Height differentiated Wage Premium in West Bengal, India: An Empirical Study

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Abstract

Recently literature focuses on health status and labour market outcomes highlighting the height premium or height differentiated wage earning in labour market. Body height and weight of a worker, normally, represents his/her health status which is the basis of efficiency of a worker and it determines his/her productivity too. Literature has considered height, weight, age, education and experience, etc. as wage determining factors. Literature suggests that taller earns more than short heighted labour. Now, question arises weather height differentiated wage is true for all jobs or sector specific jobs only. This study attempts to answer these questions. Using primary data of six different job sectors, this paper investigates the relationship between physical health status and wage earning in West Bengal, India. Primary observation shows that taller earns more compared to their counter parts. This paper provides evidence that height differentiates wage income is significant in hard job sectors while education differential wage earning in soft job sectors. Worker's height is statistically significant and positively affect on wage earning in hard working sector. Here, taller is the gainer in wage income earning and the estimated height premium is around 2% - 4%. However, backward or lower caste workers lose their wage income even in hard job sectors due to physical inefficiency that arises because of malnutrition or insufficient nutritional intake in the childhood.

Key Words: Height, Weight, Wage Earning, Wage Premium, Income, Short height, Taller, Reference Height, Labour's Productivity, Health Policy, India, Nutritional Intake, Wage Determining Factor, West Bengal.

***JEL** Classification*: C_2, J_{13}, J_{31}, J_{38}, J_{78}, I_{15}, Z_2

1. Introduction

Wage differentiation in labour market is directly associated with labour productivity. Productivity of a labour is related to his/her ability to work with existing technology. However, individual labour's working ability depends on his/her physical health condition for given other socio-economic factors. Excluding knowledge, labour productivity is associated with his/her physical health status which includes body height and weight. Height is considered as the proxy of health status. Recently, social science literatures (See, Strauss and Duncan (1998), Komlos (1998), Schultz (2002), Judge and Cable (2003), Komlos and Kriwy (2003), Persico et al. (2004), Jacobs and Tassenaar (2004), Judge and Cable (2004), Heineck (2004) and Dinda et al. (2006), Kim and Han 2015, Buchumuller 2014, Kinge 2015, Bozoyan et al. 2011, Euhan et al. 2015, etc.) address the relationship between labour productivity and labour's physical health status[1]. Literature also suggests that physical features of labours/workers are the crucial determining factors for their salary/wage earnings, *ceteris paribus*. Labour economics literature[2] explains wage earning differential in terms of age, sex, experience, education, and other factors including physical health status. Judge and Cable (2004) show that 72 inch tall person earns more than 65 inch tall person across job career of 30 years. Results of their analysis show that height may be related to objective performance, not to social esteem or subjective criteria. Height is more predictive than objective outcomes. Height is essential factor for specific job category (professional Basket Ball, Military, police, and other security force, etc). In certain jobs tall people may have better level of performance and career success (such as Salesman, Receptionist). It is true that tall persons are more attractive[3] and customer may view more positively.

Health status may be observable on adult body weight and height, which reflect nutritional intake during childhood. Physical growths of health indicators provide the proximity of

[1] Height, weight and attractiveness are in the central focus on physical attributes of labour/workers and several studies examine these attributes for their wage differentiations. Truly, physical appearance matters for getting jobs and literature suggests a possible relationship between income and quality of health (Strauss and Duncan 1998). Significantly height is positively associated with success at workplace. Judge and Cable (2004) show the effect of physical height on workplace success. Shorter people overcompensate for their lack of stature with over aggressive and arrogant action. It is possible that aggression may mediate relation between height and success at workplace (Judge and Cable 2004).

[2] See, Judge and Cable (2004), Heineck (2004) and Dinda et al. (2006), Komlos (1998), Schultz (2001, 2002), Komlos and Kriwy (2003), Persico et al. (2004), Jacobs and Tassenaar (2004), Thomas and Strauss (1997), Steckel (1995), Strauss and Duncan (1998), Cecilia 2007, Kim and Han 2015, Buchumuller 2014, Kinge 2015, Bozoyan et al. 2011, Euhan et al. 2015, etc.

