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ECONOMIC BELIEFS AND PERCEPTIONS OF MIXED-GENDER TEAMS

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ABSTRACT. Is there an association between economic beliefs and perceptions of the efficacy of mixed-gender teams? We approach this question for Latin America using the 2018 Latinobarometer survey. One of the questions in the survey asks respondents if they believe mixed-gender teams in the workplace produce better, worse, or equal results than teams formed exclusively by men. A different question in the same survey asks respondents about their attitudes towards international trade. We explore the relationship between the answers to these two questions. Because women and men bring different skills, points of view, and experiences to a team, pro-trade individuals may be inclined to identify these differences as comparative advantages, and regard mixed-gender teams as the spaces that make the profitable exchange of these advantages possible. Thus, pro-trade individuals may be more likely to perceive mixed-gender teams as more effective than teams formed exclusively by men. Our findings support this theory.

Introduction

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1. Literature review

David Ricardo's classical theory of comparative advantage states that differences in relative labor productivity lead to specialization and subsequent trade. The powerful implication of the theory is that trade will inevitably produce gains for all parties. Pro-trade individuals are likely to subscribe to this idea explicitly or intuitively.

Attitudes towards trade

Several studies have found that individuals with higher levels of human capital, as measured by education and occupational earnings, are more supportive of trade than individuals with low levels of human capital (Baker, 2003; Mayda and Rodrik, 2005; O'Rourke and Sinnott, 2001; Scheve and Slaughter, 2001). Other economic factors, like asset ownership (Scheve and Slaughter, 2001), industry of employment (Mayda and Rodrik, 2005; Scheve and Slaughter, 2001), and consumer preferences for product variety (Baker, 2003), have also been shown to influence trade attitudes. Among non-economic factors, political ideology has been found to be an important determinant of individuals' attitudes towards trade (Mayda and Rodrik, 2005; O'Rourke and Sinnott, 2001).

Attitudes towards mixed-gender teams

Attitudes towards mixed-gender teams have been scarcely explored in the literature. A key paper by Ellison and Mullin (2014) finds that offices with higher levels of gender diversity experience lower levels of cooperation, implying that people prefer to have co-workers of the same gender. Interestingly, Ellison and Mullin (2014) also find that, although mixed-gender teams generated higher revenues than single-gender teams, members of mixed-gender teams reported lower job satisfaction. In this context, our findings suggest that pro-trade individuals may value the ultimate results (higher revenues) more than other considerations.

Studying the relationship between attitudes towards trade and attitudes towards mixed-gender teams is important, particularly for developing countries, where traditional biases may persist despite modernization (Hermans, 2017).

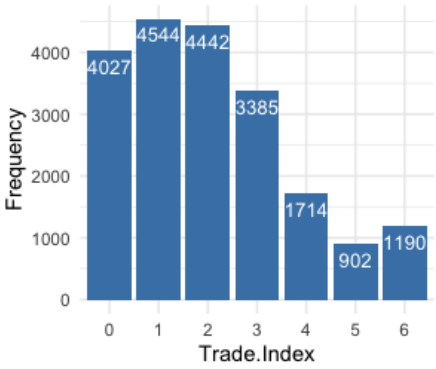
2. Data

We use data from the 2018 Latinobarometro survey (Latinobarómetro Corporation, 2018), which includes approximately 20,000 interviews in 18 Latin American countries (Argentina, Bolivia, Brazil, Chile, Colombia, Costa Rica, Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Panama, Paraguay, Peru, Uruguay and Venezuela). The survey represents a population of 600 million in the region.

Perceptions regarding the efficacy of mixed-gender teams result from the question: "Do you think that a work team formed by men and women will have better (1), worse (2) or equal (3) results than a team formed only by men?" (we recoded results to get a binary response with

1 representing "better" and 0 representing "worse" or "equal.") We named the resulting categorical variable *Efficacy.of.MGT* (efficacy of mixed gender teams).

Beliefs about international trade are derived from the question: "What do you think are the consequences of increased trade with other countries (name as many as you want), or do you think it has no consequences (0)? (1) higher employment, (2) higher salaries, (3) greater product variety, (4) lower prices, (5) more and better access to technology, (6) better personal economic situation." Note that the consequences are worded in a positive way. We added each of these results to get an index for which, the higher the number, the more "pro-trade" a person is. We named the resulting variable *Trade.index*. Figures 1 and 2 show the histogram and averages per country for this variable. In the histogram, it is interesting to note that the distribution is skewed to the left, indicating that most individuals think that free trade with other countries carries only three or less positive consequences out of the six possible. Concerning the average of the index by country, it is worth noting that Costa Rica has the highest index and Bolivia the lowest. Next to Costa Rica is Venezuela, which is interesting, and perhaps puzzling, given the recent history of socialism in the country. It may be possible that people in socialist societies have a greater appreciation for free trade than people in capitalist societies.



