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WHAT DETERMINES TRUST? HUMAN CAPITAL VS. SOCIAL INSTITUTIONS: EVIDENCE FROM MANILA AND MOSCOW

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SERIES: *ECONOMIC*

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WHAT DETERMINES TRUST? HUMAN CAPITAL VS. SOCIAL INSTITUTIONS: EVIDENCE FROM MANILA AND MOSCOW

It is now well established that highly developed countries tend to score well on measures of social capital and have higher levels of generalized trust. In turn, the willingness to trust has been shown to be correlated with various social and environmental factors (e.g. institutions, culture) on one hand, and accumulated human capital on the other. To what extent is an individual's trust driven by contemporaneous institutions and environmental conditions and to what extent is it determined by the individual's human capital? We collect data from students in Moscow and Manila and use the variation in their height and gender to instrument for measures of their human capital to identify the causal effect of the latter on trust. We find that human capital positively affects the propensity to trust, and its contribution appears larger than the combined effect of other omitted variables including, plausibly, social and environmental factors.

Keywords: trust, education, human capital, institutions

JEL classification: D02, I25

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INTRODUCTION

Trust is important for investigating policy relevant issues such as the capacity of groups of individuals to spontaneously solve cooperation problems, coordinate in the provision of public goods, or to decide whether to comply with social norms or break existing laws. However, the determinants of trust remain unclear. Does the quality of institutions or other social conditions lead to more trust, or is it that the general tendency to trust leads to good institutions? Farrell and Knight (2003) say flatly that "the sources of trust remain unclear (p. 537)" and emphasize that there is not yet a good microlevel theory of the links between trust, social capital, institutions, and cooperation. Classic papers (e.g. Zak and Knack, 2001) that have focused on the macroeconomic links between measures of trust and outcome variables such as economic growth show that levels of trust strongly vary depending on the social, economic, and institutional environments. Zak and Keefer (1997) also show that measures of trust and civic norms correlate well with growth and institutions without themselves testing for the different ways that institutions might feedback to trust.

An important compounding factor may be the role of human capital on generating trust. Recent literature shows that the tendency to be more trusting, whether as measured by opinion surveys or in economics experiments or field trials, is strongly linked to measures of human capital. For instance, Putterman et al. (2010) find that students at Brown with higher cognitive ability tended to give more in public goods games. More generally, Jones (2008) surveyed existing experimental work and shows that students at schools with high-SAT scores are more likely to cooperate in repeated prisoner's dilemma games than those from lower average SAT schools (see also Al-Ubaydlii, Jones and Weil 2011a, 2011b). This is also consistent with a broader literature showing correlations between countries that score well on measures of social capital and average indicators of human capital such as schooling or average IQ (e.g. Zak and Knack, 2001, Jones and Schneider, 2006)

In identifying the causal effect of human capital on trust, the important issue that arises is the extent to which the trust and cognitive ability correlation is driven by social and environmental effects. That is, do people in environments conducive to doing well on tests or in school tend to trust more because they are in environments where good behavior is rewarded? Note that Putterman et al. also shows that students with higher IQ (i.e. those who scored better on a short intelligence test) are also more likely to vote for efficient sanctions on defectors. Jones and Nye (2012) modify the finding of Fisman and Miguel (2007) that New York City diplomats from more corrupt countries tend to have more unpaid parking tickets (i.e. more likely to defect and, hence, have lower levels of trust) by obtaining data on the national IQ of the diplomats' home countries. They then find that both corruption and national IQ are significant predictors of trust, but the effects diminish after 2002 when the law was strictly enforced on diplomats. Such studies suggest that trust, cognitive ability and the institutional environment interact.

To separate out the effects of institutions and other social and environmental factors on an individual's propensity to trust, we use biological markers – height and gender- as instruments for human capital (as measured by test scores and academic grades). Arguably, these are valid instruments since, as Rothstein (2005) asserts, "…social trust and social intelligence are not genetic or otherwise biologically determined." Meanwhile height and gender are plausibly correlated with human capital through, for instance, prenatal and early childhood nutrition and its interaction with hormones which affect both height and human capital development. (See, e.g., Nye et al. 2012 which shows that prenatal testosterone is linked with gender-differentiated academic outcomes).

Applying such instrumental-variable analysis to survey data drawn from two groups of students in Moscow and Manila – two samples with very different ethnic and national compositions, we consistently find that students with higher test scores and grades are more likely to say that they feel that "most people can be trusted". Furthermore, the estimated effect of scores and grades are lower when simple OLS regressions are conducted, that is, when the endogeneity of scores and grades to contemporaneous institutional, social and environmental factors is ignored. This suggests that the causal effect of human capital on trust may be larger than the combined effect of other factors, including institutions.

The next section proposes a model to explain how observed trust is affected by human capital (and other factors), while section 3 describes the data to test the model's hypothesis. Section 4 provides and analyzes the results and Section 5 concludes.

THE MODEL

To identify the causal effect of an individual i's human capital on her propensity to trust, we adopt the following probit model with an endogenous explanatory variable:[6]

(a) $y_{1i}{}^{*} = \alpha_0 + \alpha_1 y_{2i} + u_i$

(b) $y_{2i} = \beta_0 + z_i\beta + v_i$

(c) $y_{1i} = 1[y_{1i}^{*} > 0]$

where y_{1i}^{*} is a latent variable describing some unobservable level of trust of an individual, which

[6] See Wooldridge (2002) for an exposition.

is expressed as an observable binary measure y_{1i} of being trusting or not. Specifically, the individual is trusting, i.e $y_{1i} = 1$, if the inner threshold $y_{1i}^* > 0$ is met. Trust is affected by a host of factors, one of which we assume to be the individual's human capital, which is denoted by y_{2i} . Let (u_i, v_i) have a zero mean, bivariate normal distribution and be independent of (instruments) z_i. Thus, equation (b) is the reduced form for y_{2i}, which is endogenous if u_i and v_i are correlated, and (a) and (c) describe the structural equation.

One reason for why u_i and v_i may be correlated and y_{2i} endogenous is the possible feedback effect of trust to human capital, since one's social capital can also affect her human capital.[7] (See, e.g., Coleman 1998.) More importantly, both human capital and trust can simultaneously interact with some social and environmental factors, including institutions. For instance, rules and norms that encourage openness can affect the formation of one's social networks, which interacts with her trust to determine her social capital, and at the same time can enable greater human capital accumulation which, in turn, can also affect her social networks.[8] Thus, the instruments z_i are deemed exogenous particularly to these institutions that simultaneously interact with both human capital and trust, such that (u_i, v_i) is independent of z_i.

Note that z_i may be endogenous to other factors that affect human capital, even including some institutions. However, as long as these factors are not the same as those that affect one's trust, then the independence of (u_i, v_i) on z_i is maintained. In other words, z_i still satisfy the exclusion restriction, i.e. they are irrelevant in (a), and are valid instruments for y_{2i}. On the other hand, they have to be relevant in (b), and sufficiently so, to be considered strong instruments.

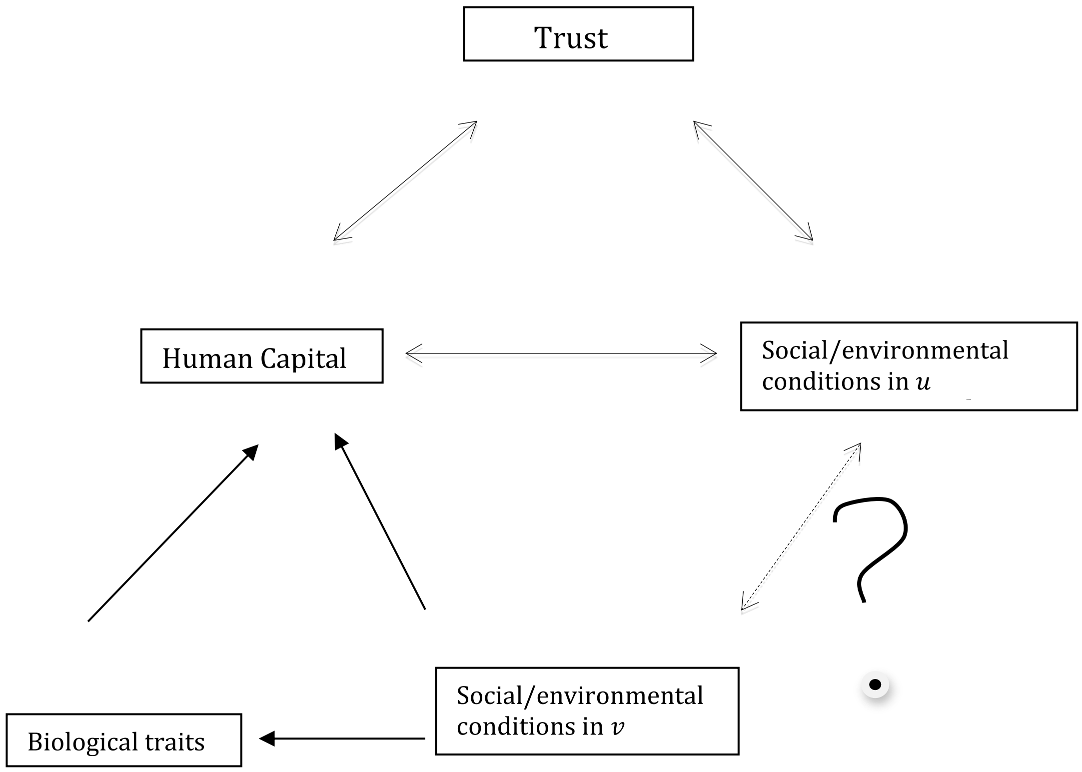
Given these requirements, we use one's biological markers, specifically height and gender, to construct instrumental variables z_i. Height and gender are likely correlated with human capital since early nutrition influences both height and human capital accumulation, while study habits and conscientiousness in studying may be gender-differentiated. For height and gender to be valid instruments, the maintained assumption is that trust is not genetically or biologically determined. Indeed, to our knowledge there are yet no studies that credibly show that genes and biological traits directly affect trust. Note, however, that our model does not rule out any statistical association between height and/or gender and trust, in fact they will be related through human capital. What we do maintain, however, is that such biological traits do not have a direct influence on trust, but only indirectly through their effect on human capital, and thereby satisfy the exclusion restriction.

