“ACCESSIBILITY TO MINIMUM WAGE AND WAGE-INCOME DETERMINANTS: A STUDY OF THE RESIDENTIAL AND NON-RESIDENTIAL PRIVATE SECURITY GUARDS IN THE CITY OF AHMEDABAD”

Dr. Samir K Mahajan

Abstract:

Demand for security services has exploded both for residential and non-residential premises due to mounting urbanization, rapid industrialization, and expansion of trade and commerce activities in the country in recent years. This has created enormous opportunity for employment specially for the poor who otherwise may have the least possibility securing a job. The private security industry being abysmally informal, it is perceived that workers here are underpaid. As such the plight of the guards have not improved much in this sector. The city of Ahmedabad is one of the major consumers of private security services. Income being one of the prominent determinants of well-being, it would be interesting to look into the aspect of accessibility to prescribed minimum wage, and examine what determines wage of the private security guards in this city. More specifically, this paper endeavours to throw light on the probability of access to minimum wage by the guards at residential and non-residential premises in the city, and examine the various determinants affecting the income wage of the guards. Pertinent econometric models have been constructed for the purpose of the study. Result of data analysis shows that access to minimum wage is not universally entitled to the private security guards in the city of Ahmedabad. The study finds that the residential guards have less chance of having access to minimum wage than that of their non-residential counter in the city. However, both education and training have some positive bearing on the wage income of the guards.

Keywords: Private Security Industry, Guards, Income, Minimum Wage, Education, Training, Income Determinants

1. Introduction:

Private security service sector in India has emerged as a sunrise sector. There is exploding demand for security services especially manned-guarding both at residential and non-residential premises by industries and corporate sectors, and communities as well. Demand for safety and protection of assets is on the rise not only from the booming corporate sector such as: at office buildings, business/commercial establishments, industrial houses, public utilities, institutions and other locations but also from burgeoning middle classes residing at housing societies and residential apartments in urban centers across the country (FICCI 2005:3,5). All these forces have caused heavy boost in demand for private security services in recent years in the country.

Being labor-intensive, private security industry has created an enormous opportunity for employment and income specially for the poor who otherwise may have the least possibility securing a job. The industry is the second-largest employment generator in the

country(FICCI¹ 2015:3, FICCI 2018:2). However, this sector has been characterized by the predominance of informality specially manned-guarding(FICCI 2017:6-8, FICCI 2018: 5,13-19). This sector runs on low cost-operations which has resulted in extreme employee exploitation. It is perceived that workers here are underpaid(Upadhyaya 2011). The government prescribed minimum wage has not been universally entitled among the guards. As such the plight of the private security guards, who are the prominent constituent of this sector, have not improved much in this sector.

The city of Ahmedabad is one the major consumers of private security services in the country. Private security guards are recruited both at residential and non-residential premises. Income being one of the prominent determinants of well-being, this research delves into the wage-income aspect of private security guards at respective premises in the city. To be specific, this paper endeavours to throw light on the accessibility to government prescribed minimum wage by the respective group of guards in the city, and examine the various determinants affecting the income wage of the guards. Relevant econometric models have been constructed for the purpose of the study.

2. Methodology:

The income component of occupation is the most widely used indicator of economic status (Stewart, 2009). An individual's economic status can be studied in relation to the benefits provided by the regulatory framework. The main thrusts of this research paper have been on examining accessibility to government prescribed minimum wage by the guards, and factors determining their wage income. Monthly wage income received by the guards has been considered as a strategic variable in pursuit of this study. The study is confined to Ahmedabad city of the state of Gujarat. The research paper is built upon information collected from primary sources. The sample units are the private security guards at residential and non-residential premises in Ahmedabad city of the state of Gujarat. A structured interview schedule is used to collect the primary data.

2.1 The Regression Models

Following models have been constructed to test the empirical significance of the study.

2.1.1 Measuring Access to Minimum Wage

The probability of having access to minimum monthly wage (Rupees) is given the following regression model:

$$\begin{aligned} \text{Min\_Wage}_i \text{ dummy} &= \alpha_0 + \alpha_1 \text{ Resident\_Guard\_dummy} \\ &\quad + \alpha_2 \text{ Weekly\_Sevevn\_day\_work}_i \text{ dummy} \\ &+ \alpha_3 \text{ Weekly\_Min\_EightyFour\_Hrs\_work}_i \text{ dummy} \\ &\quad + u_i \end{aligned}$$

Here,

- Min_Wage_i dummy = 1, if guard receive government-declared minimum monthly wage
= 0, if guard does not receive government-declared minimum monthly wage
- Resident_Guard_dummy = 1, if guard works at the residential premise
= 0, if guard works at the non-residential premise

¹ Federation of Indian Chambers of Commerce and Industry

- Sevevn_day_work_i_dummy = 1, if guard works all seven days in a week
= 0, if the guard works less than seven days in a week
- Weekly_Min_EightyFour_Hrs_work_dummy = 1, if guard works at least eighty-four weekly
= 0, if guard works less than eighty-four hours weekly

$E(\text{Min\_Wage}_i \text{ dummy} \mid \text{Predictors})$ is the probability receiving minimum wage conditional upon the predictors.