Trade.index is the sum of the number of positive responses to six questions regarding the effects of free trade. Zero means that the person did not mention any benefit of free trade. Six means that the person mentioned all the six benefits of free trade. Accordingly, the larger the number the more pro-trade the person is. Numbers in white represent the frequency.

Figure 1. Trade.index
Source: *own compilation*

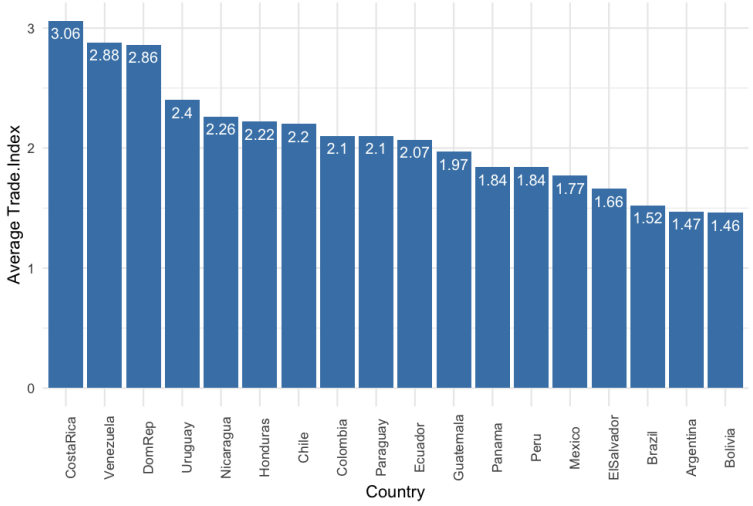


Figure 2. Average Trade.index by country
Source: *own compilation*

Table 1 presents descriptive statistics for our two main variables as well as for a large set of control variables. We control for age, ethnic identity and religious identity. These last two variables take the value of 1 if the person considers himself indigenous and Catholic, respectively, and 0 otherwise. We also control for marital/cohabitant status – this variable takes the value of 1 if the person is married or cohabiting, and 0 otherwise. We also control for years of education (schooling). In addition, we control for a subjective perception of the salary – this variable can take the values of 1 (salary is not sufficient) to 4 (salary is sufficient). Finally, we include control variables identifying if the person works in a private company, supports democracy, is satisfied with his life, and trusts others.

Notice that we also create the dummy variable *Trade.dummy* that takes the value of 0 if *Trade.index* is 0, 1, or 2 (not pro-trade), or 1, if the index is 4, 5, or 6 (pro-trade). This new variable does not consider observations where *Trade.index* is equal to 3, which can be interpreted as being neither pro nor not pro-trade.

Table 1. Descriptive statistics

Variable	N	Mean	St. Dev.	Min	Max
Efficacy.of.MGT	19,521	0.571	0.495	0	1
Trade.index	20,204	2.083	1.693	0	6
Trade.dummy	16,819	0.226	0.418	0	1
Male	20,204	0.48	0.5	0	1
Age	20,204	40.564	16.524	16	100
Agesq	20,204	1,918.45	1,514.91	256	10,000
Indigenous	17,439	0.114	0.318	0	1
Catholic	19,984	0.593	0.491	0	1
Married.cohabitant	20,142	0.526	0.499	0	1
Education	18,990	8.707	4.146	0	14
Salary	19,704	2.507	0.887	1	4
Private.worker	20,204	0.178	0.383	0	1
Democracy	19,178	2.811	0.795	1	4
Life.satisfaction	20,052	3.052	0.873	1	4
Trust	19,628	0.147	0.354	0	1

Source: *own compilation*

3. Results

We estimate the following model:

$$Efficacy.of.MGT = a + b\ Trade.index + c\ CV,$$

Where a is a constant, b is the coefficient of interest and c is a vector of coefficients for the vector of control variables, CV, as defined in Table 1.

Table 2 shows our results. *Trade.index* is the independent variable and *Efficacy.of.MGT* is the main independent variable. Model 1 is a logit regression between these two variables plus demographic control variables. Results are presented as odds ratios. Model 2 adds economic control variables. Model 3 adds political control variables, and Model 4, the most complete specification, adds social attitudes control variables. Model 4 suggests that for a one-unit increase in *Trade.index*, the odds of *Efficacy.of.MGT* being equal to 1 increase by a factor of 1.064. Other statistically significant variables in Model 4 include *Male* (0.88), which means that being male is associated with a 12 percent reduction in the odds that a person supports mixed-gender teams, and *Education* (1.03), *Democracy* (1.11), and *Left-right* (1.018).