[7] As Glaeser et al. note, social capital is usually measured using survey questions about trust.

[8] That is, the likely content of u_i and v_i are interactions of one's trust, human capital and the social/environmental conditions she faces, such that the latter do not enter additively in the error terms. Thus, even if these conditions were constant for all individuals, the omitted variables (i.e. interaction terms) are still varying at the individual level and cannot be lumped into α_0 and/or β_0.

While one may argue that individuals of a particular gender or height may be more trusting, this may still not be intrinsic but only a result of the interaction with social and environmental conditions. Certain conditions may be more favorable to individuals who are endowed with certain types of biological characteristics, which encourage these individuals to be more trusting. But note that human capital itself may be influenced by, and thus embody, these conditions, and so the effect of biological traits on trust is still through human capital. The model does not rule this out. However, the crucial question is whether these social and environmental conditions that affect human capital and biological traits also affect trust directly. This can happen if the relevant conditions that affect one's human capital and biological traits (i.e. those in error v_i) are the same conditions that affect one's trust (i.e. those in error u_i), or at least related to them. If not, then the independence of (u_i, v_i) on z_i can still be maintained. Figure 1 below summarizes the relationships between variables:

Figure 1: Are biological traits valid instruments for human capital?



Biological traits may be invalid instruments for human capital if social/environmental conditions in u and in v are the same or are related.

We contend that height and gender are valid instruments. Gender is clearly exogenous in that it is likely to be pre-determined, that is, no social/environmental conditions can systematically select gender upon birth, and one's human capital cannot feed back on to her gender. Neither can there be feedback from human capital to height. However, height may be endogenous to some social/environmental conditions. However, the conditions that are related to height are likely to be different from those that affect trust – height, for instance, may be affected by conditions that affect nutrition. Moreover, interventions such as nutrition affect height most significantly in early childhood (with the exception of adverse traumatic shocks later in life). Assuming trust is measured in adulthood, the current conditions affecting trust are likely to be different from those that have affected height.

Thus, height and gender instruments are useful in that, unlike human capital, they are exogenous to the current social/environmental conditions, e.g. institutions, that affect trust. Using such instruments nets out the effect of these institutions, enabling us to attribute the variation in trust to just the individual's human capital, that is, without the latter's possible interaction with the institutions she currently faces.

The model is estimated in STATA both as a two-step IV probit procedure and by maximum likelihood estimation (MLE), using the data described in the next section.

DATA

Our data are largely based on the written responses of over 100 students at the University of the Philippines School of Economics (UPSE) in Manila and over 900 students at the Higher School of Economics (HSE) in Moscow who volunteered to answer a questionnaire anonymously, providing only their student numbers as identification.[9]

In Manila, respondents were asked to choose whether they feel that "most people can be trusted" or whether they feel that "you can't be too careful dealing with people". From this we constructed a binary variable 'trust1', where trust1=1 corresponds to "most people can be trusted" and trust1=0 for "you can't be too careful dealing with people". They were also asked to provide their gender and their height in centimeters. In addition, we obtained from the Office of the University Registrar the scores in the UP College Admission Test (UPCAT) of the student numbers in our sample. As proxies for human capital, we thus use data on the total UPCAT score, the scores of the Mathematics component of the UPCAT, and the Science component. Each of these scores is further expressed as raw scores, formula scores, z-scores, t-scores, and

[9] Both the Manila and Moscow samples are likely to be random. In UPSE, the survey was done during registration week for the school year 2011-12, while students were waiting for their turn in the registration process. In HSE, a large class was asked to remain after the lecture to complete the survey. Surveys are routinely done by HSE, and usually students choose to remain if they have the time.

percentile rank. The raw score is the number of correct answers; the formula score is the number of correct answers minus ¼ the number of wrong answers; the z- and t-scores are the standardized scores based on the normal curve – z-score=(formula score – mean)/standard deviation, while t-score=(z-score*10)+50.

In Moscow, respondents were asked to rate their level of trust from 1 to 5, with 1 corresponding to "should be very careful" in dealing with people and 5 corresponding to "people can be trusted". The trust data, therefore, is originally an ordered response variable 'trust rank' where 1 indicates that the respondent is least trusting while 5 indicates she is most trusting. However, to be more comparable with the Manila data, we construct a binary variable, 'trustbin' by getting the sample average of 'trust rank' and assigning trustbin=1 if the respondent's 'trust rank' rating is greater than this average and zero otherwise. Thus, relative to others in the sample, the respondents for which trustbin=1 are more trusting, while those for which trustbin=0 are less trusting. We also construct different variants of the binary trust variable: 'trust1' which is equal to 1 if 'trust rank' is equal to 5; 'trust2' which is equal to 1 if 'trust rank' is equal to 4 or 5; 'trust3' which is equal to 1 if 'trust rank' is equal to 3, 4, or 5; and 'trust4' which is equal to 1 if 'trust rank' is equal to 2, 3, 4, or 5. Thus, compared to all binary trust variants, the 'trust1' variant is the strictest measure for trust in the sense that it treats the respondent as trusting only if she has given a highest rating of 5.

The Moscow respondents were also asked to give their height and gender, and their grade point averages in a 10-point scale (gpa_10), which we use as measure for human capital.

Table 1 presents summary statistics for the various trust variables, the human capital measures, and the instruments. We use data on gender and height to construct instruments for human capital. First of all, in both samples, the human capital measures significantly differ between males and females. Table 2 shows that in Manila, the differences in the means of the UPCAT, Mathematics and Science scores are statistically significant between genders, while in Moscow, the differences in the means of gpa_10 between genders is significant.

Mean heights are also significantly different across genders for both Manila and Moscow, which implies that any relationship between height and scores may likely need to be qualified by gender. Thus, we can use as instrument the interaction between height and gender. Note, however, that in Moscow, females have higher scores on average, while in Manila, males have higher scores. Thus, to be suitably comparable across samples, we interact the height variable with a female dummy variable for Moscow, while for Manila we interact the height variable with a male dummy variable. Figures 2 to 4 show that for Manila, there is stronger positive association between scores and height for the male subsample, while Figure 5 shows that for Moscow the positive association between grades and height is stronger for the female subsample.

(Figures 2 to 5)

Figures 2 to 5 also suggest that the relationship between scores/grade with height may not be linear – in Manila, the marginal gain from being tall seems to decrease towards the right end of the height distribution, while it seems to increase in Moscow. Thus, to capture the nonlinearity, we also use as instrument the squared height, and/or the interaction of squared height with gender.

To arrive at the final set of instruments, we first run IV probit regressions of the trust variables on the various human capital measures using as instruments height, gender, interaction of height and gender, squared height, interaction of squared height and gender, and various combinations thereof, and then rule out instruments and combinations of instruments that yield an F-stat less than 10 and are individually insignificant in the first-stage regressions.[10]

Recall the conceptual discussion in Section 2 on the likely exogeneity of height and gender to (current) social/environmental conditions. Although there are no direct statistical tests for the exogeneity of instruments, we provide some support to the arguments in Section 2 by the regression results reported in Table 3, where it can be seen that while the instruments significantly affect trust in simple regressions, they lose significance once we add the interaction of the instrument with the human capital measure. This suggests that the effect of height/gender on trust may be largely through human capital. In fact, in simple regressions of trust on the interaction term alone, the latter is clearly significant.

(Table 3)

Furthermore, we perform tests of over-identification after the IV probit regressions in a few cases where we have two instruments in the first-stage, and show that we cannot reject the null hypothesis that both of these instruments are exogenous. (See Section 4.)

RESULTS

We present regression results on the effects of human capital on trust when (a) the endogeneity of human capital is ignored, and when human capital is instrumented by height/gender via (b) two-step IV probit regressions, and via (c) MLE. In both the Manila and Moscow samples, the two-step IV probit estimation and MLE yield larger coefficients. This suggests that the causal

[10]See, e.g., Angrist and Pischke (2009) on the use of F-stat>10 as convention, and of the need to look at individual p-values to assess the strength of the instruments.

effect of human capital on trust may be larger than the effect of institutions and other social and environmental conditions.

Manila

Table 4 reports results of simple probit regressions of the trust variable on various human capital measures in our Manila sample. (Such regressions thus ignore the endogeneity of the human capital measures.)

(Table 4)

Note that while the total UPCAT scores (raw, formula, etc.) are all insignificant, the Math and the Science components appear to significantly affect trust (but with Math scores being only marginally significant at the 15% level). In particular, the Math z and t-scores have estimated coefficients of about 0.18 and 0.018, respectively. Science scores appear to have a bigger effect – with 0.25 for the z-score and 0.025 for the t-score, and 0.03 for the raw and formula scores. When we instrument for the scores, the coefficients increase. Table 5 contains the results from the two-step IV probit regressions, including the first-stage regressions. Using the height/gender instruments, it can be seen that the total UPCAT scores are now significant, as well as all Math and Science scores. More importantly, the significant coefficients are larger than those from Table 4, with Math z and t-scores having estimated coefficients of 0.79 and 0.079, respectively. Science z and t-scores now have a slightly smaller effect than Math z and t-scores, but compared with their counterparts in Table 4, the coefficients are larger, with 0.68 and 0.068 for the Science z and t-scores, respectively, and 0.09 and 0.07 for the raw and formula scores, respectively.

(Table 5)

The pattern is confirmed when we estimate by MLE – Table 6 shows that while the coefficients are smaller than the two-step estimates from Table 5, they are still clearly larger than those from Table 4, that is, when scores are not instrumented by height/gender.

