Income and Height in Indonesia

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Abstract

Height is associated with income in Indonesia. This project assess the latter by exploiting the wave 3 and the wave 5 of the Indonesian Life and Family survey (IFLS). A Time Fixed Effects analysis reveals about eight percent increase in income when height is incremented by one centimeter. Overall the effect has decreased from 2000 to 2014.

1 Introduction

The Height and Income debate started in the 80s and continue to fuel the curiosity of researchers, especially when it comes to developing countries, as observations in some of those countries are not consistent with the theory in the developed world at an aggregate level. The literature on the developing world is still new as there is a lack of data set that can allow to assess the link between those two variables. Studies are mostly done in Upper-Middle Income countries such as Mexico, China that developed interesting panel data collection over time. Height differences all over the world is attributed to environmental factors and more specifically through nutrition and disease. At first, the literature associated taller individuals to higher income per capita countries. Thus Steckel [1983] investigates the link between height and income per capita and found that an increase in income inequalities decreases the average height of the population. Bogin et al. [2017] also found evidence of height gradients reflecting social disadvantage or inequality gradients. Brinkman et al. [1988] used Netherlands data on height to estimate with precision the real income per capita for years when those values are missing. In fourteen years (2000-2014), the GDP per capita has almost doubled in Indonesia, which if consistent with the literature above indicates an increase in average height in the country [1]. However, Deaton [2007] who investigated the relationship between height and income per capita in developing countries found no consistent relationship as female from very poor areas are taller than women in Latin America or Asian countries.

At the country level, there are evidence associating taller individuals to success or better jobs than shorter ones. Meyer and Selmer [1999] studied the link between adult body height and level of education as well as income in Norway. It found that height could explain a small fraction of those two socio-economic factors variance. Judge and Cable [2004] found that height matters for career success and explored the self esteem and social esteem mechanism theoretically and empirically. Case and Paxson [2008] found evidence that cognitive skills are correlated with

[1] This is not tested in the current project.

being tall and account for the difference in income between tall and short people in the US and UK.
In the developing world height is associated with strength which is in turn remunerated on the job market. LaFave and Thomas [2017] found evidence that strength is actually remunerated in rural Java (Indonesia). However Vogl [2014] found height being remunerated in Mexico using the cognitive abilities mechanism. Yamamura et al. [2015] explore two channels in China: the political channel and the market channel. He found that the taller an individual is the more likely he is to be a member of the communism party and the more likely he is to earn more. Following Deaton [2007], Moradi [2010] investigated the relationship between height and GDP per capita and found inconsistent patterns but did find a positive temporal variation between the two.

This project wants to contribute to the debate by using up to date panel datasets and by investigating within a country whether taller people succeed better than shorter people. The project used the Indonesian Family and Life Survey (IFLS) which collects some socioeconomic and health information on the same individuals as well as on split-off families that they tracked. The data base is rich of information on employment, income, living conditions, health measurements and others. The findings so far support the existence of a Height premium in Indonesia. But a fixed effects analysis suggests that the importance of Height in the Indonesian economy is fading away. Thus, controlling for time fixed effects, an increase in height is associated with an increase in income for about 7.6% but the association was stronger in 2000 than in 2014.

The remainder of the document is organized as follows: Section 2 presents the IFLS data base and describes the sample used as well as the methodology used for the analysis. Section 3 presents the Results and Section 4 the Conclusion.

2 Data and Methodology

2.1 Data and Summary Statistics

The Indonesia Family Life Survey (IFLS) is a panel survey on socioeconomic and health status of individuals. It is based on a sample of households representing about 83% of the Indonesian population living in 13 of the nation's 26 provinces in 1993. The survey collects data on individual respondents, their families, their households, the communities in which they live, and the health and education facilities they use. The survey has five waves This project is using the third (IFLS3) and the fifth wave (IFLS5). IFLS3 data collection was done in 2000 and IFLS5 was fielded in late 2014 and early 2015.
The sample for this project is composed by individuals from 25 to 65 years old following Vogl [2014] for the same study done in Mexico. Table 1 presents some statistics [2] of the sample in 2000 and in 2014. We can notice that the level of education has increased from 2000 to 2014 by about a year. The same goes for the income level which has almost doubled in 14 years.

2.2 Methodology

The project aims at analyzing the relationship between height and income in Indonesia. The analysis will be using the following specification:

[2]Two more complete summary tables can be found in the section Appendix of the paper.

Table 1: Summary Statistics

	2000		2014	
	Mean	SD	Mean	SD
Urban	.5121611	.4998627	.6016682	.4895597
Age	39.19052	11.1827	39.40697	10.25386
Married	.8132905	.3896864	.8472849	.3597165
Male	.4952409	.4999879	.4975317	.4999992
# of Years of Education	8.105752	4.328499	9.70212	3.948505
Income	4146457	8284858	2.41e+07	5.25e+07
Income (Deflated to 2010 values)	1825106	3646666	3.00e+07	6.54e+07
Height	155.2185	7.968242	156.2634	8.005925

$$\ln Income_i = \alpha + \beta Height + \gamma X_i + u_i \tag{1}$$

where i represents an individual, X_i is a set of controls such as the number of years of education, the gender, the marital status, the place of residence. Income is the dependent variable and is deflated to 2010 values for both years of analysis to allow for comparison over time. Height is measured in centimeters (cm).
Equation 1 is a simple equation that will allow to assess the relationship between Height and income. Some other specifications include an analysis within gender, within occupation and within the type of hirer, that is whether the individual is self employed or work for another organization.

3 Results

This section presents the results of our analysis. An overview of the results are presented in the section but more detailed results can be found in the Appendix.