Table 2. Odds Ratios, *Trade.index*

	Dependent variable: *Efficacy.of.MGT*							
	(1)		(2)		(3)		(4)	
Trade.index	1.071	***	1.071	***	1.065	***	1.064	***
	(0.011)		(0.011)		(0.012)		(0.012)	
Male	0.878	***	0.883	***	0.88	***	0.882	***
	(0.029)		(0.03)		(0.033)		(0.033)	
Age	1.016	***	1.016	***	1.018	***	1.016	**
	(0.006)		(0.006)		(0.006)		(0.006)	
Agesq	1	**	1	**	1	**	1	*
	(0.0001)		(0.0001)		(0.0001)		(0.0001)	
Indigenous	0.957		0.961		1.039		1.035	
	(0.052)		(0.053)		(0.064)		(0.064)	
Catholic	0.949		0.947		0.929	*	0.93	*
	(0.034)		(0.034)		(0.037)		(0.038)	
Married.cohabitant	0.95		0.956		0.925	**	0.931	*
	(0.033)		(0.034)		(0.036)		(0.037)	
Education	1.031	***	1.03	***	1.031	***	1.03	***
	(0.005)		(0.005)		(0.005)		(0.006)	
Salary			1.035	*	1.037		1.034	
			(0.021)		(0.023)		(0.024)	
Private.worker			0.981		0.94		0.957	
			(0.044)		(0.046)		(0.047)	
Democracy					1.106	***	1.108	***
					(0.027)		(0.027)	
Leftright					1.018	***	1.018	***
					(0.006)		(0.006)	
Life.satisfaction							1.003	
							(0.023)	
Trust							1.086	
							(0.058)	
Constant	0.388	***	0.359	***	0.231	***	0.236	***
	(0.057)		(0.057)		(0.045)		(0.048)	
Country controls	yes		yes		yes		yes	
Observations	15,694		15,405		12,668		12,393	

*p<0.01, **p<0.05, *** p<0.01
Source: *own compilation*

As mentioned in the Introduction, one possible mechanism that explains the positive relationship between *Trade.index* and *Efficacy.of.MGT* is that pro-trade individuals may be more inclined to recognizing that men and women bring different skills to a team. Research suggests that men and women differ in their communication, influence, and leadership tactics (Radu et al., 2017; Zenger and Folkman, 2019). Additionally, men may embrace competition more than women (Niederle and Vesterlund, 2007). Individuals who recognize the value of trade are likely to identify these differences as comparative advantages and evaluate mixed-gender teams as being more effective than a team formed exclusively by men.

We can also capture beliefs about trade using the dichotomous variable *Trade.dummy* instead of *Trade.index*. Table 3 shows these results. Again, we find a significant positive relationship between *Trade.dummy* and *Efficacy.of.MGT*. Importantly, the size of the coefficient is larger when using *Trade.dummy* than when using *Trade.index*. Indeed, being pro-

trade is associated with increasing odds of *Efficacy.of.MGT* being equal to 1 by a factor of 1.25. The results regarding other variables are consistent with those presented in Table 1.

Table 3 Odds ratios, *Trade.dummy*

	Dependent variable: Efficacy of mixed gender teams							
	(5)		(6)		(7)		(8)	
Trade.dummy	1.283	***	1.28	***	1.261	***	1.25	***
	(0.058)		(0.058)		(0.063)		(0.063)	
Male	0.872	***	0.875	***	0.867	***	0.868	***
	(0.032)		(0.032)		(0.036)		(0.036)	
Age	1.015	**	1.015	**	1.015	**	1.014	**
	(0.006)		(0.006)		0.007		0.007	
Agesq	1	**	1	**	1	*	1	
	(0.0001)		(0.0001)		(0.0001)		(0.0001)	
Indigenous	0.954		0.957		1.04		1.037	
	(0.056)		(0.057)		(0.069)		(0.07)	
Catholic	0.913	**	0.91	**	0.895	**	0.9	**
	(0.036)		(0.036)		(0.04)		(0.041)	
Married.cohabitant	0.954		0.961		0.927	*	0.936	
	(0.036)		(0.037)		(0.04)		(0.041)	
Education	1.029	***	1.028	***	1.029	***	1.027	***
	(0.005)		(0.005)		(0.006)		(0.006)	
Salary			1.044	*	1.053	**	1.047	*
			(0.023)		(0.026)		(0.026)	
Private.worker			1.015		0.984		0.999	
			(0.051)		(0.054)		(0.056)	
Democracy					1.122	***	1.124	***
					(0.03)		(0.03)	
Leftright					1.012	*	1.014	*
					(0.007)		(0.007)	
Life.satisfaction							1.019	
							(0.026)	
Trust							1.14	**
							(0.067)	
Constant	0.471	***	0.419	***	0.25	***	0.243	***
	(0.076)		(0.072)		(0.054)		(0.055)	
Country controls	yes		yes		yes		yes	
Observations	12,988		12,739		10,356		10,122	

*p<0.01, **p<0.05, ***p<0.01
Source: *own compilation*

Selection bias and matching algorithms

Our logit estimates may be biased because attitudes towards trade may be correlated with other covariates that affect attitudes towards mixed-gender teams. We use Propensity Score Matching (PSM) to partially address this concern. PSM involves matching high pro-trade attitude observations with low pro-trade attitude observations, by the observable covariates listed in Table 2. Because observations that do not have a match are dropped, the results of the PSM create a counterfactual in which attitudes towards trade are randomly assigned. The matching algorithms used are listed in Table 4. Consistent with our previous results, the average treatment effect on the treated (ATT) is positive and significant for all matching algorithms.

