

2-2021

## Economics Students: Self-Selected in Preferences and Indoctrinated in Beliefs

Antonio M. Espín  
*Chapman University*

Manuel Correa  
*University of Granada*

Alberto Ruiz-Villaverde  
*University of Granada*

Follow this and additional works at: [https://digitalcommons.chapman.edu/esi\\_working\\_papers](https://digitalcommons.chapman.edu/esi_working_papers)



Part of the [Econometrics Commons](#), [Economic Theory Commons](#), and the [Other Economics Commons](#)

---

### Recommended Citation

Espín, A.M., Correa, M., & Ruiz-Villaverde, A. (2021). Economics students: Self-selected in preferences and indoctrinated in beliefs. *ESI Working Paper 21-03*. [https://digitalcommons.chapman.edu/esi\\_working\\_papers/339/](https://digitalcommons.chapman.edu/esi_working_papers/339/)

This Article is brought to you for free and open access by the Economic Science Institute at Chapman University Digital Commons. It has been accepted for inclusion in ESI Working Papers by an authorized administrator of Chapman University Digital Commons. For more information, please contact [laughtin@chapman.edu](mailto:laughtin@chapman.edu).

---

# Economics Students: Self-Selected in Preferences and Indoctrinated in Beliefs

## Comments

ESI Working Paper 21-03

# **Economics students: self-selected in preferences and indoctrinated in beliefs**

Antonio M. Espín<sup>1</sup>, Manuel Correa<sup>2,\*</sup>, & Alberto Ruiz-Villaverde<sup>2</sup>

## **Author affiliation:**

1. Department of Social Anthropology, University of Granada, Campus de Cartuja, s/n, 18071, Granada, Spain.

2. Department of Applied Economics, University of Granada, Campus de Cartuja, s/n, 18071, Granada, Spain.

\* Corresponding author, e-mail: [manuelcorrea@ugr.es](mailto:manuelcorrea@ugr.es)

## **Abstract**

There is much debate as to why economics students display more self-interested behavior than other students: whether *homo economicus* self-select into economics or students are instead “indoctrinated” by economics learning, and whether these effects impact on preferences or beliefs about others’ behavior. Using a classroom survey (n>500) with novel behavioral questions we show that, compared to students in other majors, econ students report being: (i) more self-interested (in particular, less compassionate or averse to advantageous inequality) already in the first year and the difference remains among more senior students; (ii) more likely to think that people will be unwilling to work if unemployment benefits increase (thus, assuming others are motivated primarily by self-interest), but only among senior students. These results suggest self-selection in preferences and indoctrination in beliefs.

**Keywords:** self-selection, indoctrination, self-interest, inequality aversion, beliefs

**Classification codes:** A11, A13, A22, D31, D63, D9, I22

## **1. Introduction**

The conventional economics paradigm, which is taught in most universities and business schools, models economic activity as an interaction between individual economic agents pursuing exclusively their self-interest. As a branch of rational choice theory, standard microeconomics may be described from three dominant principles, namely: methodological

individualism, a certain view of rationality linked to mathematical optimization, and a role for equilibrium as a descriptive and explanatory mechanism (Ruiz-Villaverde 2019).

The elaboration of neoclassical economic models starts with a representative individual, the *homo economicus*, which is assumed to be a self-interested rational optimizer. That is, s/he is capable of ordering preferences in a completely consistent manner and choose the best alternative for own consumption or production (Frank 1987; Thaler 2000; Urbina and Ruiz-Villaverde 2019). That is why many researchers (e.g., Carter and Irons 1991; Frank et al. 1993; Cappelen et al. 2015; Bauman and Rose 2011; Frey and Meier 2005) have wondered if the study of these economic models, based on the rational pursuit of the own interest, promotes a type of related behavior in students.

Yet, behavioral differences between students with economic training (such as economics, business administration, finance, and accounting; for simplicity, we label all these majors as “Econ”) and students of other disciplines could be attributed to two possible effects (Carter and Irons 1991):

(1) An *indoctrination effect*: Econ students are shaped by economic training. Behavioral differences between Econ and non-Econ students are thus expected to increase during their studies. This stems from the fact that standard economics is based on a mathematical language devoid of ethical symbols, the acceptance of an economic/rational view of the world, and a set of simplified assumptions about how the real world works (Daboub et al. 1995). In other words, the argument goes that Econ students are trained to see the world through the lens of the *homo economicus* which is axiomatically assumed in economic theory.