(Table 6)

Moscow

For Moscow, we run the regressions for each of the variants of the trust variable on gpa_10. The results are always the same for the trust_bin and trust3 variables, as the values of these variables

after conversion from the ordered trust rank data are identical (since the average value of the (ordered) trust rank value is 2.87).
Table 7 shows that without using instruments, gpa_10 significantly affects trust1 and trust2, but not trustbin (and trust3) and trust 4. Specifically, a one-unit increase in gpa_10 has an estimated coefficient of 0.12 when using trust1, and 0.08 when using trust2. That the coefficient is larger when using trust1 than when using trust2 suggests that among the most trusting individuals (i.e. for whom trust rank=5 and, hence trust1=1), the effect of trust is magnified, and as we include less trusting individuals, the effect weakens.

(Table 7)

A similar trend is seen when we instrument for gpa_10. Table 8 shows that the estimated coefficient of gpa_10 is about 1.2 when we evaluate being trusting as trust1, while when we evaluate less strictly, i.e using trustbin/trust3, then the coefficient is only 0.9. (Note then that while gpa_10 is insignificant for trust2 and trust4, it is now significant for trustbin/trust3.)

(Table 8)

More importantly, however, note that the significant coefficients are now larger than their counterparts in Table 7. The same holds for the MLE results. Table 9 shows that while the coefficients are smaller than those from the two-step regressions, they are still larger than those from Table 7. That is, the estimated coefficient of gpa_10 is about 0.8 for the trust1 variant, while it is about 0.7 for the trustbin/trust3 variant.

(Table 9)

When we use the original trust rank variable, Table 6 shows that the ordered probit regressions (without instruments) yield slightly significant coefficient of 0.05, while the IV ordered probit regression (see Table 6 and 7) yields insignificant but larger coefficient of about 0.13.

Human Capital vs. Institutions

Across Manila and Moscow, the general result that the IV probit and MLE yield larger effects of human capital on trust seems consistent. Our human capital measures do appear endogenous – results of all the Wald tests (reported in Tables 5, 6, 8, 9) show that we reject the null hypothesis that the explanatory variables (scores and gpa_10) are exogenous. Thus, the results from 'naïve' probit regressions in Table 4 (Manila) and 7 (Moscow) are likely biased.

Tables 10 compares the coefficients from the IV probit and the naïve probit regressions via the Hausman test, and confirms that the IV probit coefficients are significantly higher than the probit coefficients.

(Table 10)

One may argue, however, that the results from the IV probit regressions (and MLE) may also be biased, that is, our instruments may also be endogenous. For Manila (see Table 5), we include some results that use two instruments – the gender variable, and the interaction of gender and height – even when the F-stat in their first-stage regressions are strictly less than 10. (Note, though, that each of these instruments is individually significant in the first-stage regression.) This is so we can conduct tests for over-identification and verify whether both instruments are exogenous. Indeed, the tests indicate that they are.

While we cannot perform the same tests for Moscow, one can argue that height and gender may also be exogenous, since they appear exogenous in the Manila sample. Recall also the discussion in section 2, where at the most, height may be endogenous to prior social/environmental factors, but not to current conditions. Lastly, Table 3 has shown that the effect of the height/gender instrument disappears when we control for the interaction between human capital and the height/gender instrument, which suggests that the effect of the instrument on trust may not be direct but indirect, that is, largely through human capital.

Thus, our results suggest that without controlling for the endogeneity of human capital to institutions (and other relevant social and environmental factors), the effect on trust is actually understated – that is, the combined effect of institutions and other social and environmental factors tends to depress the true effect of human capital on trust.

CONCLUSIONS

Analyzing survey data from students in Moscow and Manila and using height and gender as instruments for test scores and grade-point averages, we generate evidence that show that an individual's human capital has a positive causal effect on her propensity to trust. Our results further suggest that human capital might raise this propensity more than social and environmental conditions could, including institutions. This seems especially plausible given that both Moscow and Manila may have institutions that are not conducive to trust. However, the similarity of institutions across these samples also makes our result less generalizable. We cannot distinguish whether the effect of institutions, 'good' or 'bad', intrinsically undermines the effect of human capital on trust, or is it just because the particular institutions in Manila and Moscow are poor in generating and cultivating trust. That is, are institutions and human capital complements or substitutes in the production of trust and social capital? One would need to verify our results across more socially heterogeneous samples.

Nevertheless, an important implication might be that an individual with high human capital who migrates to a new area would have a higher probability of being trusting than a migrant with lower human capital, despite the fact that the current institutions in the new place might not be conducive to trust. That is, the adult migrant (whose biological traits are now exogenous) is likely to bring her accumulated social capital. Of course, what happens thereafter cannot be predicted by our model. Whether her level of trust further increases or decreases depends on the interaction of the new institutions with her human capital, which we can only identify if we have variable data on the particular institutions that affect trust.

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Figures

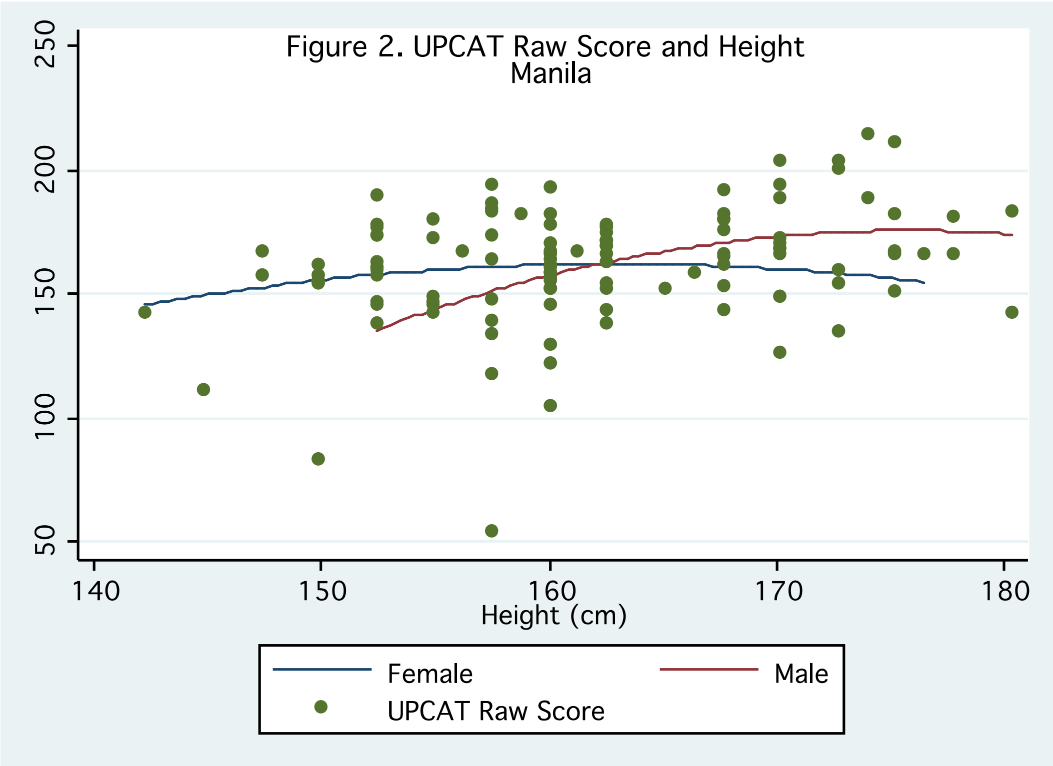
Figure 2. UPCAT Raw Score and Height
Manila
50
100
150
200
250
140
150
160
170
180
Height (cm)
Female
Male
UPCAT Raw Score

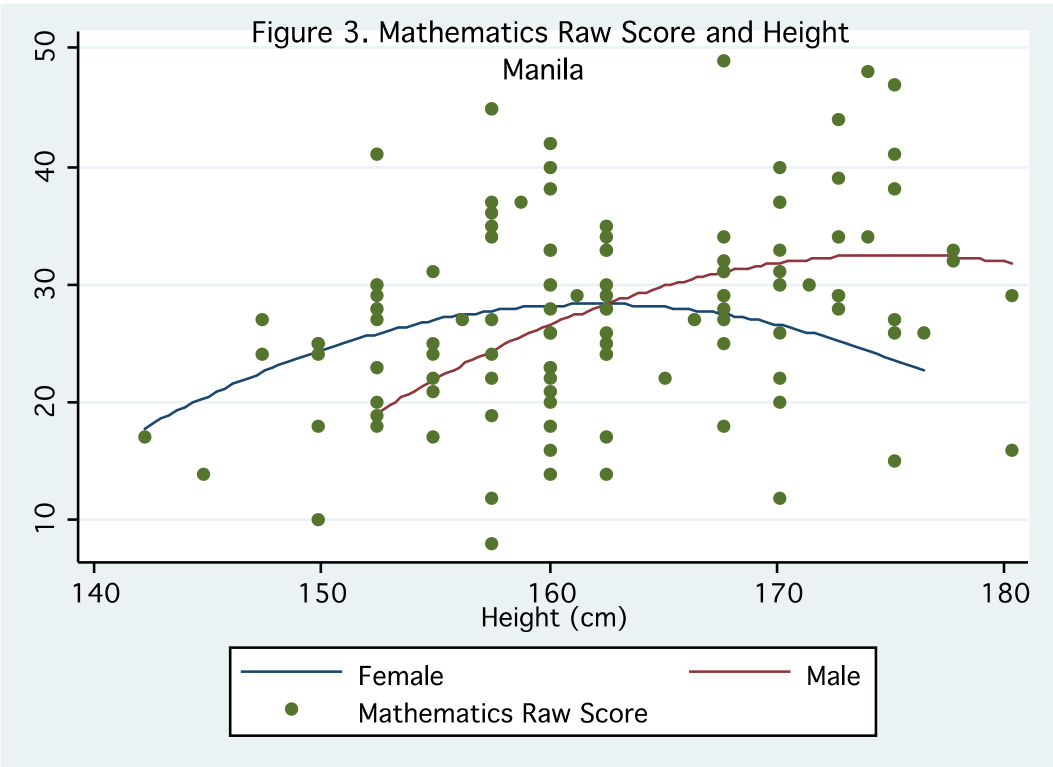
Figure 3. Mathematics Raw Score and Height
Manila
10
20
30
40
50
140
150
160
170
180
Height (cm)
Female
Male
Mathematics Raw Score