Height and Income

The literature suggests that a taller person is associated with a higher income. The results obtained and presented in table 2 are consistent with the literature. Thus an increase by 1 cm of height is associated with respectively 2.6% and 1.04% increase in income in 2000 and in 2014. These results suggest that the association has weakened over time.

Height and Income within Gender

An analysis by gender shows that in 2014 the effect for both male and female individuals are the same. This can be noticed in columns 5 and 6 of table 3. Here, Male is a dummy variable which equals 1 when the individual is a male respondent. Thus, the association between height and income in 2014 is homogeneous across respondents. The result of column 4 confirms the latter. In 2000, the association is higher (about 3% higher) for female than for male. Indeed, the interaction term is negative suggesting that most of the effect comes from the female respon-

Table 2: Height and Income

	2000		2014	
Height	0.167***	0.0260***	0.0468***	0.0104***
	(0.00492)	(0.00671)	(0.00150)	(0.00204)
Controls	No	Yes	No	Yes
Observations	11,523	11,034	17,769	14,551

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

dents. This result is quite surprising as [3], the literature did not suggest any higher association for female. An attempt to explain the result might be that fewer women were working back in 2000 and most of them would be involved in unpaid activities. The literature does suggest that in general men earns more than women but there is a height premium for both gender.
A quick analysis on whether entrance on the job market is associated with height reveals non significant results. This might suggest that there is no discrimination based on how tall someone is to get a job on the market. The result is the same when the analysis is run by gender. More detailed results are found in the Appendix section

Table 3: Height and Income within Gender

	2000			2014		
	(1)	(2)	(3)	(4)	(5)	(6)
Height	0.0650***	0.0152***	0.0493***	0.0101***	0.0102***	0.0107**
	(0.0104)	(0.00518)	(0.0140)	(0.00348)	(0.00234)	(0.00421)
Height × Male	-0.0641***			0.000512		
	(0.0132)			(0.00432)		
	Interaction	Male	Female	Interaction	Male	Female
Controls	Yes	Yes	Yes	Yes	Yes	Yes
Observations	11,034	6,299	4,735	14,302	8,696	5,606

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Height and Income within Occupation

One of the ideas behind this project was a theory about how height might not matter at all when it comes to blue collar jobs as compared to white collar jobs. IFLS does not clearly define white and blue collar jobs but provide a classification of individual jobs into nine (09) categories for both waves. Thus, the categories are defined as follow: 1.Agriculture, forestry, fishing and hunting, 2.Mining and quarrying, 3.Manufacturing, 4.Electricity, gas, water, 5.Construction,

[3] To the best of my current knowledge

6.Wholesale, retail, restaurants and hotels, 7.Transportation, storage and communications, 8.Finance, insurance, real estate and business services, 9.Social services. There is a tenth class that was added to the wave 5 and are activities or jobs that could not be classified. A regression was run within each categories.
in 2000, there is a surprising association with height and income within categories 1 and 4. There is respectively a 5 and 10% significance. This means that height mattered in agriculture, forestry, fishing, hunting, electricity, gas, and water. One question that comes naturally from this surprising result is the following: is height associated with strength? In contrast, those associations disappeared in 2014 and there is an association with height and income within the respondents of categories 6, 8 and 9 [4]. A definition that define white collars as exclusively individuals working in an office allowed to classify the respondents into the blue collar category (1-7) and the white collar category (8 and 9). Table 4 shows the results of this analysis. Columns 1 and 2 show that in 2000, height mattered for getting a job in the blue collar category. Fourteen (14) years after, the height mattered for both categories. But a look at whether people self-select themselves into the white collar job for both years indicates a significant result. This means that taller individuals prefer white collar jobs. This is consistent with the literature.

Table 4: Height and Income within Occupation

	2000		2014	
	(1)	(2)	(3)	(4)
Height	0.0281***	0.0111	0.00643**	0.0189***
	(0.00802)	(0.00866)	(0.00261)	(0.00386)
	Blue Collar	White Collar	Blue Collar	White Collar
Controls	Yes	Yes	Yes	Yes
Observations	8,382	2,316	9,657	3,966

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Height and Income within the Type of Hirer

IFLS 3 classifies the type of Hirer into six (06) categories while IFLS 5 does it into eight (08) categories. For the IFLS 3 the categories are the following: 1.Self employed, 2.Self-employed with unpaid family worker/temporary worker, 3.Self-employed with permanent worker, 4.Government worker, 5.Private worker, 6.Unpaid family worker. The two (02) categories added by IFLS 5 are: 7.Casual worker in agriculture, 8.Casual worker not in agriculture. Height matters for all the categories for both years except for self employed workers in 2014. The self-employed group is composed by self-employed individuals without employees, self-employed individuals with temporary and unpaid employees, and self-employed individuals with paid employees. When the effect is decomposed between those three (03) groups, the third group coefficient is significant. That group resembles corporations and successful businesses and thus their income has a significant association with height [5].

[4] Another interesting way to look at it would have been if we knew the position of each respondent within the category or sector they are working in

[5] Complete tables are available in the Appendix section

Time Fixed Effects Analysis

To obtain better results and take an advantage of the panel nature of the Indonesian Family and Life survey, a time fixed effects regression was run. The Fixed Effects analysis (column 3 of the table below) reveals that a 1 cm increment in height is associated with about 8% increase in income. Also, the interaction term is negative suggesting a decrease over time of the height premium. One last remark is that income has generally and significantly increased from 2000 to 2014.