(2) A *self-selection effect*: a particular type of individuals, i.e., *homo economicus*, chooses to study degrees with a strong economic component. This effect entails that Econ and non-Econ students differ already at the start of their studies. Therefore, behavioral differences may be due to this selection process rather than any effect of economic education.

A large literature is devoted to analyzing these effects, but many questions remain. The general pattern is that Econ students are more self-interested than non-Econ students, and recent evidence suggests that beliefs about others’ behavior explains part of such difference since Econ students are more likely to think others will behave in a self-interested manner (Gerlach

2017). However, some studies suggest that Econ students are less prosocial due to an indoctrination effect (e.g., Frank et al. 1993; Haucap and Müller 2014; Ifcher & Zarghamee 2018), while others find that this is due to self-selection (e.g., Meier and Frey 2004; Frey and Meier 2005; Mertins and Warning 2014; Frank and Schulze 2000). Finally, contrary to expectations, a few studies find evidence that Econ students are more willing to cooperate (e.g., Hu and Liu 2003; Yezer et al. 1996).

In behavioral and experimental economics, self-interested behavior is typically studied within the framework of social (or other-regarding) preferences. It is a stylized fact that individuals do not always behave as selfish maximizers. Individuals often take into consideration the welfare of others and are willing to sacrifice part of their income to favor them. Formally, behavioral deviations from the prescriptions of the (narrow) self-interest paradigm have been modeled through different approaches, including inequality aversion (Fehr and Schmidt 1999; Bolton and Ockenfels 2000), social welfare maximization (Charness and Rabin 2002; Engelmann and Strobel 2004), and reciprocity (Rabin 1993; Falk and Fischbacher 2006).

Among these different approaches, in this study we focus on distributional preferences. Specifically, we build on the inequality aversion model of Fehr and Schmidt (1999) which allows for a key asymmetry between advantageous and disadvantageous social comparisons (Charness and Rabin 2002 did similarly through a generalized model incorporating social welfare maximizing and competitive/spiteful preferences; see, e.g., Corgnet et al. 2015). In a classroom survey, we use two recently created behavioral survey items to explore individual differences in disadvantageous and advantageous inequality aversion, that is, “envy” and “compassion”, respectively (Espín et al. 2018). To study how Econ and non-Econ students differ in their views or beliefs about other people (Frank et al. 1993; Gerlach 2017), we use another novel survey question inquiring whether the respondent thinks people are sheer selfish maximizers, i.e., *homo economicus*.

## **2. Materials and Methods**

At the beginning of 2010, we conducted a classroom survey among 600 students from a total of 19 different Econ (economics [n=137] and business administration [n=67]) and non-Econ majors (most populated: medicine [n=89], civil engineering [n=85], law [n=70], anthropology

[n=40], and psychology [n=36]) at the University of Granada, Spain. 29% of the 204 Econ students and 47% of the 396 non-Econ students were first-year students.

The survey intended to calibrate a set of questions to be used in a subsequent survey/experiment, which was conducted with a representative sample of the city of Granada in November 2010 (for more details of the city-representative survey/experiment, see Exadaktylos et al. 2013). As mentioned, here we are interested in three items included in the questionnaire.

### 2.1. *Distributional preferences*

The first two items measure the subjects' self-reported aversion to unequal economic outcomes (Espín et al. 2018), following the framework of Fehr and Schmidt (1999). We obtained measures for envy and compassion, as follows:

***Envy:*** “*I am not worried about how much money I have, what worries me is that there are people that have more money than I have.*”

***Compassion:*** “*I am not worried about how much money I have, what worries me is that there are people that have less money than I have.*”

Students answered using a Likert scale from 1 (“totally disagree”) to 7 (“totally agree”). Therefore, individuals scoring high on the *envy* (*compassion*) item report a strong aversion to disadvantageous (advantageous) inequality; scoring high in both items implies strong inequality aversion. Importantly, we proxy the weight on utility of income comparisons relative to the weight of personal income by using a starting sentence common to both items: “*I am not worried about how much money I have, (...)*”. This feature allows attaining the importance a respondent gives to disadvantageous and advantageous comparisons compared to the importance given to his/her own income, in the spirit of Fehr and Schmidt (1999). Therefore, individuals who score low in these measures report being mostly concerned about their own income, i.e., self-interested.