[3] Hamermesh and Parker (2003) study the effects of attractiveness on earnings and show that workers of above average attractive looks earn more than average attractiveness. Possible reasons they have higher confidence and certain extra communication skills compare to average attractiveness.

standard of living of the family (Schultz 2001, Thomas and Strauss 1997, Steckel 1995). Parental choice and preference influence physical health, specifically height of their children. Height is the outcome of nutritional intakes in childhood, human ecology, living environment, and biological processes. Apart from genetic or biochemical factors, health related child care service and nutritional intake during childhood are crucial determinants of adult height (Schultz 2001, Cole 2003). Nutritional intake during childhood can be considered as latent indicator of adult height and lifetime health status. Tall man has the better health than short. Short height is the indicator of poor health. The socio-demographic determinants of body height of adults are strongly associated with age, education, childhood conditions. However, social factors explain only little association with body height and health (Lahelma and Rkhomen 1999).

Effects of weight on earnings and socioeconomic outcomes are well known and literature provides mixed results on the relationship between weight and wage earnings (Mitra 2001, and Cawley 2004). Controlling height, weight lowers wages for overweight especially white female (Cawley 2004, Sabia et al. 2011). However, labour wage is also a function of height, age, and education. Height is a cumulative measure that reflecting both investments in nutrition and epidemiology condition in childhood. Body Mass Index (BMI) is a composition of human body weight and height. BMI is correlated with body capacity and job performance or/and income earning (Cecilia 2007, Kim and Han 2015, Buchumuller 2014, Kinge 2015, Bozoyan et al. 2011, Euhan et al. 2015, etc.).

The positive relationship between height and earnings, an increases height 10 cm is associated with an increase in hourly wage. Recently, several studies (Komlos 1998, Schultz 2002, Judge and Cable 2003, Komlos and Kriwy 2003, Persico et al. 2004, Jacobs and Tassenaar 2004, Heineck 2004, and Dinda et al. 2006) examine the effects of height on socioeconomic status and wage earnings. Heineck (2004) provides a comparative study of East and West Germany and shows the relationship between body height and earnings of German workers. Shorter male workers earn 4% less than male worker of average height while taller earns 3% more. There is earning premium around 1.5% for an increment of 1 inch height which corresponds to 4% earnings differential for standard deviation change.

Dinda et al. (2006) investigate the health condition of coal miners in India and their earning. Result shows a positively correlation between height and income considering anthropometric indicators. Malnutrition of coalminers in India might be cause of low productivity and low wage income. Poor health is unable to provide required energy for performing mining activities. From the above said findings we hypothesize that taller workers earn more wage

compared to their counter parts. Truly, physical labour is associated with health status which is reflected in height of a worker. So, height determines wage differentials in labour market. Now, question arises weather height differentiated wage is true for all jobs or sector specific jobs only. This study attempts to answer these questions. For depth understanding we divide our data into two groups focusing on nature of labour activity in job sectors. Mental and physical labour intensive required jobs are term, here, as soft and hard job sectors, respectively. This paper re-examines height differentiated wage income hypothesis and also investigates the job specific height premium focusing on hard and soft job sectors in developing economy like India. From primary survey this study re-ensures the job specific height premium in India.

This paper is organised as follows: Next Section 2 describes data and methodology. Section 3 provides empirical results and analyses the findings, and finally, paper concludes.

2. Data and Methodology

This study is based on primary data that has been collected from field survey using predefined questionnaire in West Bengal, India. Individual worker reports his/her socio-economic status as per our questionnaire. However, the measurement tape and weight machine are used to measure individual's height (in centimetre) and weight (in kilogram) during survey time (May – July 2016), respectively. In this study, height[4] (cm) and weight (kg) are objectively measured data, while information of other variables are reported data. The paper uses mainly primary data in public, private, self-employed in informal sectors, bricks field worker, casual daily labour and coal mining workers. This study mainly collects sample[5] that covers Salanpur Coal mining area near Asansol in Burdwan district, the Hooghly-Chinsurah area in Hooghly district and Ranaghat area in Nadia district. Coal Mining, Casual daily labour and Bricks field jobs require physical labour only and these jobs are considered in this study as *hard jobs*. Public, private and self-employed in informal sectors are termed as *soft jobs*, which require mental labour more than physical labour. Total sample is 234 and whole sample is divided into two parts: *hard working job* and *soft working job* sectors contain 92 and 142 sample, respectively. From our perception we predict that physical labour is required more in hard jobs than soft jobs. We examine its validity following a systematic study with proper statistical tools.