	Pooled OLS		Fixed Effects
	(1)	(2)	(3)
Height	0.123***	0.0238***	0.0757***
	(0.00428)	(0.00558)	(0.00601)
Year = 2014			23.66***
			(1.091)
Height × Year2014			-0.128***
			(0.00691)
Controls	No	Yes	Yes
Observations	13,210	12,795	12,795
R-squared	0.058	0.229	0.409

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

4 Conclusion

This project wants to contribute to the debate of height premium in countries. The project is done in Indonesia and used the Indonesian Family and Life survey. Throughout the paper, there was evidence of height being remunerated on the job market. The effect has decreased over time and turned homogeneous across gender in 2014. Controlling for time fixed effects, the analysis reveals a 7.6% increase (about 8%) in income as height is incremented by 1 cm. In the literature there are suggestions or hypotheses such as high cognitive ability associated with height, brawn, discrimination that can explain this height premium within countries.

Looking toward future research, the paper points in two directions: First, testing the different hypothesis, especially those on cognitive abilities and brawn to explain the mechanism between height and income and get a causal effect. The second comes from the fact that the importance of height is decreasing in the Indonesian Economy. The natural question that comes into mind is whether a structural transformation of the Indonesian economy contributed to decreasing the importance of height in job attribution. And if it is so, why? or what kind of theory support that? Indonesia has almost doubled its GDP per capita in 14 years (2000-2014) and has also reduced by half the infant mortality rate [6] which is sign of growth. Employment in Agriculture decreased within those 14 years while employment in Industry increased [7]. This indicates

[6] World Band Data
[7] World Bank Data

naively a structural change of the Indonesian economy. Does structural change decrease the income gap based on height? The literature already showed for developed countries that height is a good predictor of GDP per capita. This means that the average height in Indonesia has increased over time [8] but there is still room to verify whether it contributed to closing the income gap.

[8] consistent with 1 for 2014 vs 2000.

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Appendix

Tables 5 to 13 are imported from Stata for the year 2014. Tables 14 to 22 are imported from Stata for the year 2000. Table 23 is the complete version of **??**.

Table 5: Summary Statistics for Wave 5 (2014)

	N	Mean	SD	Min	Max
Urban	46996	.6016682	.4895597	0	1
Age	46996	39.40697	10.25386	25	65
Married	46996	.8472849	.3597165	0	1
Male	46996	.4975317	.4999992	0	1
Javanese	46996	.4340369	.495635	0	1
# of Years of Education	45055	9.70212	3.948505	0	21
Income	23771	2.41e+07	5.25e+07	0	1.00e+09
Income (Deflated to 2010 values)	23771	3.00e+07	6.54e+07	0	1.24e+09
Height	23209	156.2634	8.005925	65.2	174.3

Table 6: Relationship between Income and Height

VARIABLES	Income		Income (Deflated to 2010 values)	
Height	0.0468***	0.0105***	0.0468***	0.0104***
	(0.00157)	(0.00216)	(0.00158)	(0.00217)
Urban		0.327***		0.328***
		(0.0249)		(0.0251)
Age		0.0906***		0.0909***
		(0.00959)		(0.00965)
Age squared		-0.00104***		-0.00105***
		(0.000111)		(0.000112)
Married		0.117***		0.117***
		(0.0357)		(0.0359)
Male		0.587***		0.588***
		(0.0343)		(0.0345)
Javanese		-0.103***		-0.102***
		(0.0238)		(0.0239)
# of Years of Education		0.115***		0.115***
		(0.00322)		(0.00324)
Constant	8.664***	10.93***	8.877***	11.14***
	(0.249)	(0.384)	(0.251)	(0.386)
Observations	17,455	14,302	17,455	14,302
R-squared	0.048	0.181	0.048	0.179

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 7: Relationship Between Income and Height by Gender

VARIABLES	(1)	(2)	(3)	(4)	(5)	(6)
	Income			Income (Deflated to 2010 values)		
	Interaction	Male	Female	Interaction	Male	Female
Height	0.0102***	0.0103***	0.0108**	0.0101***	0.0102***	0.0107**
	(0.00346)	(0.00233)	(0.00418)	(0.00348)	(0.00234)	(0.00421)
Height × Income	0.000502			0.000512		
	(0.00430)			(0.00432)		
Urban	0.327***	0.277***	0.421***	0.328***	0.277***	0.422***
	(0.0249)	(0.0272)	(0.0476)	(0.0251)	(0.0273)	(0.0479)
Age	0.0906***	0.0697***	0.117***	0.0909***	0.0699***	0.117***
	(0.00959)	(0.0105)	(0.0182)	(0.00965)	(0.0106)	(0.0183)
Age squared	-0.00104***	-0.000883***	-0.00125***	-0.00105***	-0.000886***	-0.00125***
	(0.000111)	(0.000121)	(0.000213)	(0.000112)	(0.000122)	(0.000214)
Married	0.117***	0.379***	-0.0718	0.117***	0.380***	-0.0724
	(0.0357)	(0.0444)	(0.0606)	(0.0359)	(0.0446)	(0.0610)
Male	0.509			0.509		
	(0.669)			(0.673)		
Javanese	-0.102***	-0.0786***	-0.127***	-0.102***	-0.0785***	-0.126***
	(0.0238)	(0.0259)	(0.0452)	(0.0239)	(0.0261)	(0.0455)
# of Years of Education	0.115***	0.103***	0.136***	0.115***	0.103***	0.136***
	(0.00322)	(0.00370)	(0.00579)	(0.00324)	(0.00372)	(0.00582)
Constant	10.97***	12.02***	10.08***	11.19***	12.24***	10.29***
	(0.560)	(0.438)	(0.739)	(0.564)	(0.440)	(0.743)
Observations	14,302	8,696	5,606	14,302	8,696	5,606
R-squared	0.181	0.149	0.137	0.179	0.147	0.136

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 8: Entry on the Job Market and Height: Any Correlation?