These measures have shown good predictive power in explaining monetarily incentivized distributional decisions (dictator game) in two independent large samples (Espín et al. 2018; Brañas-Garza et al. 2020). This suggests that the items are externally valid.

## 2.2. Beliefs about others' (self-interested) motivations

The third item refers to the students' beliefs about the effect of economic policy on people's behavior. If unemployment benefits increase, how would people respond? We are not aware of previous studies using this item, labeled as "*unemp benefits*". It elicits the students' views about the representative individual's primary motivation:

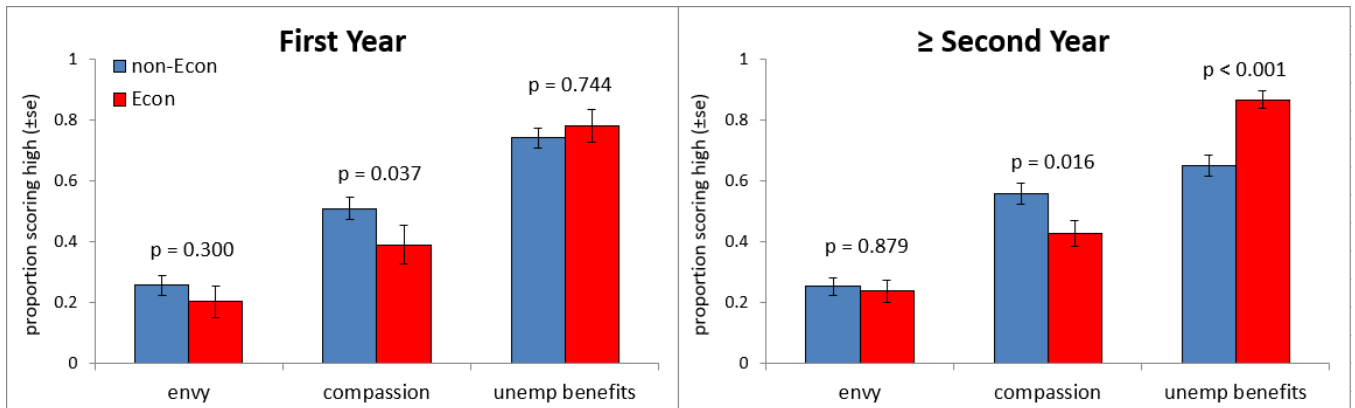
***Unemp benefits:*** "If unemployment benefits increase, less people will be willing to work."

Students reported their agreement with the statement using the same 1-to-7 Likert scale. A high score on *unemp benefits* indicates that the respondent believes other people are *homo economicus*, i.e., primarily motivated by their self-interest: if people are self-interested and no other social, moral, or psychological motives underlie their employment decisions, they will respond uniquely to extrinsic monetary incentives and will, consequently, reduce their willingness to work as unemployment benefits increase. Note that this is a textbook explanation of the (allegedly) negative effect of unemployment benefits on employment in most introductory and intermediate microeconomics and macroeconomics courses, also in the University of Granada. However, more advanced research demonstrates that the answer to this question is much more complex, as many factors need to be considered, including human capital accumulation, long-term effects and discounting, reservation wage adjustments, reference-dependent preferences, and psychological wellbeing (Clark 2003; Howell and Azizoglu 2011; Schmieder and Von Wachter 2016; DellaVigna et al. 2017, 2020; Marinescu and Skandalis 2019).

## 3. Results and Discussion

Due to the categorical nature of the scales, we transform them into binary variables for the analyses: individuals are labeled as scoring "high" in an item if their answer is 4 or more (the results are qualitatively similar if we consider the complete scales; available upon request). We will say that there is a self-selection effect if Econ and non-Econ students differ in the first year. We will infer a training or indoctrination effect if the two groups differ more after the first year than in the first year.

Figure 1 displays the mean proportion of high scorers in each measure broken down into non-Econ (blue bars) and Econ majors (red bars). The left panel refers to “junior”, first-year students while the right panel refers to students in second year or higher, i.e., “senior” students. Note that we cannot disaggregate the latter group into different courses because the sample size is limited and there are 3-, 4-, and 5-year majors included, with students in all years from 2<sup>nd</sup> to 5<sup>th</sup> in the sample (this also means that any indoctrination effect observed might represent a lower bound of the true effect).