[4] Height and weight data are not reported data, it is free from subjective biased.

[5] Data samples are collected from highly concentration of economic activities such as Asansol mining area which belongs to the North-Western part of Burdwan district, Hooghly-Chinsurah industrial area of the Hooghly River basin of Hooghly district (Western side of the Hooghly River) and Ranaghat agro based semi-urban market area of Nadia (Eastern side of the Hooghly River) districts of West Bengal.

This paper investigates the height premium in India and re-examine the relationship between worker's body height and wage earning controlling other factors. Here, the basic wage determining model is the Mincer type wage determining equation which considers age, height, weight, education, experience and other control variables. This study also focuses on the Mincer type wage determining equation using simple ordinary least square (OLS) econometrics technique. The wage determining equation (with major control variables such as age, weight, education, and experiences) is:

$$\ln(y_i) = \alpha + \beta_1 age_i + \beta_2 age^2{}_i + \beta_3 height_i + \beta_4 weight_i + \beta_5 edu_i + \beta_6 Exp_i + \beta_7 Z_i + \varepsilon_i \quad (1)$$

Where ln(y) is log value of annual wage income of a worker, Z is the vector of control variables, and ε is the disturbance term. In equation (1), this paper also observes the sign of the coefficient of β_3, which shows the change of relative income due to gain in one centimetre height. For analysis the impacts of short and tall height on the wage income we apply dummy variables for taller and shorter groups. Equation (2) analyses the impact of shorter (sht) and taller (tht) height group on income, controlling age, weight (*wt*) and other variables (Z):

$$\ln(y) = \alpha + \lambda tht + \eta sht + \beta age + \theta wt + \gamma Z + \varepsilon \quad (2)$$

Finally, this study examines the Segmented Piece (SP) wise linear regression using height as continuous variable within height sub-groups with other controlling variables.

3. Results

3.1 Primary observations

Table 1 describes the summary statistics of major variables (such as Age, Height, Weight, Education and Income) for all jobs, hard and soft job sectors. Basic summary statistics (Table 1) suggest that average annual income in soft job (Rs. 450563) is higher than that of hard job (Rs. 267403). Mean values of most of the variables (Table 1) are higher in soft job than hard job sectors, except age. Average age in soft job is less than hard job. Mean height of soft and hard job workers are 164.09 cm and 160.2 cm, respectively. Average height of soft job worker is higher than that of hard job worker. More precisely, average height, education and income are maximum in soft job and minimum in hard job sectors. These basic primary observations re-assure the possible relationship between height and wage earning across sectors. Next, this study explores the said relation within sectors.

Table 1: Summary Statistics of Adult workers of West Bengal

All sector					
Variable	**No. of total sample**	**Mean**	**SD**	**Max**	**Min**
Age	234	39.43	11.25	67	18

Height	234	162.55	9.43	188	135
Weight	234	64.21	10.90	100	34
Education	234	4.43	2.13	7	1
Income	234	378551.6	307848.3	2100000	48000
Hard Working Sector					
Age	92	39.81	12.38	60	18
Height	92	160.2	10.84	188	135
Weight	92	62.8	12.06	94	40
Education	92	2.837	1.66	6	1
Income	92	267403	235319.5	1020000	52925
Soft Working Sector					
Age	142	39.18	10.5	67	22
Height	142	164.088	8.0786	186	147.5
Weight	142	65.134	10.019	100	34
Education	142	5.47	1.73	7	1
Income	142	450563.4	328001.2	2100000	48000