	(1)	(2)	(3)
VARIABLES	Have you ever worked		
Height	0.000132	0.000304	-0.000405
	(0.000451)	(0.000328)	(0.000796)
Urban	-0.0470***	-0.0123***	-0.0777***
	(0.00524)	(0.00388)	(0.00909)
Age	0.0363***	0.0221***	0.0451***
	(0.00194)	(0.00145)	(0.00336)
Age squared	-0.000416***	-0.000298***	-0.000487***
	(2.23e-05)	(1.65e-05)	(3.90e-05)
Married	-0.0608***	0.0748***	-0.128***
	(0.00743)	(0.00589)	(0.0128)
Male	0.321***		
	(0.00709)		
Javanese	0.0158***	0.0131***	0.0223**
	(0.00499)	(0.00370)	(0.00866)
# of Years of Education	0.00354***	-0.00206***	0.00936***
	(0.000692)	(0.000525)	(0.00119)
Male = o,		-	-
Constant	-0.0869	0.493***	-0.214
	(0.0788)	(0.0614)	(0.138)
Observations	22,855	10,596	12,259
R-squared	0.173	0.083	0.030

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 9: Height and Income per Occupation

	Income									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Agriculture & co	Mining	Manufacturing	Electricity & co	Construction	Wholesale & co	Transportation & co	Finance & co	Social services	Unclassified
Height	-0.000347	-0.00234	0.00279	-0.00361	-0.000286	0.0151***	0.0149	0.0248***	0.0173***	0.0359**
	(0.00585)	(0.0125)	(0.00486)	(0.0193)	(0.00668)	(0.00376)	(0.00912)	(0.00672)	(0.00429)	(0.0161)
Urban	-0.0245	0.139	0.309***	0.416*	0.359***	0.121***	0.0736	0.149	0.301***	0.440**
	(0.0747)	(0.152)	(0.0634)	(0.231)	(0.0817)	(0.0452)	(0.110)	(0.0989)	(0.0516)	(0.207)
Age	0.0377	0.00784	0.0654***	-0.0437	0.0690**	0.0815***	0.0531	0.0230	0.155***	0.0986
	(0.0256)	(0.0595)	(0.0236)	(0.0961)	(0.0321)	(0.0165)	(0.0438)	(0.0295)	(0.0202)	(0.0830)
Age squared	-0.000551*	7.97e-06	-0.000866***	0.000519	-0.000807**	-0.000892***	-0.000757	-0.000158	-0.00156***	-0.00118
	(0.000286)	(0.000703)	(0.000284)	(0.00116)	(0.000378)	(0.000192)	(0.000512)	(0.000355)	(0.000238)	(0.000965)
Married	0.166	0.168	0.134	0.483	0.493***	0.0352	0.208	0.191*	0.00492	0.303
	(0.103)	(0.239)	(0.0861)	(0.350)	(0.124)	(0.0601)	(0.163)	(0.102)	(0.0686)	(0.246)
Male	1.001***	1.014***	0.692***	0.0542	0.322	0.579***	0.465**	-0.0417	0.496***	0.611**
	(0.100)	(0.271)	(0.0793)	(0.420)	(0.218)	(0.0587)	(0.235)	(0.115)	(0.0670)	(0.255)
Javanese	-0.0786	-0.163	0.0125	-0.0363	0.0887	-0.339***	0.0235	-0.0514	-0.0937**	-0.446**
	(0.0651)	(0.154)	(0.0563)	(0.222)	(0.0761)	(0.0404)	(0.104)	(0.0727)	(0.0472)	(0.181)
# of Years of Education	0.0760***	0.180***	0.110***	0.159***	0.0683***	0.0828***	0.0904***	0.133***	0.133***	0.106***
	(0.0101)	(0.0197)	(0.00935)	(0.0407)	(0.0128)	(0.00631)	(0.0151)	(0.0107)	(0.00593)	(0.0248)
Constant	13.70***	14.10***	12.96***	15.68***	13.33***	11.11***	11.67***	10.44***	8.090***	6.690**
	(1.063)	(2.371)	(0.864)	(3.521)	(1.248)	(0.676)	(1.695)	(1.120)	(0.763)	(3.045)
Observations	3,051	171	1,853	80	757	3,381	364	550	3,416	200
R-squared	0.102	0.474	0.218	0.279	0.098	0.191	0.183	0.306	0.210	0.401

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 10: Height and Deflated Income per Occupation

	Income (Deflated to 2010 values)									
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
	Agriculture & co	Mining	Manufacturing	Electricity & co	Construction	Wholesale & co	Transportation & co	Finance & co	Social services	Unclassified
Height	-0.000508	-0.00234	0.00278	-0.00361	-0.000272	0.0151***	0.0149	0.0248***	0.0173***	0.0359**
	(0.00590)	(0.0125)	(0.00488)	(0.0193)	(0.00671)	(0.00376)	(0.00912)	(0.00672)	(0.00432)	(0.0161)
Urban	-0.0259	0.139	0.308***	0.416*	0.361***	0.121***	0.0736	0.149	0.301***	0.440**
	(0.0754)	(0.152)	(0.0636)	(0.231)	(0.0820)	(0.0452)	(0.110)	(0.0989)	(0.0519)	(0.207)
Age	0.0381	0.00784	0.0654***	-0.0437	0.0694**	0.0815***	0.0531	0.0230	0.155***	0.0986
	(0.0258)	(0.0595)	(0.0237)	(0.0961)	(0.0323)	(0.0165)	(0.0438)	(0.0295)	(0.0203)	(0.0830)
Age squared	-0.000556*	7.97e-06	-0.000866***	0.000519	-0.000812**	-0.000893***	-0.000757	-0.000158	-0.00156***	-0.00118
	(0.000288)	(0.000703)	(0.000286)	(0.00116)	(0.000379)	(0.000192)	(0.000512)	(0.000355)	(0.000240)	(0.000965)
Married	0.167	0.168	0.133	0.483	0.495***	0.0351	0.208	0.191*	0.00428	0.303
	(0.104)	(0.239)	(0.0864)	(0.350)	(0.125)	(0.0601)	(0.163)	(0.102)	(0.0690)	(0.246)
Male	1.005***	1.014***	0.693***	0.0542	0.321	0.579***	0.465**	-0.0417	0.497***	0.611**
	(0.101)	(0.271)	(0.0796)	(0.420)	(0.219)	(0.0588)	(0.235)	(0.115)	(0.0673)	(0.255)
Javanese	-0.0776	-0.163	0.0128	-0.0363	0.0893	-0.339***	0.0235	-0.0514	-0.0939**	-0.446**
	(0.0657)	(0.154)	(0.0565)	(0.222)	(0.0764)	(0.0404)	(0.104)	(0.0727)	(0.0475)	(0.181)
# of Years of Education	0.0763***	0.180***	0.110***	0.159***	0.0682***	0.0828***	0.0904***	0.133***	0.133***	0.106***
	(0.0102)	(0.0197)	(0.00939)	(0.0407)	(0.0129)	(0.00631)	(0.0151)	(0.0107)	(0.00596)	(0.0248)
Constant	13.93***	14.32***	13.18***	15.90***	13.54***	11.32***	11.89***	10.66***	8.301***	6.909**
	(1.073)	(2.371)	(0.867)	(3.521)	(1.254)	(0.677)	(1.695)	(1.120)	(0.767)	(3.045)
Observations	3,051	171	1,853	80	757	3,381	364	550	3,416	200
R-squared	0.101	0.474	0.217	0.279	0.098	0.191	0.183	0.306	0.208	0.401