**Figure 1.** Mean proportion of high scorers in each of the three measures for non-Econ (in blue) and Econ students (in red). Left panel refers to first-year students while right panel refers to senior students (2<sup>nd</sup> year or higher). P-values are obtained from Wald tests on the interaction coefficients in the regressions with controls in Table 1, that is, columns 4, 8, and 12, for *envy*, *compassion*, and *unemp benefits*, respectively. Error bars represent robust standard errors.

Table 1 shows the results of a series of probit regressions where the dependent variable is whether the student scores high on a particular item. Explanatory variables are whether the individual is an *Econ* student (vs. non-Econ) and whether s/he is a *senior* student (vs. first year). In each model, we also include the interaction between *Econ* and *senior* to test if the differences between Econ and non-Econ students are moderated by seniority. All models are repeated with gender (*male*), *age*, and household *income* as control variables. These are key controls because all have been found to correlate with responses to the distributional preferences items (Espín et al. 2018, Brañas-Garza et al. 2020). Also, controlling for age is essential to avoid confounding the effect of seniority (i.e., exposure to economics training) with that of age (Bauman and Rose 2011). Significance levels in Figure 1 are obtained from Wald tests on the interaction coefficients in the models with controls.

[Insert Table 1 here]



Figure 1 shows that Econ and non-Econ do not differ in their self-reported level of *envy*, neither among junior nor among senior students (both  $p > 0.3$ ; column 4 in Table 1). However, Econ are less likely to score high on *compassion* than non-Econ, both among junior and senior students ( $p = 0.037$  and  $p = 0.016$ , resp.; column 8). Thus, we find evidence of self-selection for *compassion*, but not *envy*: less compassionate students are more likely to start Econ studies. The interaction between *Econ* and *senior* is non-significant for either *envy* or *compassion* (both  $p > 0.40$ ), indicating that indoctrination does not play a role for distributional preferences and, consequently, for self-interest.

Regarding *unemp benefits*, we observe a different pattern. Econ and non-Econ students do not differ in the first year ( $p = 0.744$ ) but they strongly differ after the first year: compared to senior non-Econ, senior Econ students are more likely to agree that increasing unemployment benefits discourages people to work ( $p < 0.001$ ; column 12). The interaction between *Econ* and *senior* is indeed significant ( $p = 0.040$  with controls,  $p = 0.023$  without controls; columns 12 and 10, resp.), which suggests an indoctrination effect on beliefs. Interestingly, when controls are accounted for, this effect is due to the combination of a marginally significant increase, from the first year on, for Econ ( $p = 0.097$ ) and a non-significant decrease for non-Econ in *unemp benefits* ( $p = 0.250$ ).

#### 4. Conclusion

Our results suggest that economic training shapes the psychology of students. However, we find no evidence of an indoctrination effect on the students' distributional preferences and, consequently, on self-interest, but only on their expectations about others: economic training seems to induce students to think that people are primarily driven by their self-interest. Consistent with our findings, Frank and Schulze (2000) and Frey and Meier (2005), among others, find self-selection effects on decisions where expectations about others should not influence behavior, whereas indoctrination effects have been typically found in more complex games in which strategic considerations do play a role (e.g., Frank et al. 1993; Ifcher & Zarghamee 2018). Interestingly, as Frank et al. (1996: 187) indicated, the argument that "training in economics encourages the belief that people are self-interested" seems to be not contended. However, to our best knowledge, this is the first study clearly showing *both* a self-selection effect on preferences and an indoctrination effect on expectations about others' behavior.