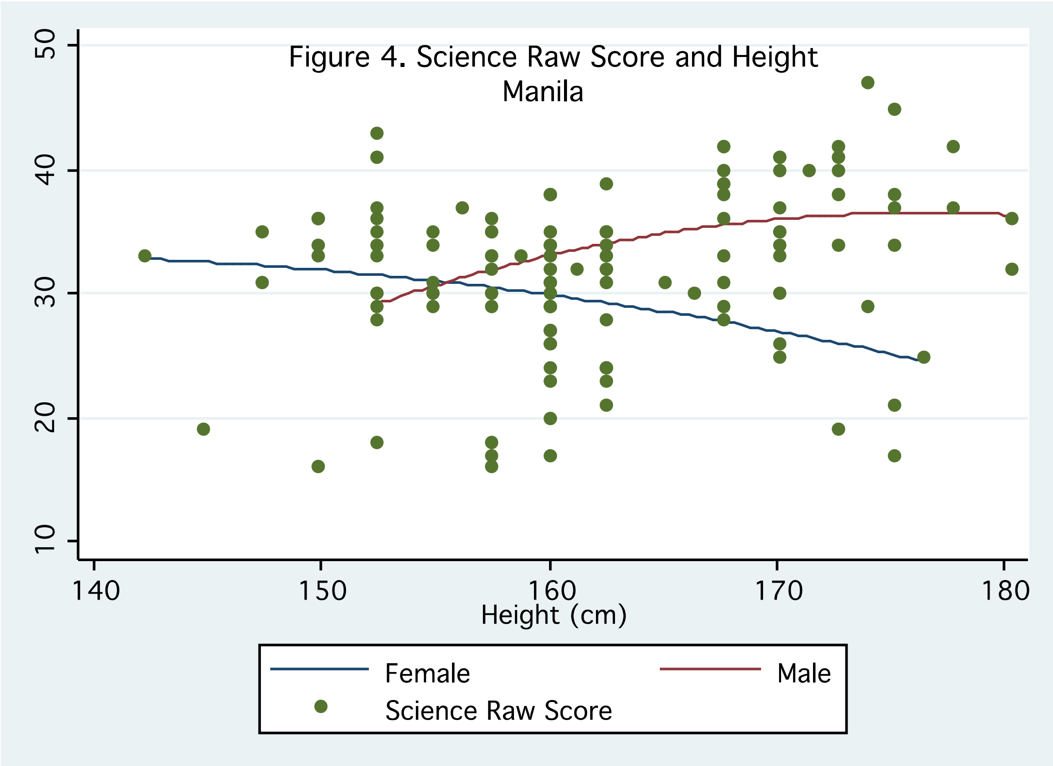
Figure 4. Science Raw Score and Height
Manila
10
20
30
40
50
140
150
160
170
180
Height (cm)
Female
Male
Science Raw Score

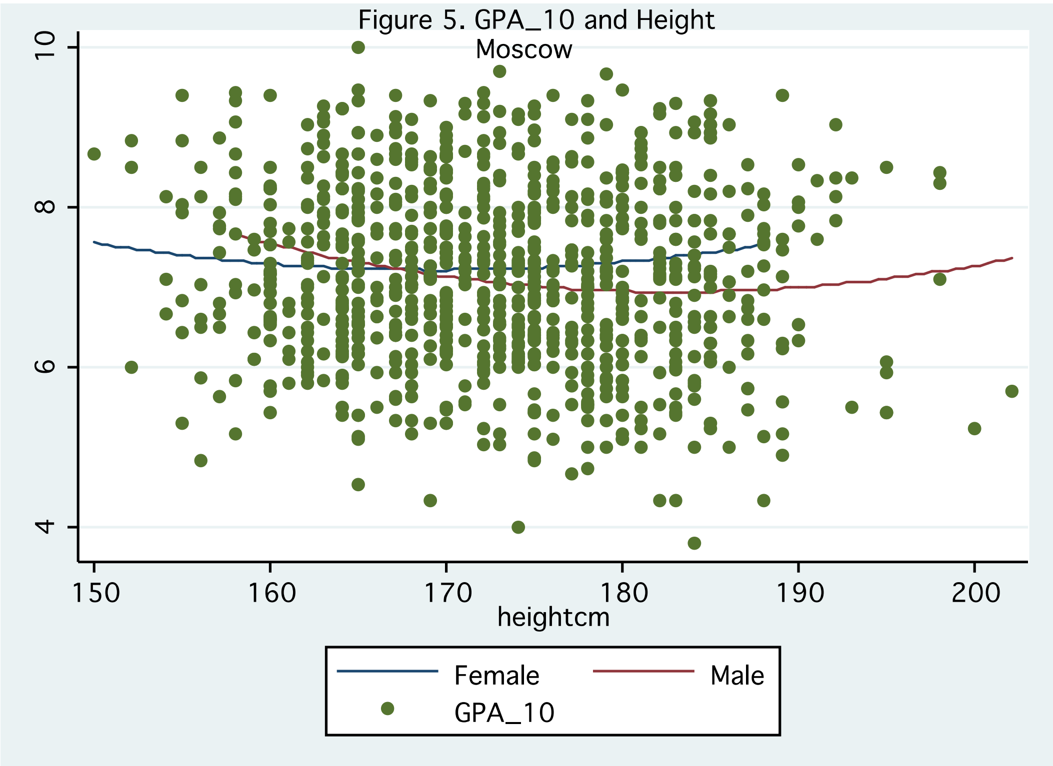
Figure 5. GPA_10 and Height
Moscow
4
6
8
10
150
160
170
180
190
200
heightcm
Female
Male
GPA_10

Tables

Table 1. Descriptive Statistics

Manila					
Variables	Obs	Mean	Std. Dev.	Min	Max
Outcome Variable					
Trust1	115	0.4695652	0.501257	0	1
Explanatory Variables					
UPCAT Raw Score	117	162.7778	23.1532	55	215
UPCAT Formula Score	122	146.6066	29.66888	17.25	209
UPCAT z-Score	122	1.728787	0.788412	-1.7538	3.3186
UPCAT t-Score	122	67.29098	7.878405	32.5	83.2
Mathematics Raw Score	122	27.95902	8.258627	8	49
Mathematics Formula Score	122	24.20082	9.526423	-2.25	48.75
Mathematics z-Score	122	1.707518	1.041254	-1.251	5.2501
Mathematics t-Score	122	67.07623	10.40956	37.5	102.5
Science Raw Score	122	32.01639	6.680406	16	47
Science Formula Score	122	28.24795	7.854599	8	46.25
Science z-Score	122	1.674145	0.8881504	-0.679	3.7053
Science t-Score	122	66.74016	8.882183	43.2	87.1
Science Percentile Rank	122	88.20639	15.42391	26.96	99.93
Instrumental Variables					
Female	121	0.5950413	0.4929252	0	1
Male	121	0.4049587	0.4929252	0	1
Height (in cm)	126	162.4194	8.351663	142.24	180.34
Male x Height	121	68.42256	83.38762	0	180.34
Male x Square of Height	121	11577.68	14160.11	0	32522.51

Moscow					
Variables	Obs	Mean	Std. Dev.	Min	Max
Outcome Variable					
Trust (rank)	952	2.868697	0.9976772	1	5
Trust (binary)	952	0.6859244	0.4643906	0	1
Trust 1	952	0.0430672	0.2031152	0	1
Trust 2	952	0.2468487	0.4314046	0	1
Trust 3	952	0.6859244	0.4643906	0	1
Trust 4	952	0.8928571	0.3094574	0	1
Explanatory Variables					
GPA in 10-points scale	899	7.158721	1.116202	3.8	10
Instrumental Variables					
Female	931	0.5767991	0.4943322	0	1
Male	931	0.4232009	0.4943322	0	1
Height (in cm)	955	172.8283	8.938401	150	202
Female x Height	916	97.67576	82.80191	0	188
Female x Square of Height	916	16389.23	13966.15	0	35344

Table 2. Means, Standard Deviations, and t-Test Comparisons for Male and Female on Grades and Height

Manila

	Male			Female				
Variable	Mean	SD	Obs	Mean	SD	Obs	df	t
UPCAT Raw Score	168.8889	21.47855	45	159.8857	21.99311	70	113	-2.162**
UPCAT Formula Score	155.383	26.04432	47	143.6736	26.12981	72	117	-2.3928**
UPCAT z-Score	1.960683	0.6723785	47	1.660019	0.6992426	72	117	-2.33**
UPCAT t-Score	69.60426	6.715911	47	66.60694	6.989456	72	117	-2.32**
Mathematics Raw Score	30.3617	8.307737	47	26.90278	7.691517	72	117	-2.32**
Mathematics Formula Score	27.02128	9.412762	47	22.98958	8.874163	72	117	-2.37**
Mathematics z-Score	2.040143	1.073133	47	1.564611	0.9230431	72	117	-2.58**
Mathematics t-Score	70.39149	10.72662	47	65.65417	9.231681	72	117	-2.57**
Science Raw Score	35.2766	5.922331	47	30.27778	6.026286	72	117	-4.45*
Science Formula Score	32.10106	6.885251	47	26.19792	7.091944	72	117	-4.56*
Science z-Score	2.121606	0.7211601	47	1.448033	0.8296382	72	117	-4.55*
Science t-Score	71.21277	7.213984	47	64.48056	8.2971	72	117	-4.55*
Science Percentile Rank	94.37766	6.066235	47	85.73028	16.21089	72	117	-3.5*
Height (in cm)	168.9618	6.522077	49	157.8866	6.091122	72	119	-9.5403*

Moscow

	Male			Female				
Variable	Mean	SD	Obs	Mean	SD	Obs	df	t
GPA in 10-points scale	7.016	1.2	378	7.266	1.04	516	892	-3.3155*
Height (in cm)	180.2696	6.242944	382	167.5487	6.392748	534	914	29.9861*

* Significant at 1% ** Significant at 5%

Table 3. Probit Regressions of Trust on the Instrumental Variable (IV), Trust on the Interaction of IV and Score, and Trust on IV and the Interaction Variable