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 11: Income and Height: White vs Blue Collar

VARIABLES	Income			Income (Deflated to 2010 values)		
	(1)	(2)	(3)	(4)	(5)	(6)
	Blue Collar	White Collar	Unclassified	Blue Collar	White Collar	Unclassified
Height	0.00648**	0.0189***	0.0359**	0.00643**	0.0189***	0.0359**
	(0.00259)	(0.00384)	(0.0161)	(0.00261)	(0.00386)	(0.0161)
Urban	0.329***	0.312***	0.440**	0.329***	0.312***	0.440**
	(0.0297)	(0.0469)	(0.207)	(0.0299)	(0.0472)	(0.207)
Age	0.0692***	0.127***	0.0986	0.0695***	0.128***	0.0986
	(0.0115)	(0.0178)	(0.0830)	(0.0115)	(0.0179)	(0.0830)
Age squared	-0.000881***	-0.00127***	-0.00118	-0.000884***	-0.00127***	-0.00118
	(0.000132)	(0.000211)	(0.000965)	(0.000133)	(0.000212)	(0.000965)
Married	0.149***	0.0226	0.303	0.150***	0.0221	0.303
	(0.0442)	(0.0608)	(0.246)	(0.0444)	(0.0612)	(0.246)
Male	0.604***	0.474***	0.611**	0.604***	0.475***	0.611**
	(0.0417)	(0.0602)	(0.255)	(0.0420)	(0.0605)	(0.255)
Javanese	-0.113***	-0.0821*	-0.446**	-0.112***	-0.0823*	-0.446**
	(0.0286)	(0.0422)	(0.181)	(0.0288)	(0.0424)	(0.181)
# of Years of Education	0.100***	0.131***	0.106***	0.100***	0.131***	0.106***
	(0.00448)	(0.00537)	(0.0248)	(0.00450)	(0.00540)	(0.0248)
Constant	12.26***	8.499***	6.690**	12.48***	8.712***	6.909**
	(0.464)	(0.675)	(3.045)	(0.467)	(0.679)	(3.045)
Observations	9,657	3,966	200	9,657	3,966	200
R-squared	0.157	0.212	0.401	0.155	0.210	0.401

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 12: Being a White Collar and Height: Any Association?

VARIABLES	(1) white
Height	0.00114**
	(0.000545)
Urban	0.0818***
	(0.00631)
Age	0.00545**
	(0.00241)
Age squared	-3.34e-05
	(2.79e-05)
Married	-0.0420***
	(0.00900)
Male	-0.0329***
	(0.00858)
Javanese	-0.0241***
	(0.00604)
# of Years of Education	0.0394***
	(0.000827)
Constant	-0.443***
	(0.0965)
Observations	17,985
R-squared	0.150

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 13: Income and Height by Type of Hirer

VARIABLES	Income				Income (Deflated to 2010 values)			
	(1) Self-Employed	(2) Government Worker	(3) Private Worker	(4) Casual Worker	(5) Self-Employed	(6) Government Worker	(7) Private Worker	(8) Casual Worker
Height	0.00601*	0.0270***	0.0104***	0.0175***	0.00590	0.0271***	0.0104***	0.0176***
	(0.00364)	(0.00642)	(0.00294)	(0.00659)	(0.00366)	(0.00646)	(0.00295)	(0.00664)
Urban	0.323***	0.372***	0.257***	0.335***	0.323***	0.372***	0.257***	0.335***
	(0.0409)	(0.0734)	(0.0381)	(0.0739)	(0.0411)	(0.0738)	(0.0383)	(0.0744)
Age	0.0957***	0.162***	0.0458***	0.135***	0.0958***	0.162***	0.0459***	0.137***
	(0.0162)	(0.0355)	(0.0144)	(0.0297)	(0.0163)	(0.0357)	(0.0145)	(0.0299)
Age squared	-0.00114***	-0.00138***	-0.000593***	-0.00159***	-0.00114***	-0.00138***	-0.000594***	-0.00160***
	(0.000182)	(0.000428)	(0.000176)	(0.000344)	(0.000183)	(0.000430)	(0.000176)	(0.000347)
Married	0.0509	0.184	0.155***	-0.00169	0.0512	0.185	0.155***	-0.00249
	(0.0633)	(0.119)	(0.0477)	(0.101)	(0.0637)	(0.120)	(0.0479)	(0.102)
Male	0.578***	0.135	0.546***	1.031***	0.579***	0.136	0.546***	1.032***
	(0.0577)	(0.102)	(0.0475)	(0.109)	(0.0580)	(0.102)	(0.0477)	(0.109)
Javanese	-0.189***	0.146*	-0.0708**	-0.0493	-0.188***	0.146*	-0.0708**	-0.0486
	(0.0397)	(0.0746)	(0.0329)	(0.0720)	(0.0399)	(0.0750)	(0.0330)	(0.0726)
# of Years of Education	0.0832***	0.126***	0.0925***	0.0432***	0.0833***	0.126***	0.0926***	0.0431***
	(0.00584)	(0.0131)	(0.00481)	(0.0122)	(0.00588)	(0.0132)	(0.00483)	(0.0123)
Constant	11.99***	6.308***	12.30***	8.964***	12.21***	6.511***	12.52***	9.141***
	(0.659)	(1.189)	(0.525)	(1.209)	(0.662)	(1.196)	(0.528)	(1.218)
Observations	5,656	1,268	5,069	1,548	5,656	1,268	5,069	1,548
R-squared	0.121	0.241	0.171	0.183	0.120	0.239	0.170	0.181