From the collected field survey data this paper finds mean (μ) and standard deviation (SD or σ) of each variable which are given in summary statistics (Table 1). Height class is formulated using mean and SD of height from Table 1. This paper initially formulates three height classes – shorter, average (or reference) and taller. Median height class is taken as reference group, which is defined as $Mean \pm SD$, (i.e., $\mu \pm \sigma$). Shorter and taller classes are defined as height less than $(Mean - SD)$, (i.e., $\mu - \sigma$) and greater than $(Mean + SD)$, (i.e., $\mu + \sigma$), respectively. Table 2 provides average annual income of workers as per above said defined height classes for hard and soft job, and combined all sectors. Table 2 provides the distribution of income as per defined height class ($Mean \pm SD$). The Reference height group of all (combine sectors) is (153.12 -171.98), people who are less than 153.12 cm belongs to shorter height class and those who are above 171.98 cm representing taller class. As per our defined height class shorter, median (average) and taller height class have 40, 157 and 37 observations, respectively. However, majority of workers (157 observations) belongs to the reference (median /average) height group. Now, average annual income (in Rs.) of shorter, reference and taller group are 182179, 384745 and 564565, respectively. These mean income differences are statistically significant (*t test*). Comparatively shorter worker earns much less income than reference and taller groups. Taller worker earns more than reference or their counter parts. Now, we divide our sample 234 into two parts – 92 hard and 142 soft workers, and repeat the said exercise.

Disaggregating combined data into two subsets – hard job and soft job sectors. Again, reference class of hard and soft job is defined using the formula of $Mean \pm SD$. Now, we identify the reference classes of hard and soft job as 149.37 - 171.03, and 156.01 - 172.15,

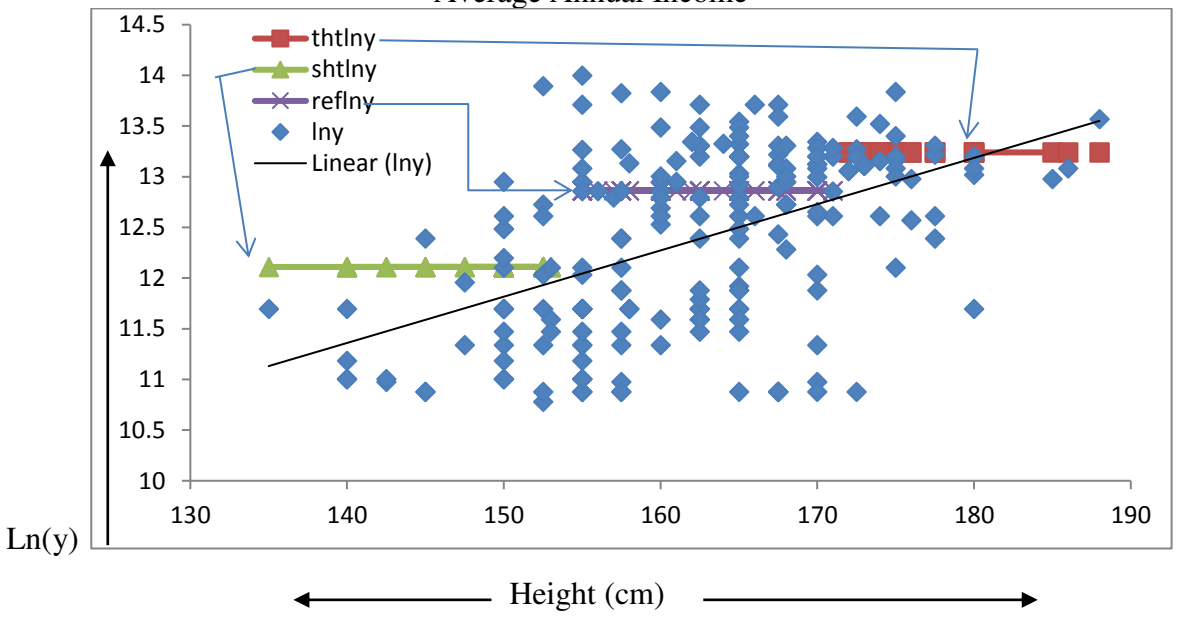
respectively. Second and third column of table 2 display the primary observations for hard and soft job sectors. Average annual income of taller height class of both (hard and soft sectors) is higher than that of reference and short height class. So, within each sector taller earns more compared to average and short heighted workers (Table 2). Table 2 shows the evidence that taller worker earns more and shorter earns less in both hard and soft jobs, and also in combined all jobs. This study re-establishes the height premium.