Manila

Variables	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
Male x Height	0.002505***		0.001148	0.002505***		0.001344	0.002505***		-0.009881	0.002505***		-0.002949	0.002505***		-0.002367	0.002505***	
	(0.0015)		(0.0106)	(0.0015)		(0.0080)	(0.0015)		(0.0140)	(0.0015)		(0.0051)	(0.0015)		(0.0031)	(0.0015)	
Male x Height x UPCAT Raw Score		0.000017***	0.00001														
		(0.0000)	(0.0001)														
Male x Height x UPCAT Formula Score					0.000018**	0.00001											
					(0.0000)	(0.0000)											
Male x Height x UPCAT t-Score								0.000043**	0.000181								
								(0.0000)	(0.0002)								
Male x Height x Mathematics Raw Score											0.000102**	0.000187					
											(0.0000)	(0.0002)					
Male x Height x Mathematics z-Score														0.001601**	0.002461***		
														(0.0006)	(0.0013)		
Male x Height x Mathematics t-Score																	0.000047**
																	(0.0000)
Male x Height x Science Raw Score																	
Male x Height x Science Formula Score																	
Male x Height x Science z-Score																	
Male x Height x Science t-Score																	
Male x Height x Science Percentile Rank																	
Constant	-0.240801	-0.285661***	-0.287335***	-0.240801	-0.238484	-0.241652	-0.240801	-0.248772	-0.240601	-0.240801	-0.256260***	-0.240053	-0.240801	-0.271490***	-0.239295	-0.240801	-0.264920***
	(0.1531)	(0.1554)	(0.1562)	(0.1531)	(0.1520)	(0.1532)	(0.1531)	(0.1530)	(0.1532)	(0.1531)	(0.1509)	(0.1531)	(0.1531)	(0.1466)	(0.1531)	(0.1531)	(0.1529)
pseudo R-squared	0.0194	0.0257	0.0258	0.0194	0.0266	0.0268	0.0194	0.029	0.0324	0.0194	0.0341	0.0363	0.0194	0.0472	0.0507	0.0194	0.0347
obs	111	105	105	111	109	109	111	109	109	111	109	109	111	109	109	111	109
chi2	2.9373	3.6485	3.6736	2.9373	3.9324	3.9844	2.9373	4.3306	4.6718	2.9373	4.9624	4.8952	2.9373	6.6274	6.1716	2.9373	5.2467
p-value(Chi2)	0.0866	0.0561	0.1593	0.0866	0.0474	0.1364	0.0866	0.0374	0.0967	0.0866	0.0259	0.0865	0.0866	0.01	0.0457	0.0866	0.022

Variables	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
Male x Height	-0.014672	0.002505***		-0.00705	0.002505***		-0.004019	0.002505***		-0.00072	0.002505***		-0.009072	0.002505***		-0.033955***
	(0.0095)	(0.0015)		(0.0073)	(0.0015)		(0.0059)	(0.0015)		(0.0040)	(0.0015)		(0.0127)	(0.0015)		(0.0174)
Male x Height x UPCAT Raw Score																
Male x Height x UPCAT Formula Score																
Male x Height x UPCAT t-Score																
Male x Height x Mathematics Raw Score																
Male x Height x Mathematics z-Score																
Male x Height x Mathematics t-Score	0.000246***															
	(0.0001)															
Male x Height x Science Raw Score			0.000090**	0.000279												
			(0.0000)	(0.0002)												
Male x Height x Science Formula Score						0.000098**	0.000213									
						(0.0000)	(0.0002)									
Male x Height x Science z-Score									0.001393**	0.001673						
									(0.0007)	(0.0018)						
Male x Height x Science t-Score												0.000043**	0.000167			
												(0.0000)	(0.0002)			
Male x Height x Science Percentile Rank															0.000033**	0.000389**
															(0.0000)	(0.0002)
Constant	-0.239294	-0.240801	-0.258292***	-0.241206	-0.240801	-0.256263***	-0.241154	-0.240801	-0.247410***	-0.240979	-0.240801	-0.250353	-0.24098	-0.240801	-0.254412***	-0.240814
	(0.1531)	(0.1531)	(0.1525)	(0.1532)	(0.1531)	(0.1518)	(0.1532)	(0.1531)	(0.1493)	(0.1532)	(0.1531)	(0.1530)	(0.1532)	(0.1531)	(0.1533)	(0.1532)
pseudo R-squared	0.0507	0.0194	0.0328	0.0384	0.0194	0.0329	0.0357	0.0194	0.0331	0.0333	0.0194	0.0295	0.0333	0.0194	0.0305	0.0497
obs	109	111	109	109	111	109	109	111	109	109	111	109	109	111	109	109
chi2	6.1742	2.9373	4.8675	5.3071	2.9373	4.8382	4.9501	2.9373	4.5736	4.5102	2.9373	4.3902	4.5096	2.9373	4.5683	7.4888
p-value(Chi2)	0.0456	0.0866	0.0274	0.0704	0.0866	0.0278	0.0842	0.0866	0.0325	0.1049	0.0866	0.0361	0.1049	0.0866	0.0326	0.0237

Variables	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	(49)	(50)	(51)
Male x Square of Height	0.000015***		0.000007	0.000015***		0.000009	0.000015***		-0.000004	0.000015***		-0.000057	0.000015***		-0.000007	0.000015***		-0.000013
	(0.0000)		(0.0001)	(0.0000)		(0.0000)	(0.0000)		(0.0000)	(0.0000)		(0.0001)	(0.0000)		(0.0000)	(0.0000)		(0.0000)
Male x Square of Height x UPCAT Raw Score		0.000000***	0															
		0.0000	0.0000															
Male x Square of Height x UPCAT Formula Score					0.000000**	0												
					0.0000	0.0000												
Male x Square of Height x UPCAT z-Score								0.000009**	0.00001									
								(0.0000)	(0.0000)									
Male x Square of Height x UPCAT t-Score											0.000000**	0.000001						
											0.0000	(0.0000)						
Male x Square of Height x Mathematics Formula Score														0.000001**	0.000001			
														0.0000	(0.0000)			
Male x Square of Height x Mathematics z-Score																	0.000009**	0.000014***
																	(0.0000)	(0.0000)
Male x Square of Height x Mathematics t-Score																		
Male x Square of Height x Science Raw Score																		
Male x Square of Height x Science Formula Score																		
Male x Square of Height x Science z-Score																		
Male x Square of Height x Science t-Score																		
Male x Square of Height x Science Percentile Rank																		
Constant	-0.242804	-0.287927***	-0.289861***	-0.242804	-0.240814	-0.244502	-0.242804	-0.248290***	-0.24249	-0.242804	-0.251427***	-0.24248	-0.242804	-0.251320***	-0.24198	-0.242804	-0.270759***	-0.240097
	(0.1530)	(0.1552)	(0.1561)	(0.1530)	(0.1518)	(0.1531)	(0.1530)	(0.1494)	(0.1531)	(0.1530)	(0.1528)	(0.1531)	(0.1530)	(0.1492)	(0.1531)	(0.1530)	(0.1463)	(0.1530)
pseudo R-squared	0.02	0.0266	0.0267	0.02	0.0276	0.0279	0.02	0.0331	0.0333	0.02	0.03	0.0333	0.02	0.0346	0.035	0.02	0.0475	0.0506
obs	111	105	105	111	109	109	111	109	109	111	109	109	111	109	109	111	109	109
chi2	3.0328	3.7869	3.8169	3.0328	4.0851	4.15	3.0328	4.8374	4.7917	3.0328	4.5063	4.8022	3.0328	4.909	4.7937	3.0328	6.6283	6.1426
p-value(Chi2)	0.0816	0.0517	0.1483	0.0816	0.0433	0.1256	0.0816	0.0278	0.0911	0.0816	0.0338	0.0906	0.0816	0.0267	0.091	0.0816	0.01	0.0464

Variables	(52)	(53)	(54)	(55)	(56)	(57)	(58)	(59)	(60)	(61)	(62)	(63)	(64)	(65)	(66)	(67)	(68)	(69)
Male x Square of Height	0.000015***		-0.000084	0.000015***		-0.000041	0.000015***		-0.000023	0.000015***		-0.000004	0.000015***		-0.000054	0.000015***		-0.000203**
	(0.0000)		(0.0001)	(0.0000)		(0.0000)	(0.0000)		(0.0000)	(0.0000)		(0.0000)	(0.0000)		(0.0001)	(0.0000)		(0.0001)
Male x Square of Height x UPCAT Raw Score																		
Male x Square of Height x UPCAT Formula Score																		
Male x Square of Height x UPCAT z-Score																		
Male x Square of Height x UPCAT t-Score																		
Male x Square of Height x Mathematics Formula Score																		
Male x Square of Height x Mathematics z-Score																		
Male x Square of Height x Mathematics t-Score		0.000000**	0.000001***															
		0.0000	(0.0000)															
Male x Square of Height x Science Raw Score					0.000001**	0.000002												
					0.0000	(0.0000)												
Male x Square of Height x Science Formula Score								0.000001**	0.000001									
								0.0000	(0.0000)									
Male x Square of Height x Science z-Score											0.000008**	0.00001						
											(0.0000)	(0.0000)						
Male x Square of Height x Science t-Score														0.000000**	0.000001			
														0.0000	(0.0000)			
Male x Square of Height x Science Percentile Rank																	0.000000**	0.000002**
																	0.0000	(0.0000)
Constant	-0.242804	-0.266640***	-0.240095	-0.242804	-0.261108***	-0.243705	-0.242804	-0.258827***	-0.243594	-0.242804	-0.249807***	-0.243187	-0.242804	-0.253319***	-0.24319	-0.242804	-0.257690***	-0.242846
	(0.1530)	(0.1527)	(0.1530)	(0.1530)	(0.1524)	(0.1531)	(0.1530)	(0.1516)	(0.1531)	(0.1530)	(0.1491)	(0.1531)	(0.1530)	(0.1528)	(0.1531)	(0.1530)	(0.1532)	(0.1531)
pseudo R-squared	0.02	0.0356	0.0506	0.02	0.034	0.0394	0.02	0.0341	0.0368	0.02	0.0343	0.0346	0.02	0.0307	0.0346	0.02	0.0317	0.0516
obs	111	109	109	111	109	109	111	109	109	111	109	109	111	109	109	111	109	109
chi2	3.0328	5.392	6.1459	3.0328	5.0634	5.4309	3.0328	5.022	5.0848	3.0328	4.7507	4.6828	3.0328	4.5825	4.6825	3.0328	4.7784	7.8007
p-value(Chi2)	0.0816	0.0202	0.0463	0.0816	0.0244	0.0662	0.0816	0.025	0.0787	0.0816	0.0293	0.0962	0.0816	0.0323	0.0962	0.0816	0.0288	0.0202