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 14: Summary Statistics for Wave 3 (2000)

	N	Mean	SD	Min	Max
Urban	23641	.5121611	.4998627	0	1
Age	23641	39.19052	11.1827	25	65
Married	23641	.8132905	.3896864	0	1
Male	23639	.4952409	.4999879	0	1
Islam	23641	.8804196	.3244771	0	1
# of Years of Education	22392	8.105752	4.328499	0	21
Income	15131	4146457	8284858	0	4.00e+08
Income (Deflated to 2010 values)	15131	1825106	3646666	0	1.76e+08
Height	15775	155.2185	7.968242	62.3	173.4

Table 15: Relationship between Income and Height

VARIABLES	Income		Income (Deflated to 2010 values)	
Height	0.174***	0.0268***	0.167***	0.0260***
	(0.00520)	(0.00710)	(0.00492)	(0.00671)
Urban		1.477***		1.410***
		(0.0851)		(0.0804)
Age		0.287***		0.276***
		(0.0305)		(0.0288)
Age Squared		-0.00314***		-0.00302***
		(0.000350)		(0.000331)
Married		-0.766***		-0.712***
		(0.116)		(0.110)
Male		2.835***		2.691***
		(0.112)		(0.106)
Islam		0.419***		0.393***
		(0.122)		(0.115)
# of Years of Education		0.171***		0.167***
		(0.0107)		(0.0101)
Constant	-14.26***	-0.604	-13.83***	-0.859
	(0.814)	(1.242)	(0.771)	(1.174)
Observations	11,523	11,034	11,523	11,034
R-squared	0.089	0.201	0.091	0.205

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 16: Relationship Between Income and Height by Gender

	(1)	(2)	(3)	(4)	(5)	(6)
VARIABLES		Income			Income (Deflated to 2010 values)	
Height	0.0685***	0.0151***	0.0518***	0.0650***	0.0152***	0.0493***
	(0.0111)	(0.00544)	(0.0149)	(0.0104)	(0.00518)	(0.0140)
Height × Gender	-0.0687***			-0.0641***		
	(0.0139)			(0.0132)		
Urban	1.480***	0.520***	2.762***	1.413***	0.509***	2.620***
	(0.0850)	(0.0665)	(0.173)	(0.0803)	(0.0633)	(0.163)
Age	0.285***	0.219***	0.266***	0.274***	0.213***	0.254***
	(0.0304)	(0.0243)	(0.0609)	(0.0288)	(0.0231)	(0.0574)
Age Squared	-0.00312***	-0.00247***	-0.00295***	-0.00300***	-0.00240***	-0.00282***
	(0.000350)	(0.000278)	(0.000698)	(0.000330)	(0.000265)	(0.000659)
Married	-0.796***	1.600***	-2.223***	-0.740***	1.528***	-2.089***
	(0.116)	(0.114)	(0.197)	(0.110)	(0.108)	(0.186)
Male	13.45***			12.60***		
	(2.158)			(2.039)		
Islam	0.432***	0.136	0.751***	0.405***	0.129	0.702***
	(0.122)	(0.0982)	(0.239)	(0.115)	(0.0935)	(0.225)
# of Years of Education	0.170***	0.118***	0.231***	0.166***	0.118***	0.224***
	(0.0107)	(0.00868)	(0.0211)	(0.0101)	(0.00827)	(0.0199)
Constant	-6.825***	4.673***	-3.977	-6.668***	4.072***	-3.955
	(1.771)	(1.010)	(2.566)	(1.673)	(0.961)	(2.420)
Observations	11,034	6,299	4,735	11,034	6,299	4,735
R-squared	0.203	0.102	0.146	0.207	0.106	0.148

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 17: Entry on the Job Market and Height: Any Correlation?