Table 2: Average Annual Income (Rs.) of workers by height

Height class	**All**	**Hard Job**	**Soft Job**
Taller (> Reference group)	564565 [37]	512066.07 [14]	596521.73 [23]
(Average) Reference group	***384745*** [157]	***248362.12*** [66]	***446565.21*** [92]
Shorter (< Reference group)	182179.37 [40]	86687.5 [12]	339851.85 [27]

Note: Average or Reference height class range is defined as *Mean* $\pm$ *SD*, i.e., $\mu \pm \sigma$. Reference height classes in All, Hard and Soft working sectors are 153.12 - 171.98, 149.37 - 171.03, and 156.01 - 172.15, respectively. Figures in third bracket are number of observations.

Fig 1: Scatter diagram of height and log of annual income, and height class-wise log of Average Annual Income



Height premium is also clearly visible in the scatter diagram (Fig 1). Horizontal and vertical axes represent height (cm) and log of wage income (lny), respectively. Fig 1 displays the scatter diagram of height, annual income, and also average annual income of each height class. Fig 1 shows a direct relationship between worker's height and his/her wage income. However, average annual income of each height class is parallel to height axis. Average income line of short height is at the bottom and that of taller is at the top (Fig 1). Average

income line of reference height group is the middle line (between top and bottom lines. Primary findings suggest that short heighted worker earns the least and the taller earns the maximum. Taller worker's income earning is more than the reference and short height groups (their counter parts). From Fig 1 it is also clear that average income of short heighted worker is less than that of reference (median) group worker, which is also less than that of taller worker. So, income earning of a worker has a direct relationship with his/her body height. These primary results support our earlier findings (Dinda et al. 2006) and literature (Komlos and Kriwy (2003), Persico et al. (2004), Judge and Cable (2004), Heineck (2004), Kim and Han 2015, Buchumuller 2014, Kinge 2015, Bozoyan et al. 2011, etc.).

3.2 Analysis of Results

Income follows a log-normal distribution. Considering log income as a dependent variable this paper shows the impact of height on income, controlling other variables. Equation (1) and equation (2) generate several models restricting possible explanatory variables. Model 1 considers wage determining basic features of a productive labour (height, weight and age) without education. Models are upgraded with addition of new variables. Education and experiences are added in Model 2 and Model 3, respectively. Finally, Model 4 and Model 5 are the Mincer type wage determining equation considering square of age and/or square of experience (that captures the law of diminishing return of age and/or experience). This study investigates all these models for hard and soft jobs as mentioned in earlier section.

Table 3 provides the results of height class-dummy on wage earning of workers of hard and soft job sectors. Table 3 shows that taller class-dummy variable is statistically significant in hard job sectors while it is insignificant in soft job sectors. So, our primary findings suggest that taller workers of hard job sectors earn significantly more than their counter parts. Education is statistically significant only in soft job sectors, not in hard job sectors (Table 3). Experience and caste are positive and significant in hard job sectors only. It should be noted that our order of caste is general to lower caste[6]. So, significantly positive caste variable means that wage earning of workers of lower caste rises compare to general caste in hard job sectors only. From Table 3, it is also clear that lower caste taller workers earn more compare to their counter parts.

Table 3: Results of Height Dummy on Wage Earning of Workers of Hard and Soft Job Sectors

	Hard Jobs				**Soft Jobs**			
Variable	M1	M2	M3	M4	M1	M2	M3	M4
Age	0.036*** (5.46)	0.036*** (5.45)	0.0202** (2.10)	0.017* (1.82)	-0.007 (-1.22)	0.0076* (1.65)	0.00115 (1.36)	0.01147 (1.36)

[6] Here, caste is categorical variable having Gen =0, OBC=1, SC=2, ST=3.