The average odds ratio ATT is 1.28. This means that being pro-trade is associated with increasing odds of *Efficacy.of.MGT* being equal to 1 by a factor of 1.28.

To assess the magnitude of omitted variable bias we calculate the Rosenbaum bounds (Rosenbaum, 2002) for our PSM matching results. Table A1 in the appendix shows that the upper bound p-value crossed the critical threshold of 10% at $\Gamma = 1.2$ for *Trade.dummy*. This means that if 1) we fail to account for an unobservable characteristic associated with a 20 percent increase in the odds of being treated, and 2) that unobservable characteristic has a strong relationship with perceptions regarding mixed-gender teams; then the significance level of the coefficient of *Trade.dummy* may go above 10%. This means that the PSM matching results, for the nearest neighbor without replacement algorithm, are affected only by moderate bias.

Table 4. Propensity Score Matching

Outcome: *Efficacy.of.MGT*	*Trade.dummy* ATT				Sample sizes	
	ME	OR	p	SE		
Nearest neighbor without replacement	0.090	1.312	***	0.059	2588	2588
Nearest neighbor with replacement	0.100	1.360	***	0.064	1843	2588
Nearest neighbor without replacement, ratio 2	0.079	1.259	***	0.052	5176	2588
Nearest neighbor with replacement, ratio 2	0.088	1.300	***	0.056	3109	2588
Nearest neighbor with replacement, caliper 0.25	0.056	1.190	**	0.063	2017	2588

*p<0.01; **p<0.05;***p<0.01
ME: Marginal effect; OR: Odss ratio; SE: Standard error
Source: *own compilation*

Genetic matching (Diamond and Sekhon, 2013) allows us to further examine the relationship between pro-trade attitudes and attitudes towards mixed-gender teams. Genetic matching pairs observations on all covariates rather than only on the propensity-score. The results of genetic matching are displayed in Table 5. Consistent with previous results, genetic matching indicates that pro-trade is associated with increasing odds of *Efficacy.of.MGT* being equal to 1 by a factor of 1.21.

Table 5. Genetic Matching

Outcome: *Efficacy.of.MGT*	*Trade.dummy* ATT				Sample sizes	
	ME	OR	p	SE		
Genetic matching with replacement	0.062	1.208	**	0.064	1985	2588

*p<0.01, **p<0.05, ***p<0.01
ME: Marginal effect; OR: Odds ratio; SE: Standard error
Source: *own compilation*

Conclusion

We find a significant positive relationship between pro-trade attitudes and positive perceptions of the efficacy of mixed-gender teams. Consistent with logit results, PSM results indicate that pro-trade individuals are 1.19 to 1.36 times more likely to prefer mixed-gender teams to teams consisting exclusively of men (Table 4). PSM results allow us to address potential observable bias. Our findings can be interpreted through the lens of comparative advantage: pro-trade individuals might consider mixed-gender teams as more effective because males and females bring different skills to the marketplace.

Mixed-gender teams have been found to produce higher revenues than single-gender teams (Ellison and Mullin, 2014). Following this evidence, revenue driven organizations may want to maximize the use of mixed-gender teams in their organizational structure. Our paper

shows that individuals holding pro-trade attitudes (which can be thought of as a proxy for pro-free market attitudes) see mixed-gender teams more favorably than individuals holding opposing views. Our results can serve, therefore, as an important input for revenue driven organizations at the time of building their human capital.

Statements and declarations

Competing Interests: The authors did not receive support from any organization for the submitted work.

Conflicts of interest: The authors have no relevant financial or non-financial interests to disclose.

Availability of data and material: The dataset generated during and/or analyzed during the current study are available in the Latinobarometro repository (https://www.latinobarometro.org/lat.jsp).

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Appendix

Table A1. Sensitivity analysis (Rosenbaum bounds)

Γ	Lower Bound	Upper bound
1	0.00001	0.00001
1.1	0	0.00305
1.2	0	0.10621
1.3	0	0.54956
1.4	0	0.91776
1.5	0	0.99483
1.6	0	0.99987
1.7	0	1
1.8	0	1
1.9	0	1
2	0	1

Surce: *own compilation*