VARIABLES	(1)	(2)	(3)
	Have you ever Worked?		
Height	0.000448	-0.000297	0.000862
	(0.000567)	(0.000467)	(0.000998)
Urban	-0.0882***	-0.0218***	-0.147***
	(0.00667)	(0.00573)	(0.0113)
Age	0.0445***	0.0225***	0.0580***
	(0.00233)	(0.00204)	(0.00391)
Age Squared	-0.000525***	-0.000305***	-0.000665***
	(2.67e-05)	(2.32e-05)	(4.49e-05)
Married	-0.0520***	0.139***	-0.140***
	(0.00871)	(0.00888)	(0.0136)
Male	0.324***		
	(0.00885)		
Islam	-0.00953	0.0231***	-0.0436***
	(0.00963)	(0.00832)	(0.0162)
# of Years of Education	-0.000241	-0.00272***	0.00351**
	(0.000852)	(0.000742)	(0.00144)
Constant	-0.234**	0.507***	-0.494***
	(0.0973)	(0.0863)	(0.168)
Observations	15,069	7,021	8,048
R-squared	0.179	0.099	0.052

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 18: Height and Income per Occupation

	Income								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Agriculture & co	Mining	Manufacturing	Electricity & co	Construction	Wholesale & co	Transportation & co	Finance & co	Social services
Height	0.0282**	0.0843	0.00220	0.0709*	0.0203	0.0233	0.0138	-0.0214	0.0118
	(0.0144)	(0.0713)	(0.0144)	(0.0353)	(0.0169)	(0.0152)	(0.0107)	(0.0174)	(0.00939)
Urban	1.375***	0.661	0.936***	1.045***	0.202	-0.0677	0.288**	0.409	0.300***
	(0.232)	(1.020)	(0.189)	(0.360)	(0.190)	(0.184)	(0.132)	(0.269)	(0.109)
Age	0.421***	-0.293	-0.0127	0.185	0.0667	0.255***	0.0657	0.0731	0.251***
	(0.0589)	(0.343)	(0.0700)	(0.161)	(0.0773)	(0.0684)	(0.0553)	(0.120)	(0.0409)
Age Squared	-0.00441***	0.00388	0.000246	-0.00211	-0.000851	-0.00289***	-0.000646	-0.000629	-0.00263***
	(0.000660)	(0.00412)	(0.000835)	(0.00197)	(0.000920)	(0.000786)	(0.000664)	(0.00155)	(0.000478)
Married	-1.721***	-0.832	-0.259	-0.523	-0.374	-0.839***	0.707***	0.169	0.176
	(0.242)	(1.425)	(0.241)	(0.459)	(0.329)	(0.243)	(0.235)	(0.290)	(0.144)
Male	6.264***	3.993***	1.954***	-0.357	3.383***	1.884***	1.540***	0.248	0.583***
	(0.229)	(1.401)	(0.242)	(0.511)	(0.377)	(0.246)	(0.430)	(0.281)	(0.144)
Islam	0.395*		1.314***	-0.0547	-0.457	-0.0176	-0.0172	-0.265	0.0946
	(0.231)		(0.331)	(0.485)	(0.332)	(0.261)	(0.206)	(0.273)	(0.148)
# of Years of Education	0.0313	0.0302	0.104***	0.0807*	0.128***	0.0195	0.0710***	0.144***	0.165***
	(0.0248)	(0.157)	(0.0262)	(0.0443)	(0.0279)	(0.0268)	(0.0189)	(0.0334)	(0.0120)
Islam = o,		-							
Constant	-5.606**	2.792	10.16***	-0.615	6.453**	4.368	8.307***	15.02***	4.791***
	(2.490)	(11.47)	(2.600)	(5.039)	(3.010)	(2.704)	(1.945)	(3.552)	(1.662)
Observations	3,687	56	1,364	34	476	2,324	441	82	2,234
R-squared	0.322	0.410	0.155	0.467	0.231	0.062	0.119	0.323	0.136

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 19: Height and Income per Occupation

	Income (Deflated to 2010 values)								
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Agriculture & co	Mining	Manufacturing	Electricity & co	Construction	Wholesale & co	Transportation & co	Finance & co	Social services
Height	0.0273**	0.0798	0.00274	0.0709*	0.0204	0.0224	0.0141	-0.0214	0.0119
	(0.0135)	(0.0673)	(0.0137)	(0.0353)	(0.0161)	(0.0144)	(0.0103)	(0.0174)	(0.00895)
Urban	1.308***	0.641	0.904***	1.045***	0.205	-0.0498	0.275**	0.409	0.284***
	(0.219)	(0.963)	(0.179)	(0.360)	(0.181)	(0.174)	(0.128)	(0.269)	(0.104)
Age	0.399***	-0.275	-0.00825	0.185	0.0668	0.246***	0.0653	0.0731	0.246***
	(0.0555)	(0.324)	(0.0663)	(0.161)	(0.0738)	(0.0648)	(0.0536)	(0.120)	(0.0390)
Age Squared	-0.00419***	0.00366	0.000189	-0.00211	-0.000849	-0.00279***	-0.000641	-0.000629	-0.00257***
	(0.000621)	(0.00389)	(0.000791)	(0.00197)	(0.000878)	(0.000744)	(0.000643)	(0.00155)	(0.000456)
Married	-1.607***	-0.797	-0.240	-0.523	-0.333	-0.787***	0.693***	0.169	0.175
	(0.228)	(1.345)	(0.228)	(0.459)	(0.314)	(0.230)	(0.227)	(0.290)	(0.137)
Male	5.918***	3.807***	1.878***	-0.357	3.203***	1.812***	1.463***	0.248	0.567***
	(0.216)	(1.323)	(0.229)	(0.511)	(0.360)	(0.233)	(0.416)	(0.281)	(0.137)
Islam	0.373*		1.241***	-0.0547	-0.442	-0.0262	-0.0113	-0.265	0.0881
	(0.217)		(0.314)	(0.485)	(0.317)	(0.247)	(0.199)	(0.273)	(0.141)
# of Years of Education	0.0332	0.0376	0.103***	0.0807*	0.125***	0.0207	0.0718***	0.144***	0.164***
	(0.0234)	(0.148)	(0.0248)	(0.0443)	(0.0267)	(0.0254)	(0.0183)	(0.0334)	(0.0114)
Islam = o,		-							
Constant	-5.521**	2.482	9.338***	-1.436	5.752**	3.913	7.528***	14.20***	4.149***
	(2.345)	(10.83)	(2.463)	(5.039)	(2.875)	(2.560)	(1.883)	(3.552)	(1.583)
Observations	3,687	56	1,364	34	476	2,324	441	82	2,234
R-squared	0.325	0.417	0.161	0.467	0.232	0.064	0.122	0.323	0.144