Taller	**0.471** (2.04)**	**0.4278* (1.83)**	**0.454** (1.98)**	**0.552** (2.47)**	0.254 (1.38)	0.167 (1.24)	0.1817 (1.32)	0.182 (1.31)
Short	-0.3478* (-1.73)	-0.3 (-1.46)	-0.157 (-0.74)	-0.0378 (-0.18)	-0.37 (-1.62)	-0.129 (-0.76)	-0.154 (-0.87)	-0.1545 (-0.87)
Weight	0.0158* (1.77)	0.0137 (1.49)	0.0116 (1.28)	0.0126 (1.45)	0.0097 (1.32)	0.0059 (1.08)	0.005 (0.91)	0.005 (0.89)
Edu	-	0.0534 (1.05)	0.0449 (0.87)	0.0934* (1.77)	**-**	**0.307*** (10.86)**	**0.2996*** (9.56)**	**0.2999*** (9.29)**
Exp	-	-	0.0266** (2.15)	0.036*** (2.90)	-	-	-0.00546 (-0.55)	-0.00545 (-0.55)
Caste	-	-	-	0.196*** (2.76)	-	-	-	0.0018 (0.03)
Constant	9.672*** (17.72)	9.645*** (17.67)	10.032*** (17.78)	9.564*** (16.8)	12.405*** (23.14)	10.382*** (23.83)	10.397*** (23.75)	10.397*** (23.61)
R^2	0.5210	0.5271	0.5515	0.5888	0.0972	0.5164	0.5174	0.5174
Adj.R^2	0.4990	0.4996	0.5198	0.5545	0.0708	0.4986	0.4960	0.4922
RMS	0.6908	0.6904	0.6763	0.6514	0.7386	0.5426	0.54397	0.54599
N	92	92	92	92	142	142	142	142

Note: Figures in parentheses are t-values. '***', '**' and '*' denote statistically significant level at 1%, 5% and 10%, respectively.

Table 4 provides the Mincer Type model estimated results of height class dummy variables. Again taller is statistically significant and positive in hard and combined all job sectors. Education is significant in all jobs while experience has mixed results (Table 4) compared to the earlier results. Table 4 shows the significant sex variable. Sex is statistically significant and negative only in soft job sectors. Female workers earn less than male. Caste is again significant in hard job and combined all job sectors, not in soft job sectors.

Table 4: Results of Height dummies in Mincer Type Model for All, Hard and Soft Jobs

Variable	All Jobs	Hard Jobs	Soft Jobs
Taller	0.3547*** (2.98)	0.6468*** (3.0)	0.18004 (1.46)
Reference Class	*Reference Class*	*Reference Class*	*Reference Class*
Shorter	-0.12 (-0.85)	-0.087 (-0.38)	-0.055 (-0.34)
Age	0.0107 (0.3)	-0.0149 (-0.3)	0.0124 (0.24)
Age^2	0.00008 (0.18)	0.00043 (0.68)	-0.00007 (-0.12)
Education	0.2798*** (11.34)	0.1098** (2.04)	0.3257*** (10.25)
Experience	0.0526*** (2.64)	0.0549* (1.81)	0.0495* (1.77)
$Experience^2$	-0.0014*** (-2.82)	-0.00057 (-0.68)	-0.00146** (-2.27)
Sex	-0.0487 (-0.42)	-0.0904 (-0.47)	-0.2797** (-2.13)
Caste	0.1113** (2.27)	0.20494*** (2.76)	-0.00987 (-0.16)
Constant	10.2773*** (15.72)	10.747*** (11.65)	10.35*** (10.92)
R^2	0.5361	0.5832	0.5651
Adj R^2	0.5175	0.5375	0.5354
RMSE	0.63819	0.66374	0.52225

N	234	92	142

Note: Figures in parentheses are t-values. '***', '**' and '*' denote statistically significant level at 1%, 5% and 10%, respectively.

Now, we consider height as a continuous variable within each height-class segment. Table 5 displays the estimated results of Segmented Piece Wise Linear Regression. Taller is again statistically significant in combined all and hard job sectors. It suggests that wage income increases within taller height class. Interpretation of taller height class is different from earlier taller height class dummy variable. Estimated results of taller in Table 5 suggest that wage earning increases 2% to 3.7% extra for each additional one centimetre gain in height among taller class in combined all and hard job sectors. Here, taller worker receives at least 2% extra wage earning premium for additional one centimetre height gain. So, height premium is 2% to 3.7% in hard job sectors.