Variables	(70)	(71)	(72)	(73)	(74)	(75)	(76)	(77)	(78)
Male	-3.214119		67.282568	-3.214119		25.401251	-1.514451		33.253376
	(5.6590)		(51.4670)	(5.6590)		(23.5024)	(2.8787)		(26.0723)
Male x Height	0.021429		-0.389064	0.021429		-0.148745			
	(0.0333)		(0.3029)	(0.0333)		(0.1392)			
Male x UPCAT Formula Score		-0.03391	-0.490243					-0.016428	-0.241499
		(0.0395)	(0.3488)					(0.0201)	(0.1765)
Male x Height x UPCAT Formula Score		0.000217	0.002856						
		(0.0002)	(0.0020)						
Male x UPCAT z-Score					-2.724511	-15.752585			
					(3.1411)	(12.5935)			
Male x Height x UPCAT z-Score					0.017398	0.093496			
					(0.0184)	(0.0741)			
Male x Square of Height							0.000067		-0.001111
							(0.0001)		(0.0009)
Male x Square of Height x UPCAT Formula Score								0.000001	0.000008
								(0.0000)	(0.0000)
Constant	-0.23837	-0.229018	-0.23837	-0.23837	-0.232652	-0.23837	-0.23837	-0.228819	-0.23837
	(0.1531)	(0.1521)	(0.1532)	(0.1531)	(0.1502)	(0.1532)	(0.1531)	(0.1521)	(0.1532)
pseudo R-squared	0.0216	0.032	0.0457	0.0216	0.0376	0.0454	0.0219	0.0324	0.0454
obs	111	109	109	111	109	109	111	109	109
chi2	3.3069	4.7142	6.0149	3.3069	5.2673	5.4471	3.3506	4.7765	5.9606
p-value(Chi2)	0.1914	0.0947	0.198	0.1914	0.0718	0.2444	0.1873	0.0918	0.2021

* Significant at 1% ** Significant at 5% *** Significant at 10%

Table 3. Probit and Ordered Probit Regressions of Trust on the Instrumental Variable (IV), Trust on the Interaction of IV and Score, and Trust on IV and the Interaction Variable

	Moscow											
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)
Female x Height	0.0015*		0.0029				0.0008***		0.0012			
	(0.000527)		(0.002606)				(0.000428)		(0.002052)			
Female x Height x GPA in 10-points scale		0.0002**	-0.0002					0.0001	-0.0001			
		(0.000073)	(0.000350)					(0.000059)	(0.000278)			
Female x Square of Height				0.0000*		0				0.0000***		0
				(0.000003)		(0.000016)				(0.000003)		(0.000012)
Female x Square of Height GPA in 10-points scale					0.0000**	0					0	0
					(0.000000)	(0.000002)					(0.000000)	(0.000002)
Constant	0.3525*	0.3893*	0.3770*	0.3544*	0.3913*	0.3794*						
	(0.066186)	(0.067261)	(0.067874)	(0.066024)	(0.067103)	(0.067715)						
cut1							-1.1616*	-1.1719*	-1.1670*	-1.1625*	-1.1723*	-1.1675*
							(0.067804)	(0.069474)	(0.069963)	(0.067595)	(0.069277)	(0.069758)
cut2							-0.4190*	-0.4417*	-0.4364*	-0.4199*	-0.4422*	-0.4370*
							(0.061035)	(0.062072)	(0.062703)	(0.060864)	(0.061892)	(0.062515)
cut3							0.7673*	0.7496*	0.7553*	0.7664*	0.7491*	0.7547*
							(0.063942)	(0.064422)	(0.065201)	(0.063773)	(0.064246)	(0.065019)
cut4							1.7944*	1.7640*	1.7694*	1.7935*	1.7637*	1.7689*
							(0.082791)	(0.082563)	(0.083381)	(0.082625)	(0.082416)	(0.083236)
pseudo R-squared	0.007493	0.005402	0.006634	0.007368	0.00527	0.006446	0.001463	0.001152	0.001298	0.001444	0.001148	0.001292
obs	898	862	862	898	862	862	898	862	862	898	862	862
chi2	8.309529	5.629735	6.981962	8.160735	5.488069	6.770789	3.578696	2.649949	3.078528	3.512526	2.628061	3.041871
p-value(Chi2)	0.003944	0.017658	0.030471	0.004281	0.019147	0.033864	0.058525	0.103553	0.214539	0.060907	0.10499	0.218507

* Significant at 1% ** Significant at 5% *** Significant at 10%

Note: (1) to (6) are Probit Regressions while (7) to (12) are Ordered Probit Regressions

Table 4 . Probit Regressions of Trust on Scores

	Manila												
Scores	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
UPCAT Raw Score	0.0013 (0.0057)												
UPCAT Formula Score		0.0031 (0.0044)											
UPCAT z-Score			0.1745 (0.1748)										
UPCAT t-Score				0.0175 (0.0175)									
Mathematics Raw Score					0.0128 (0.0150)								
Mathematics Formula Score						0.0125 (0.0131)							
Mathematics z-Score							0.1827 (0.1232)						
Mathematics t-Score								0.0183 (0.0123)					
Science Raw Score									0.0330*** (0.0195)				
Science Formula Score										0.0292*** (0.0166)			
Science z-Score											0.2532*** (0.1485)		
Science t-Score												0.0253*** (0.0148)	
Science Percentile Rank													0.0121 (0.0097)
Constant	-0.309 (0.9516)	-0.5114 (0.6678)	-0.3694 (0.3396)	-1.2474 (1.1990)	-0.4218 (0.4410)	-0.3659 (0.3453)	-0.3797 (0.2493)	-1.292 (0.8432)	-1.1245*** (0.6414)	-0.8930*** (0.4907)	-0.4897*** (0.2815)	-1.7543*** (1.0040)	-1.1356 (0.8795)
Pseudo R-squared	0.0004	0.0034	0.0078	0.0078	0.0049	0.0062	0.0153	0.0152	0.0207	0.0218	0.0211	0.0211	0.0124
N	106	111	111	111	111	111	111	111	111	111	111	111	111
chi2	0.0517	0.4822	0.9968	1.0038	0.7376	0.9065	2.1988	2.1931	2.8825	3.0841	2.9065	2.9032	1.5564
p-value(Chi2)	0.8202	0.4874	0.3181	0.3164	0.3904	0.3411	0.1381	0.1386	0.0895	0.0791	0.0882	0.0884	0.2122

* Significant at 1%   ** Significant at 5%   *** Significant at 10%

Table 5. Twostep IV-Probit Regressions of Trust on Scores

	Manila										
Structural Equation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
UPCAT Raw Score	0.0382038 (0.0241)										
UPCAT Formula Score		.0302229*** (0.0179)									
UPCAT z-Score											
UPCAT t-Score			.116491*** (0.0679)								
Mathematics Raw Score				.1076233*** (0.0640)							
Mathematics Formula Score											
Mathematics z-Score					.7889974*** (0.4415)						
Mathematics t-Score						.0791817*** (0.0443)					
Science Raw Score							.0909858*** (0.0482)				
Science Formula Score								.0766838*** (0.0404)			
Science z-Score									.6775057*** (0.3565)		
Science t-Score										.0677968*** (0.0357)	
Science Percentile Rank											.0585818*** (0.0332)
Constant	-6.403331 (3.9702)	-4.587487*** (2.6916)	-8.004223*** (4.6345)	-3.135154*** (1.8346)	-1.469577*** (0.8012)	-5.433862*** (3.0135)	-3.002514*** (1.5646)	-2.2574*** (1.1662)	-1.227128*** (0.6278)	-4.617631*** (2.4026)	-5.295473*** (2.9678)
Wald chi2(1)	2.52	2.84	2.94	2.83	3.19	3.19	3.56	3.6	3.61	3.61	3.12
p-value Wald chi2	0.1126	0.092	0.0863	0.0925	0.0739	0.0742	0.059	0.0579	0.0574	0.0574	0.0773
First stage regression											
Male											
Male x Height	.0761987* (0.0256)	.0980192* (0.0298)	.0254448* (0.0078)	.0275494* (0.0091)	.0037879* (0.0011)	.0377431* (0.0112)	.032699* (0.0069)	.0388239* (0.0079)	.0043921* (0.0009)	.0438908* (0.0089)	.0506564* (0.0145)
Square of Height											
Male x Square of Height											
F-stat	8.85	10.82	10.58	9.11	11.35	11.27	22.77	23.87	24.15	24.11	12.16
R-squared	0.0791	0.0918	0.09	0.0785	0.0959	0.0953	0.1755	0.1824	0.1842	0.1839	0.1021
N	105	109	109	109	109	109	109	109	109	109	109
Wald Test of Exogeneity											
p-value	.0531***	.0482**	.0662***	.0654***	0.1053	0.1049	0.1375	0.1456	0.1544	0.1542	.0834***

