	1524	1524	1524

*Notes:* The education variable replaced each school level with the number of years required to complete each school level: 0, 5, 8, 12, and 16.

\*  $p < 0.10$ , \*\*  $p < 0.05$ , \*\*\*  $p < 0.01$ .