Table 5: Results of Segmented Piece Wise Linear Regression

Variable	All Jobs	Hard Jobs	Soft Jobs
Taller ht	0.002*** (2.97)	0.0037*** (3.01)	0.001 (1.44)
Reference Class	*Reference Class*	*Reference Class*	*Reference Class*
Shorter ht	-0.0008 (-0.83)	-0.0005 (-0.34)	-0.0004 (-0.34)
Age	0.0106 (0.30)	-0.15 (-0.3)	0.0124 (0.81)
Age2	0.00008 (0.19)	0.0004 (0.68)	-0.00007 (-0.12)
Edu	0.28*** (11.39)	0.1105** (2.06)	0.3258*** (10.26)
Exp	0.0528*** (2.65)	0.0558* (1.85)	0.0495* (1.77)
Exp2	-0.0014*** (-2.83)	-0.0006 (-0.71)	-0.0015** (-2.27)
Sex	-0.05004 (-0.43)	-0.095 (-0.5)	-0.28** (-2.13)
Caste	0.1116** (2.27)	0.2063*** (2.78)	-0.01 (-0.16)
Constant	10.28*** (15.72)	10.74*** (11.65)	10.35*** (10.92)
R^2	0.5360	0.5832	0.5649
Adj.R^2	0.5173	0.5374	0.5353
RMS	0.63383	0.66379	0.52234
N	234	92	142

Note: Figures in parentheses are t-values. '***', '**' and '*' denote statistically significant level at 1%, 5% and 10%, respectively.

For cross checking this height premium we also follow standard practices considering height as continuous variable and the Mincer model (see, Table 6 and Table 7). Table 6 shows the estimated results of effect of height on wage earning considering height (cm) as continuous variable. Height replaces height-group dummy variables in Table 6, which is the extension of

Table 3 considering height (cm) as a continuous variable in our desired model. However, height is again statistically significant in hard jobs, while education and (height*education) interaction variables are not much significant. Height, education and their interaction variable (height*education) are statistically significant in soft jobs. This finding suggests that education is most significant variable for soft jobs, and more specifically, educated tall worker gains extra wage/salary income. Again, caste is statistically significant in hard job sectors only.

Table 6: Results of Height (as a continuous variable) on Wage Earning of Workers of Hard and Soft Job Sectors

	Hard Jobs		**Soft Jobs**	
Variable	M5	M6	M5	M6
Age (year)	0.0218** (2.43)	0.02178** (2.43)	0.0136 (1.61)	0.0134 (1.59)
Height(cm)	*0.0212*** *(2.21)*	*0.01976*** *(2.03)*	*0.0163*** *(2.14)*	*0.006 (0.79)*
Weight (kg)	0.0086 (0.95)	0.0084 (0.92)	0.0018 (0.31)	0.00176 (0.30)
Edu	0.09087* (1.75)	-	**0.293*** (9.18)**	**-**
Exp	0.0275** (2.33)	0.027** (2.33)	-0.00638 (-0.66)	-0.0057 (-0.58)
Caste	0.16285** (2.37)	0.1658** (2.40)	0.00327 (0.05)	0.0036 (0.06)
*Ht*Edu*	-	*0.0006** *(1.79)*		*0.0018**** *(9.17)*
Constant	6.448*** (4.95)	6.681*** (5.04)	7.912*** (7.17)	9.505*** (8.38)
R^2	0.5828	0.5836	0.5252	0.5249
Adj.R^2	0.5534	0.5542	0.5041	0.5037
RMS	0.6522	0.65165	0.53958	0.53978
N	92	92	142	142

Note: Figures in parentheses are t-values. '***', '**' and '*' denote statistically significant level at 1%, 5% and 10%, respectively.