Structural Equation	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)
UPCAT Raw Score	0.0379155													
	(0.0234)													
UPCAT Formula Score		0.0300596***											0.0279821***	
		(0.0175)											(0.0152)	
UPCAT z-Score			1.155229***											1.08006***
			(0.6599)											(0.5757)
UPCAT t-Score				.1158925***										
				(0.0662)										
Mathematics Raw Score														
Mathematics Formula Score					.0905924***									
					(0.0521)									
Mathematics z-Score						.7851213***								
						(0.4309)								
Mathematics t-Score							.0787851***							
							(0.0433)							
Science Raw Score								.0923578***						
								(0.0481)						
Science Formula Score									.0777193***					
									(0.0403)					
Science z-Score										.6844052***				
										(0.3540)				
Science t-Score											.0684871***			
											(0.0354)			
Science Percentile Rank												.0596453***		
												(0.0333)		
Constant	-6.355794	-4.562895***	-2.161693***	-7.963272***	-2.315349***	-1.462508***	-5.406795***	-3.046755***	-2.286932**	-1.238851**	-4.663873***	-5.390415***	-4.248864***	-2.022322***
	-3.864571***	(2.6241)	(1.2097)	(4.5196)	(1.3052)	(0.7823)	(2.9407)	(1.5623)	(1.1624)	(0.6235)	(2.3858)	(2.9789)	(2.2761)	(1.0552)
Wald chi2(1)	2.62	2.96	3.06	3.06	3.03	3.32	3.31	3.68	3.72	3.74	3.74	3.21	3.4	3.52
p-value Wald chi2	0.1057	0.0856	0.08	0.0801	0.0819	0.0684	0.0687	0.055	0.0538	0.0532	0.0532	0.0732	0.0652	0.0606
First stage regression														
Male													-237.5045**	-6.067023**
													(112.4040)	(2.9553)
Male x Height													1.497422**	.0383001**
													(0.6629)	(0.0174)
Square of Height														
Male x Square of Height	.0004602*	.0005912*	0.0000154*	.0001534*	.0001964*	.0000228*	.0002275*	.0001933*	.0002298*	.0000261*	.0002607*	.0002985*		
	(0.0002)	(0.0002)	(0.0000)	(0.0000)	(0.0001)	(0.0000)	(0.0001)	(0.0000)	(0.0000)	(0.0000)	(0.0001)	(0.0001)		
F-stat	9.37	11.45	11.25	11.18	10.27	11.99	11.9	23.06	24.26	24.76	24.71	12.22	7.82	7.59
R-squared	0.0834	0.0966	0.0951	0.0946	0.0876	0.1007	0.1001	0.1773	0.1848	0.1879	0.1876	0.1025	0.1285	0.1252
N	105	109	109	109	109	109	109	109	109	109	109	109	109	109
Wald Test of Exogeneity														
p-value	.0486**	.0436**	.0605***	.0607***	.0648***	.0986***	.0982***	0.1271	0.1349	0.1436	0.1432	.0765***	.0320**	.0471**

* Significant at 1% ** Significant at 5% *** Significant at 10%

Table 6. MLE IV-Probit Regressions of Trust on Scores

	Manila																									
Structural Equation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)
UPCAT Raw Score	0.0291**											0.0290**														
	(0.0118)											(0.0116)														
UPCAT Formula Score		0.0237**											0.0236**											0.0225*		0.0227*
		(0.0094)											(0.0092)											(0.0085)		(0.0085)
UPCAT z-Score														0.9292*											0.8902*	
														(0.3559)											(0.3282)	
UPCAT t-Score			0.0935**												0.0932*											
			(0.0364)												(0.0356)											
Mathematics Raw Score				0.0841*																						
				(0.0299)																						
Mathematics Formula Score																0.0722*										
																(0.0258)										
Mathematics z-Score					0.6663*												0.6638*									
					(0.2458)												(0.2417)									
Mathematics t-Score						0.0668*												0.0665*								
						(0.0246)												(0.0242)								
Science Raw Score							0.0836**												0.0846**							
							(0.0359)												(0.0354)							
Science Formula Score								0.0709**												0.0716**						
								(0.0307)												(0.0302)						
Science z-Score									0.6286**												0.6334**					
									(0.2752)												(0.2706)					
Science t-Score										0.0629**												0.0634**				
										(0.0275)												(0.0271)				
Science Percentile Rank											0.0490*												0.0495*			
											(0.0190)												(0.0187)			
Constant	-4.8783**	-3.5958**	-6.4261*	-2.4506*	-1.2411*	-4.5832*	-2.7587**	-2.0867**	-1.1385**	-4.2833**	-4.4254**	-4.8536**	-3.5810*	-1.7388*	-6.4014*	-1.8453*	-1.2365*	-4.5657*	-2.7892**	-2.1073**	-1.1465**	-4.3155**	-4.4747*	-3.4206*	-1.6666*	-3.4465*
	(1.9417)	(1.4125)	(2.4945)	(0.8616)	(0.4601)	(1.6794)	(1.1718)	(0.8889)	(0.4906)	(1.8561)	(1.7246)	(1.9070)	(1.3857)	(0.6696)	(2.4460)	(0.6530)	(0.4528)	(1.6510)	(1.1571)	(0.8772)	(0.4832)	(1.8256)	(1.6985)	(1.2870)	(0.6178)	(1.2818)
athrho Constant	-0.7714**	-0.7266**	-0.6872**	-0.7310***	-0.5978***	-0.6002***	-0.4174	-0.4018	-0.392	-0.3926	-0.6173**	-0.7678**	-0.7246**	-0.6840**	-0.6851**	-0.6994***	-0.5958***	-0.5981***	-0.4265	-0.4101	-0.3986	-0.3991	-0.6294**	-0.6922**	-0.6510**	-0.7000**
	(0.3752)	(0.3501)	(0.3488)	(0.3823)	(0.3517)	(0.3527)	(0.2644)	(0.2637)	(0.2562)	(0.2564)	(0.3098)	(0.3646)	(0.3407)	(0.3385)	(0.3392)	(0.3672)	(0.3441)	(0.3450)	(0.2615)	(0.2606)	(0.2517)	(0.2518)	(0.3057)	(0.3081)	(0.3045)	(0.3080)
lnsigma Constant	3.0522*	3.2265*	1.8891*	2.0432*	-0.0509	2.2517*	1.7565*	1.9047*	-0.2804*	2.0224*	2.5079*	3.0499*	3.2238*	-0.4157*	1.8865*	2.1759*	-0.0535	2.2490*	1.7554*	1.9032*	-0.2827*	2.0201*	2.5077*	3.2060*	-0.4325*	3.2062*
	(0.1277)	(0.1234)	(0.1309)	(0.0698)	(0.0812)	(0.0813)	(0.0742)	(0.0702)	(0.0639)	(0.0639)	(0.1208)	(0.1279)	(0.1237)	(0.1313)	(0.1312)	(0.0724)	(0.0814)	(0.0815)	(0.0748)	(0.0708)	(0.0643)	(0.0643)	(0.1209)	(0.1283)	(0.1358)	(0.1282)
Wald chi2(1)	6.099	6.3891	6.6146	7.9424	7.3481	7.3755	5.4211	5.3467	5.2184	5.2208	6.6555	6.2622	6.5891	6.8156	6.8305	7.8102	7.5452	7.5728	5.6897	5.6071	5.4797	5.4824	7.0319	6.9545	7.3594	7.122
p-value Wald chi2	0.0135	0.0115	0.0101	0.0048	0.0067	0.0066	0.0199	0.0208	0.0223	0.0223	0.0099	0.0123	0.0103	0.009	0.009	0.0052	0.006	0.0059	0.0171	0.0179	0.0192	0.0192	0.008	0.0084	0.0067	0.0076
First stage regression																										
Male	0.0762*	0.0980*	0.0254*	0.0275*	0.0038*	0.0377*	0.0327*	0.0388*	0.0044*	0.0439*	0.0507*													1.4163*	0.0363*	
	(0.0251)	(0.0293)	(0.0076)	(0.0091)	(0.0011)	(0.0114)	(0.0069)	(0.0079)	(0.0009)	(0.0087)	(0.0120)													(0.4504)	(0.0123)	
Male x Height																								-223.3709*	-5.7246*	-105.2763*
																								(74.6105)	(2.0467)	(36.5681)
Square of Height																										0.0042*
																										(0.0013)
Male x Square of Height												0.0005*	0.0006*	0.0000*	0.0002*	0.0002*	0.0000*	0.0002*	0.0002*	0.0002*	0.0000*	0.0003*	0.0003*			
												(0.0001)	(0.0002)	(0.0000)	(0.0000)	(0.0001)	(0.0000)	(0.0001)	(0.0000)	(0.0000)	(0.0000)	(0.0001)	(0.0001)			
N	105	109	109	109	109	109	109	109	109	109	109	105	109	109	109	109	109	109	109	109	109	109	109	109	109	109
Wald Test of Exogeneity																										
p-value	0.0398**	0.038**	0.0488**	0.0558**	0.0892***	0.0888***	0.1144	0.1275	0.126	0.1257	0.0463**	0.0352**	0.0334**	0.0433**	0.0434**	0.0568***	0.0834***	0.083***	0.1029	0.1155	0.1133	0.113	0.0395**	0.0247**	0.0325**	0.0231**

* Significant at 1% ** Significant at 5% *** Significant at 10%

Table 7. Probit and Ordered Probit Regressions of Trust on Scores

	Moscow					
	(1)	(2)	(3)	(4)	(5)	(6)
GPA in 10-points scale	0.0294 (0.0398)	0.1155*** (0.0632)	0.0812** (0.0408)	0.0294 (0.0398)	0.0066 (0.0526)	0.052 (0.0321)
Constant	0.2859 (0.2875)	-2.5441* (0.4699)	-1.2741* (0.2977)	0.2859 (0.2875)	1.1790* (0.3805)	
cut1						-0.8549* (0.2325)
cut2						-0.125 (0.2311)
cut3						1.0631* (0.2325)
cut4						2.0799* (0.2396)
pseudo R-squared	0.0005	0.0091	0.0039	0.0005	0	0.0011
obs	881	881	881	881	881	881
chi2	0.5473	3.3435	3.961	0.5473	0.0156	2.6308
p-value(Chi2)	0.4594	0.0675***	0.0466**	0.4594	0.9007	0.1048

* Significant at 1% ** Significant at 5% *** Significant at 10%

Note: Equations (1) to (5) are Probit regressions, the dependent variableused is Trust (binary).
In (6), Ordered Probit regression is used with Trust (rank) as dependent variable.