## References

- Ai, C., & Norton, E. C. (2003). Interaction terms in logit and probit models. *Economics Letters*, 80(1), 123-129.
- Bauman, Y., and Rose, E. (2011). Selection or indoctrination: Why do economics students donate less than the rest? *Journal of Economic Behavior and Organization*, 79 (3), 318-327.
- Bolton, G. E., & Ockenfels, A. (2000). ERC: A theory of equity, reciprocity, and competition. *American Economic Review*, 90(1), 166-193.
- Branas-Garza, P., Jorrat, D., Alfonso-Costillo, A., Espin, A. M., García, T., & Kovářík, J. (2020). Exposure to the Covid-19 pandemic and generosity. *PsyArXiv*. Available at: <https://psyarxiv.com/6ktuz>
- Cappelen, A. W., Nygaard, K., Sørensen, E. Ø., and Tungodden, B. (2015). Social preferences in the lab: A comparison of students and a representative population. *The Scandinavian Journal of Economics*, 117(4), 1306-1326.
- Carter, J. R., & Irons, M. D. (1991). Are economists different, and if so, why?. *Journal of Economic Perspectives*, 5(2), 171-177.
- Charness, G., & Rabin, M. (2002). Understanding social preferences with simple tests. *The Quarterly Journal of Economics*, 117(3), 817-869.
- Clark, A. E. (2003). Unemployment as a social norm: Psychological evidence from panel data. *Journal of Labor Economics*, 21(2), 323-351.
- Corgnet, B., Espín, A. M., & Hernán-González, R. (2015). The cognitive basis of social behavior: cognitive reflection overrides antisocial but not always prosocial motives. *Frontiers in Behavioral Neuroscience*, 9, 287.
- Daboub, A. J., Rasheed, A. M.A. Priem R. L. & Gray, D. A. 1995. Top Management Team Characteristics and Corporate Illegal Activities. *Academy of Management Review*, 20(1), 138-170.
- DellaVigna, S., Heining, J., Schmieder, J. F., & Trenkle, S. (2020). Evidence on job search models from a survey of unemployed workers in Germany. *National Bureau of Economic Research*, No. w27037.
- DellaVigna, S., Lindner, A., Reizer, B., & Schmieder, J. F. (2017). Reference-dependent job search: Evidence from Hungary. *The Quarterly Journal of Economics*, 132(4), 1969-2018.
- Engelmann, D., & Strobel, M. (2004). Inequality aversion, efficiency, and maximin preferences in simple distribution experiments. *American Economic Review*, 94(4), 857-869.
- Espín, A. M., Moreno-Herrero, D., Sánchez-Campillo, J., & Martín, J. A. R. (2018). Do envy and compassion pave the way to unhappiness? Social preferences and life satisfaction in a Spanish city. *Journal of Happiness Studies*, 19(2), 443-469.
- Exadaktylos, F., Espín, A. M., & Branas-Garza, P. (2013). Experimental subjects are not different. *Scientific Reports*, 3, 1213.
- Falk, A., & Fischbacher, U. (2006). A theory of reciprocity. *Games and Economic Behavior*, 54(2), 293-315.
- Fehr, E., & Schmidt, K. M. (1999). A theory of fairness, competition, and cooperation. *The Quarterly Journal of Economics*, 114(3), 817-868.

- Frank, R. H. (1987). If homo economicus could choose his own utility function, would he want one with a conscience?. *The American Economic Review*, 77(4), 593-604.
- Frank, R., Gilovich, T. and Regan, D.T. (1993). Does studying economics inhibit cooperation? *The Journal of Economic Perspectives*, 7(2), 159-171.
- Frank, R. H., Gilovich, T. D., & Regan, D. T. (1996). Do economists make bad citizens?. *Journal of Economic Perspectives*, 10(1), 187-192.
- Frank, B., & Schulze, G. G. (2000). Does economics make citizens corrupt?. *Journal of Economic Behavior & Organization*, 43(1), 101-113.
- Frey, B. S., & Meier, S. (2005). Selfish and indoctrinated economists?. *European Journal of Law and Economics*, 19(2), 165-171.
- Gerlach, P. (2017). The games economists play: Why economics students behave more selfishly than other students. *PloS ONE*, 12(9), e0183814.
- Haucap, J., and Müller, A. (2014). Why are economists so different? Nature, nurture and gender effects in a simple trust game. *DICE Discussion Paper*, No. 136.
- Howell, D. R., & Azizoglu, B. M. (2011). Unemployment benefits and work incentives: the US labour market in the Great Recession. *Oxford Review of Economic Policy*, 27(2), 221-240.
- Hu, Y. A., and Liu, D. Y. (2003). Altruism versus egoism in human behavior of mixed motives: An experimental study. *American Journal of Economics and Sociology*, 62(4), 677-705.
- Ifcher, J., & Zarghamee, H. (2018). The rapid evolution of homo economicus: Brief exposure to neoclassical assumptions increases self-interested behavior. *Journal of Behavioral and Experimental Economics*, 75, 55-65.
- Marinescu, I. E., & Skandalis, D. (2019). Unemployment insurance and job search behavior. Available at SSRN 3303367.
- Meier, S., and Frey, B. S. (2004). Do business students make good citizens? *International Journal of the Economics of Business*, 11(2), 141-163.
- Mertins, V., and Warning, S. (2014). Greedy and selfish? Differences in fairness preferences of prospective lawyers and managers. *German Journal of Human Resource Management*, 28(4), 410-431.
- Rabin, M. (1993). Incorporating fairness into game theory and economics. *The American Economic Review*, 83(5), 1281-1302.
- Ruiz-Villaverde, A. (2019). Editor's introduction: The growing failure of the neoclassical paradigm in economics. *American Journal of Economics and Sociology*, 78(1), 13-34.
- Schmieder, J. F., & Von Wachter, T. (2016). The effects of unemployment insurance benefits: New evidence and interpretation. *Annual Review of Economics*, 8, 547-581.
- Thaler, R. H. (2000). From homo economicus to homo sapiens. *Journal of Economic Perspectives*, 14(1), 133-141.
- Urbina, D. A., & Ruiz-Villaverde, A. (2019). A critical review of homo economicus from five approaches. *American Journal of Economics and Sociology*, 78(1), 63-93.
- Yezer, A.M., Goldfarb, R.S. and Poppen, P.J. (1996). Does studying economics discourage cooperation? Watch what we do, not what we say or how we play. *Journal of Economic Perspectives*, 10(1), 177-186.