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 20: Income and Height: White vs Blue Collar

VARIABLES	Income		Income (Deflated to 2010 values)	
	(1)	(2)	(3)	(4)
	Blue Collar	White Collar	Blue Collar	White Collar
Height	0.0291***	0.0111	0.0281***	0.0111
	(0.00850)	(0.00909)	(0.00802)	(0.00866)
Urban	1.639***	0.317***	1.568***	0.301***
	(0.104)	(0.106)	(0.0986)	(0.101)
Age	0.279***	0.241***	0.267***	0.236***
	(0.0366)	(0.0397)	(0.0346)	(0.0379)
Age Squared	-0.00312***	-0.00253***	-0.00299***	-0.00247***
	(0.000419)	(0.000466)	(0.000396)	(0.000444)
Married	-1.096***	0.187	-1.024***	0.185
	(0.143)	(0.139)	(0.135)	(0.133)
Male	3.521***	0.565***	3.339***	0.550***
	(0.136)	(0.139)	(0.129)	(0.133)
Islam	0.504***	0.0773	0.474***	0.0711
	(0.149)	(0.143)	(0.141)	(0.136)
# of Years of Education	0.0898***	0.167***	0.0889***	0.165***
	(0.0146)	(0.0117)	(0.0138)	(0.0111)
Constant	-0.531	5.146***	-0.752	4.498***
	(1.485)	(1.610)	(1.402)	(1.534)
Observations	8,382	2,316	8,382	2,316
R-squared	0.205	0.138	0.208	0.146

Standard errors in parentheses

*** p<0.01, ** p<0.05, * p<0.1

Table 21: Being a White Collar and Height: Any Association?

VARIABLES	(1) Being a White Collar
Height	0.00141**
	(0.000654)
Income	0.00972***
	(0.000886)
Urban	0.0831***
	(0.00794)
Age	0.00945***
	(0.00282)
Age Squared	-8.65e-05***
	(3.24e-05)
Married	-0.0263**
	(0.0108)
Male	-0.0688***
	(0.0106)
Islam	0.00945
	(0.0112)
# of Years of Education	0.0316***
	(0.000999)
Constant	-0.591***
	(0.114)
Observations	10,698
R-squared	0.161

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

Table 22: Income and Height by Type of Hirer

VARIABLES	Income			Income (Deflated to 2010 values)		
	(1)	(2)	(3)	(4)	(5)	(6)
	Self-Employed	Government Worker	Private Worker	Self-Employed	Government Worker	Private Worker
Height	0.0189***	0.0150**	0.0113**	0.0187***	0.0145**	0.0113**
	(0.00712)	(0.00741)	(0.00494)	(0.00678)	(0.00715)	(0.00474)
Urban	0.642***	0.100	0.465***	0.631***	0.0988	0.456***
	(0.0835)	(0.0829)	(0.0638)	(0.0794)	(0.0800)	(0.0613)
Age	0.160***	0.204***	0.0641***	0.157***	0.198***	0.0646***
	(0.0298)	(0.0416)	(0.0235)	(0.0284)	(0.0401)	(0.0226)
Age Squared	-0.00173***	-0.00217***	-0.000751***	-0.00170***	-0.00210***	-0.000758***
	(0.000335)	(0.000490)	(0.000280)	(0.000318)	(0.000473)	(0.000269)
Married	-0.132	0.0820	0.170**	-0.117	0.0913	0.170**
	(0.118)	(0.146)	(0.0799)	(0.113)	(0.141)	(0.0766)
Male	1.067***	0.170	0.668***	1.027***	0.169	0.655***
	(0.111)	(0.117)	(0.0832)	(0.106)	(0.113)	(0.0798)
Islam	0.202*	-0.00436	-0.115	0.193*	-0.000213	-0.116
	(0.114)	(0.108)	(0.103)	(0.108)	(0.104)	(0.0988)
# of Years of Education	0.0674***	0.126***	0.125***	0.0675***	0.124***	0.124***
	(0.0116)	(0.0127)	(0.00829)	(0.0110)	(0.0122)	(0.00796)
Constant	6.120***	6.842***	9.589***	5.439***	6.210***	8.788***
	(1.249)	(1.396)	(0.885)	(1.188)	(1.347)	(0.850)
Observations	5,094	948	3,550	5,094	948	3,550
R-squared	0.077	0.147	0.180	0.081	0.153	0.189

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

VARIABLES	Pooled OLS		Fixed Effects
	(1)	(2)	(3)
heightbo	0.123***	0.0238***	0.0757***
	(0.00428)	(0.00558)	(0.00601)
yearbo = 2014			23.66***
			(1.091)
Height × Year2014			-0.128***
			(0.00691)
Urban		1.215***	0.821***
		(0.0624)	(0.0550)
Age		0.424***	0.224***
		(0.0249)	(0.0222)
Age Squared		-0.00392***	-0.00248***
		(0.000284)	(0.000250)
Married		-0.410***	-0.215***
		(0.0939)	(0.0823)
Male		1.804***	1.767***
		(0.0860)	(0.0753)
Islam		0.350***	0.133
		(0.0933)	(0.0818)
# of Years of Education		0.224***	0.146***
		(0.00797)	(0.00709)
Constant	-4.967***	-3.456***	-6.728***
	(0.676)	(0.989)	(1.046)
Observations	13,210	12,795	12,795
R-squared	0.058	0.229	0.409

Standard errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1