Table 8. Twostep IV-Probit Regressions of Trust on Scores

	Moscow									
Dependent Variable	Trust (binary)		Trust 1		Trust 2		Trust 3		Trust 4	
Structural Equation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GPA in 10-points scale	.9246**	.9182**	1.183904***	1.226783***	-0.0756325	-0.0565184	.9246**	.9182**	0.4908963	0.4530711
	(0.4514)	(0.4531)	(0.7184)	(0.7281)	(0.3779)	(0.3795)	(0.4514)	(0.4531)	(0.4802)	(0.4795)
Constant	-6.1070**	-6.0610**	-10.1991**	-10.50715**	-0.1418063	-0.2786395	-6.1070**	-6.0610**	-2.274515	-2.004068
	(3.2307)	(3.2433)	(5.1587)	(5.2285)	(2.7064)	(2.7174)	(3.2307)	(3.2433)	(3.4353)	(3.4310)
Wald Chi2	4.2	4.11	2.72	2.84	0.04	0.02	4.2	4.11	1.05	0.89
P-value (Chi2)	0.0405	0.0427	0.0993	0.092	0.8414	0.8816	0.0405	0.0427	0.3066	0.3447
First stage regression										
Female x Height	.0015*		0.0015018*		.0015*		.0015*		.0015*	
	(0.0005)		(0.0005)		(0.0005)		(0.0005)		(0.0005)	
Female x Square of Height		0.00000885*		0.00000885*		0.00000885*		0.00000885*		0.00000885*
		(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)
F-stat	10.76	10.62	10.76	10.62	10.76	10.62	10.76	10.62	10.76	10.62
R-squared	0.0124	0.0122	0.0124	0.0122	0.0124	0.0122	0.0124	0.0122	0.0124	0.0122
N	862	862	862	962	862	962	862	862	862	862
Wald Test of Exogeneity										
p-value (chi2)	0.0131**	.0145**	0.093***	.0814***	0.6616	0.701	0.0131**	.0145**	0.2705	0.3116

* Significant at 1% ** Significant at 5% *** Significant at 10%

Table 9. Maximum Likelihood Estimation IV-Probit of Trust on Scores with Robust Errors

	Moscow									
Dependent Variable	Trust (binary)		Trust 1		Trust 2		Trust 3		Trust 4	
Structural Equation	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
GPA in 10-points scale	.6549*	.65276*	.7595186*	.7687502*	-0.0743997	-0.0557968	.6549*	.65276*	0.4281677	0.4022777
	(0.1577)	(0.1599)	(0.1651)	(0.1558)	(0.3672)	(0.3723)	(0.1577)	(0.1599)	(0.3241)	(0.3424)
Constant	-4.3257*	-4.3089*	-6.54311*	-6.584202*	-0.1394924	-0.2750805	-4.3257*	-4.3089*	-1.983858	-1.779383
	(1.2179)	(1.2341)	(0.7807)	(0.7226)	(2.6800)	(2.7113)	(1.2179)	(1.2341)	(2.5638)	(2.6894)
Wald Chi2	17.25	16.67	21.16	24.36	0.04	0.02	17.25	16.67	1.75	1.38
P-value (Chi2)	0	0	0	0	0.8394	0.8809	0	0	0.1864	0.24
First stage regression										
Female x Height	.0015*		0.0015018*		0.0015018*		.0015*		.0015*	
	(0.0005)		(0.0005)		(0.0005)		(0.0005)		(0.0005)	
Female x Square of Height		0.00000885*		0.00000885*		0.00000885*		0.00000885*		0.00000885*
		(0.0000)		(0.0000)		(0.0000)		(0.0000)		(0.0000)
N	862	862	862	962	862	962	862	862	862	862
Wald Test of Exogeneity										
p-value (chi2)	0.013**	0.0143**	0.057***	0.0426**	0.6643	0.7038	0.013**	0.0143**	0.2536	0.2986

* Significant at 1% ** Significant at 5% *** Significant at 10%

Table 9.B IV-Ordered Probit of Trust on Scores with Robust Errors

	Moscow		
Dependent Variable		**Trust (rank)**	
Structural Equation		(11)	(12)
	GPA in 10-points scale	0.1302983	0.1283151
		(0.2485)	(0.2503)
	/atanhrho_12	-0.0901967	-0.0879083
		(0.2847)	(0.2866)
	/lnsig_2	0.1040776*	.1041934*
		(0.0202)	(0.0202)
	Cut 1	-0.2899221	-0.3043515
		(1.8131)	(1.8253)
	Cut 2	0.4376663	0.4233517
		(1.7937)	(1.8062)
	Cut 3	1.620695	1.606627
		(1.7635)	(1.7766)
	Cut 4	2.633354**	2.619503***
		(1.7330)	(1.7465)
	sig_2	1.109687	1.109815
		(0.0225)	(0.0225)
	rho_12	-0.0899529	-0.0876826
		(0.2824)	(0.2844)
Wald Chi2		0.28	0.26
P-value (Chi2)		0.6	0.6081
First stage regression			
	Female x Height	.0015*	
		(0.0005)	
	Female x Square of Height		0.00000933*
			(0.0000)
N		898	898

* Significant at 1% ** Significant at 5% *** Significant at 10%

Table 10. Hausman Specification Test

Manila

Variables			IV-Probit		Probit			
Outcome	Independent	Instrument(s)	Coefficient	Obs	Coefficient	Obs	Difference	Chi square
Trust	UPCAT Raw Score	Male x Height	0.0382038	105	0.0013005	106	0.0369032	2.48^
Trust	UPCAT Formula Score	Male x Height	0.0302229	109	0.0030541	111	0.0271688	2.43^
Trust	UPCAT t-Score	Male x Height	0.116491	109	0.0175301	111	0.0989609	2.25^
Trust	Mathematics Raw Score	Male x Height	0.1076233	109	0.0128421	111	0.0947812	2.32^
Trust	Mathematics z-Score	Male x Height	0.7889974	109	0.1827098	111	0.6062876	2.04
Trust	Mathematics t-Score	Male x Height	0.0791817	109	0.018251	111	0.0609307	2.04
Trust	Science Raw Score	Male x Height	0.0909858	109	0.0330493	111	0.0579365	1.7
Trust	Science Formula Score	Male x Height	0.0766838	109	0.0292067	111	0.0474771	1.64
Trust	Science z-Score	Male x Height	0.6775057	109	0.2531729	111	0.4243329	1.68
Trust	Science t-Score	Male x Height	0.0677968	109	0.0252986	111	0.0424982	1.68
Trust	Science Percentile Rank	Male x Height	0.0585818	109	0.0121189	111	0.0464629	2.11^
Trust	UPCAT z-Score	Male x Height, Male	1.08006	109	0.1744796	111	0.9055807	2.68^
Trust	UPCAT Formula Score	Male x Height, Male	0.0279821	109	0.0030541	111	0.024928	2.92***
Trust	UPCAT Raw Score	Male x Square of Height	0.0379155	105	0.0013005	111	0.0366149	2.58^
Trust	UPCAT Formula Score	Male x Square of Height	0.0300596	109	0.0030541	111	0.0270055	2.53^
Trust	UPCAT z-Score	Male x Square of Height	1.155229	109	0.1744796	111	0.9807496	2.35^
Trust	UPCAT t-Score	Male x Square of Height	0.1158925	109	0.0175301	111	0.0983624	2.34^
Trust	Mathematics Formula Score	Male x Square of Height	0.0905924	109	0.0124944	111	0.078098	2.4^
Trust	Mathematics z-Score	Male x Square of Height	0.7851213	109	0.1827098	111	0.6024114	2.12^
Trust	Mathematics t-Score	Male x Square of Height	0.0787851	109	0.018251	111	0.0605341	2.12^
Trust	Science Raw Score	Male x Square of Height	0.0923578	109	0.0330493	111	0.0593085	1.79
Trust	Science Formula Score	Male x Square of Height	0.0777193	109	0.0292067	111	0.0485126	1.72
Trust	Science z-Score	Male x Square of Height	0.6844052	109	0.2531729	111	0.4312323	1.77
Trust	Science t-Score	Male x Square of Height	0.0684871	109	0.0252986	111	0.0431885	1.77
Trust	Science Percentile Rank	Male x Square of Height	0.0596453	109	0.0121189	111	0.0475265	2.19^
Trust	UPCAT Formula Score	Male x Square of Height, Male	0.0283672	109	0.0030541	111	0.0253131	2.97***

* Significant at 1% ** Significant at 5% *** Significant at 10%

Moscow

Variables			IV-Probit		Probit			
Outcome	Independent	Instrument	Coefficient	Obs	Coefficient	Obs	Difference	Chi square
Trust (binary)	GPA in 10-points scale	Female x Height	0.9246271	862	0.0294141	881	0.8952131	3.96**
Trust (binary)	GPA in 10-points scale	Female x Square of Height	0.9181901	862	0.0294141	881	0.8887761	3.88**
Trust 1	GPA in 10-points scale	Female x Height	1.183904	862	0.115486	881	1.068418	2.23^
Trust 1	GPA in 10-points scale	Female x Square of Height	1.226783	862	0.115486	881	1.111297	2.35^
Trust 2	GPA in 10-points scale	Female x Height	-0.0756325	862	0.0812104	881	-0.1568429	0.17
Trust 2	GPA in 10-points scale	Female x Square of Height	-0.0565184	862	0.0812104	881	-0.1377288	0.13
Trust 3	GPA in 10-points scale	Female x Height	0.9246271	862	0.0294141	881	0.8952131	3.96**
Trust 3	GPA in 10-points scale	Female x Square of Height	0.9181901	862	0.0294141	881	0.8887761	3.88**
Trust 4	GPA in 10-points scale	Female x Height	0.4908963	862	0.0065634	881	0.4843329	1.03
Trust 4	GPA in 10-points scale	Female x Square of Height	0.4530711	862	0.0065634	881	0.4465077	0.88

** Significant at 5% *** Significant at 10% ^ Significant at 15%

Any opinions or claims contained in this Working Paper do not necessarily reflect the views of HSE.

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