Table 7: Results of Mincer Type Model in All, Hard and Soft Job Sectors

Variables	**Combined All Jobs**		**Hard Jobs**		**Soft Jobs**	
	I	II	I	II	I	II
Age	0.05549 (1.84)	0.0554** (1.86)	-0.0176 (-0.38)	-0.0247 (-0.52)	0.0928** (2.52)	0.0835** (2.33)
Age^2	-0.0004 (-1.16)	-0.0004 (-1.16)	0.0005 (0.85)	0.0008 (1.29)	-0.001** (-2.17)	-0.0009** (-2.11)
Height (cm)	**0.0226*** (3.42)**	***0.0225**** *(3.49)*	**0.0237** (2.34)**	***0.029**** *(2.90)*	0.0122 (1.58)	*0.0105 (1.39)*
Weight (kg)	0.0044 (0.82)	0.005 (0.83)	0.009 (0.95)	0.01 (1.05)	0.0006 (0.10)	0.002 (0.36)
Edu	**0.2545*** (10.49)**	**0.2546*** (10.67)**	0.0925 (1.76)	0.096 (1.80)	**0.3083*** (9.64)**	**0.321*** (10.83)**
Exp	-0.00025 (-0.03)		0.0253** (2.07)		-0.00998 (-1.04)	
Sex	0.0695 (0.59)	0.0702 (0.61)	0.0944 (0.49)	0.1073 (0.55)	-0.22 (-1.61)	-0.202 (-1.49)
Caste	0.088 (1.84)	0.0888 (1.89)	0.1595** (2.29)	0.13 (1.88)	-0.017 (-0.28)	-0.012 (-0.19)

Constant	5.855*** (5.60)	5.862*** (5.73)	6.73*** (4.37)	5.984*** (3.92)	7.095*** (5.39)	7.38*** (5.7)
R^2	0.5416	0.5416	0.5873	0.5660	0.5527	0.5490
Adj. R^2	0.525	0.5275	0.5475	0.5298	0.5258	0.5255
RMS	0.63297	0.63157	0.65649	0.66922	0.52764	0.52782
N	234	234	92	92	142	142

Note: Figures in parentheses are t-values. '***', '**' and '*' denote statistically significant level at 1%, 5% and 10%, respectively.

Table 7 shows the Mincer Type Model estimated results of effect of height on wage earning for all, hard and soft job sectors. Following the Mincer Type Model Table 7 suggests that significant variables are age, height, and education for combined data. Estimated significant results are clear for hard and soft job sectors. Our crucial variable is height which is statistically significant only in hard jobs, insignificant in soft job sectors. Estimated result of other important variable is education which is statistically significant in soft jobs not in hard job sectors. Height affects wage earning significantly in hard jobs while education in soft jobs. So, height and education determine wage income in hard and soft job sectors, respectively. Experience and caste variables are also significant in hard jobs while age is significant in soft jobs.

4. Conclusion

This paper investigates the impact of physical health status on wage earning in selected working sectors in West Bengal, India. Body height and weight represent individual's physical health status. Here, height is considered as a proxy of health status which reflects nutritional intake and child care services during childhood periods. Height is the outcome (or result) of investment before entering into the job market. Recent literature focuses on height premium or height differentiated wage income in labour market. However, question arises weather height differentiated wage is true for all jobs or sector specific jobs only. This study attempts to answer these questions. This study also re-examines the relationship between height and wage income using primary data. Data are collected from six different sectors such as Private, Public, Informal Self Employed, Casual Daily Labour, Bricks field workers, and Coal Mining sectors.

Primary results suggest that physical height has significantly positive effect on wage income earning. Dummy variable analysis shows that taller individual earns more wage income in combined all and hard job sectors. On the basis of empirical results this paper clearly provides the evidence that taller workers earn more compare to reference (average/median) height workers. This study suggests that education and height determine wage income in soft

and hard job sectors, respectively. Education significantly affects wage income while educated tall worker earns even more in soft job sectors. However, physical body height of a worker represents his/her physical efficiency and provides 2% to 3.7% premium in hard job sectors, *ceteris paribus*. Education is insignificant in hard job sectors. It is also noted that health status of backward caste workers is low and loose wage income in hard job sectors.

These findings suggest that gaining body height is good for raising individual's physical efficiency and productivity, thereby, (s)he gains in terms of wage income. This is also true for a nation. In this context, the government should redefine the national health policy and ensure nutritional intake care for children such that average national height might increase that would affect national income level and also ensure height premium in future.

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