**Table 1.** Self-selection and indoctrination effects on *envy*, *compassion*, and *unemp benefits*

	envy (1)	envy (2)	envy (3)	envy (4)	compassion (5)	compassion (6)	compassion (7)	compassion (8)	unemp ben (9)	unemp ben (10)	unemp ben (11)	unemp ben (12)
<i>Econ</i>	-0.090 (0.121)	-0.176 (0.211)	-0.093 (0.127)	-0.230 (0.222)	-0.319*** (0.111)	-0.301 (0.190)	-0.375*** (0.117)	-0.422** (0.202)	0.510*** (0.129)	0.127 (0.208)	0.439*** (0.133)	0.072 (0.219)
<i>senior</i>	0.023 (0.116)	-0.014 (0.137)	0.026 (0.137)	-0.046 (0.168)	0.115 (0.107)	0.123 (0.127)	0.066 (0.125)	0.041 (0.154)	-0.109 (0.118)	-0.262* (0.135)	-0.003 (0.140)	-0.190 (0.165)
<i>Econ X senior</i>		0.130 (0.258)		0.206 (0.274)		-0.028 (0.234)		0.071 (0.252)		0.595** (0.263)		0.571** (0.278)
<i>age</i>			0.014 (0.017)	0.015 (0.017)			0.023 (0.015)	0.024 (0.015)			-0.038** (0.016)	-0.034** (0.016)
<i>male</i>			0.166 (0.124)	0.152 (0.125)			-0.325*** (0.116)	-0.330*** (0.118)			-0.025 (0.127)	-0.065 (0.129)
<i>income</i>			-0.102 (0.063)	-0.106* (0.063)			-0.033 (0.058)	-0.035 (0.058)			0.087 (0.063)	0.077 (0.064)
constant	-0.673*** (0.093)	-0.653*** (0.100)	-0.779** (0.395)	-0.764* (0.396)	0.025 (0.086)	0.021 (0.093)	-0.224 (0.363)	-0.218 (0.364)	0.560*** (0.092)	0.644*** (0.101)	1.164*** (0.388)	1.217*** (0.392)
chi <sup>2</sup>	0.563	0.802	6.001	6.799	8.611**	8.636**	20.825***	20.896***	15.617***	21.039***	20.582***	24.662***
log-likelihood	-331.255	-331.127	-288.234	-287.959	-406.653	-406.645	-351.202	-351.162	-327.848	-325.306	-281.012	-278.930
pseudo-R <sup>2</sup>	0.001	0.001	0.011	0.012	0.011	0.011	0.029	0.029	0.025	0.033	0.034	0.042
obs	595	595	524	524	593	593	522	522	589	589	519	519

Notes: Probit estimates. Robust standard errors in parentheses. Dependent variables are displayed on top of the columns. Models with controls include age, gender, and income level (=1 if “low”, 2 if “medium-low”, 3 if “medium”, 4 if “medium-high”, 5 if “high”). Due to the potentially problematic interpretation of non-linear interaction effects (Ai and Norton 2003), we test the interactions using linear probability models; the results are nearly identical. \*\*\* p<0.01, \*\* p<0.05, \* p<0.10.