Here, our primary interest of study is probability of receiving government-declared minimum wage by residential and non-residential premises respectively. Weekly seven days' work dummy and weekly minimum eighty-four hours work dummy are control variables that also affect the response variables.

2.1.2 Wage Income Function

The monthly wage income function is represented by the following regression equation.

$$\ln \text{Wage}_i = \beta_0 + \beta_1 \text{Years\_School}_i + \beta_2 \text{Experience}_i + \beta_3 \text{Age}_i + \beta_4 \text{Resident\_Guard\_dummy}_i + \beta_5 \text{Train}_i \text{ dummy}_i + \beta_6 \text{Migrant}_i \text{ dummy}_i + \beta_7 \text{Ex\_Armed\_Force}_i \text{ dummy}_i + u_i$$

Here,

- $\ln \text{Wage}_i$ is natural log of the monthly wage (Rupees) of a guard
- Years_School_i implies years of schooling of the guard
- Experience_i implies years of experience of a guard in security service
- Age_i is age of guard in years
- $\text{Resident\_Guard\_dummy}_i = 1$, if guard works at the residential premise
= 0, if guard works at the non-residential premise
- $\text{Train}_i \text{ dummy}_i = 1$, if guard receive any training
= 0, if guard does not receive any training
- $\text{Migrant}_i = 1$, if guard is a migrant
= 0, if guard is a native of Gujarat
- $\text{Ex-Armed\_Force}_i \text{ dummy}_i = 1$ if guard is a recruit from an ex-armed force²
= 0 if guard is a recruit from civilian

2.2 Sampling

The sample units from different parts of Ahmadabad city are selected through the convenience technique. The sample size is 131 private security guards out of which 69 respondents belong to residential premises and 62 respondents' hail from non-residential premises. All efforts would be made to make the sample a representative one. Data from each of these respondents have been collected by a separate data collector as per their convenience. The data collectors spread across different parts of Ahmedabad.

3. Results and Data Analysis:

3.1 Income-wise Distribution

² Ex-armed forces include people from ex-police, NCC, and others such personnel

The least and highest wage that has been received among the whole sample respondents is Rupees 4500, and Rupees 29000 respectively. The first quartile wage is Rupees 8000. The median wage is Rs. 9500, and 3rd quartile wage is Rs. 13000. Thus, 50 percent of the respondents have wage income less than equal to Rupees 9500. Around 85.5 percent of the

Table 1
Summary of Wage Income

Statistics	Minimum	1 st Quartile	Median	3 rd Quartile	Maximum
Amount (Rs)	4500	8000	9500	13000	29000

Chart 1
Distribution of Income Among Respondents

Note:

#8 respondents have not disclosed their wage income.

Rosner's Outlier Test has been performed to detect outliers. The test found that wage Rs 2900, Rs 25000 and Rs 240000 are outliers.

respondents have income less than equal to Rupees 15000. There are three outliers found in the distribution of income, these are wage incomes Rs 29000, Rs 25000 and Rs 240000 respectively [Refer Table 1, Chart 1].

3.2 Access to Minimum Wage Income

Minimum Wages Act, 1948 directs that minimum wage that must be paid to the skilled and unskilled workers in different scheduled employments across states, regions in India. Minimum wage varies from states to states, sectors to sectors and occupations to occupations, and are also revised from time to time. Monthly Minimum wage in Gujarat has been fixed at Rupees 8278 for unskilled, Rupees 8486 for semi-skilled, Rupees 8720 for skilled respectively

Table 2
Minimum Wage for Private Security Guards in Gujarat
with effect from 1st October 2019 to March 2020 in Zone-I

Category of Private Security Guards	Monthly Minimum Wage (Rupees)
Unskilled	8278

Semi-skilled	84 86
Skilled	8720

Source: Office of the labour Commissioner, Government of Gujarat & Labour.
<https://www.labourlawreporter.com/wp-content/uploads/2019/05/Gujarat-Minimum-Wages-1st-Oct-2019-to-31st-Mar-2020.pdf>

Note:

#Zone-1 comprises the area within the limits of the Municipal Corporation as constituted under the Bombay Provincial Municipal corporation Act, 1949 and the areas falling within a peripheral distance of 10 kilometres from the aforesaid limits. For private security guards in Zone-1, with effect from 1st October 2019 to March 2020. The duration 1st October 2019 to March 2020 is chosen in this study because collection of data conforms to this period. Further, Zone 1 covers AMC vis-à-vis Ahmedabad City which is the geographical area of the study. Since, the manpower drawn from poverty-ridden population are largely unskilled in private security industry, the minimum wage for unskilled private securityguards, which is Rupees 8278, and lowest among the minimum wages meant for different categories of private security guards, has been considered a benchmark minimum wage for the purpose of the study [Refer Table 2]

Probability of Having Access to Minimum Wage

Access to minimum wage has been has measured by the probability of having access to statutory minimum wage (i.e. Rupees 8278) by respective groups of private security guards. By norm, a worker is supposed to work maximum six days, and maximum forty-eight hours in a week. As private security industry is considered highly informal and exploitative in nature, minimum wage may be provided to a guard by the employer if he/she works seven days a week and if he/she performs minimum eighty-four work hours a week. In order to estimate the chance of receiving minimum wage by a guard, access to minimum wage dummy has been modeled as a function of residential guard dummy, weekly seven days work dummy, weekly minimum

Table 3
Access to Minimum wage (Rupees)

Explanatory Variables	Coefficients	Response Variable: Probability of having access to minimum wage
Constant (intercept)	α_0	0.90373*** (2e-16)
Residential guard dummy	α_1	-0.18026* (0.039) [1.214573]
Weekly seven days work dummy	α_2	-0.07962 (0.463) [1.340569]
Weekly minimum eighty-four hours work dummy	α_3	-0.04261 (0.658) [1.503387]
Adjusted R-squared Value		0.04582 (0.03543)
F-statistic		2.953 on 3 and 119 DF
Observations		123

Note:

#Figure in bracket indicate p-value

Significance codes: 0 '***', 0.001 '**', 0.01 '*', 0.05 '.', 0.1 ' ', 1

#Figure in box bracket [ ] indicate variance inflated factor .

Breusch-Pagan test

Studentized Breusch-Pagan test

BP = 10.119, df = 3, p-value = 0.01758

Durbin-Watson Test

lag Autocorrelation D-W Statistic p-value

1 0.1247214 1.711746 0.108

Alternative hypothesis: $\rho \neq 0$

eighty-four hours work dummy. Our primary interest is to examine the chance of receiving minimum wage by the respective groups of security guards. Weekly seven days work dummy, weekly minimum eighty-four hours work dummy are control variables in the model [Section 2.1.1].

The regression output shows that intercept α_0 is 0.90373, and is statistically significant at p-value less than 0.01 level significance. The coefficient of guard dummy (α_1) is -0.18026 which is also statistically significant at p-value less than 0.05 level significance. Coefficient of weekly seven days work dummy (α_2), weekly minimum eighty-four hours work dummy (α_3) are -0.07962 and -0.04261 respectively. These are not statistically significant [Refer Table 3].

Other things remaining the same, α_0 is the probability of receiving minimum wage by non-residential guards. Since intercept ($\alpha_0 = 0.90373$) is significantly different from zero, sample data provides sufficient evidence to suggest that chance of receiving minimum wage by a non-residential guard is 90.37 percent. Ceteris paribus, differential intercept coefficient α_1 is the difference in intercept between residential and non-residential guards with respect to the probability of receiving minimum wage [Refer Table 3]. α_1 being -0.18026, and significant, it rules out that probability of receiving minimum wage is same for both groups of guards. Chance of receiving minimum wage by a residential guard may be lesser by 18.02 percent from its non-residential counterpart. Around 27 percent residential guards may not receive government directed minimum wage in Ahmedabad city. The results show that access to minimum wage are not universal whether the guards work in residential premise or non-residential premises groups of guards in the city of Ahmedabad. However, the guards employed in non-residential sectors has a higher chance of receiving minimum wage than that of residential guards [Refer Table 3].

The estimated adjusted R^2 is 0.04582, and is significant at p-value less than 0.05 level of significance. The calculated F-statistics 2.953 on 3 and 119 DF is more than tabulated critical value 2.68081110 at 0.05 level of significance. Hence the regression model appears to be significant [Refer Table 3]. Relevant econometric tests have been performed on the regression model. The results show presence of heteroscedasticity. Linear probability model, in general, suffer from heteroscedasticity problem. The model however rules out presence of autocorrelation and any serious multicollinearity [Refer Table 3].

3.3 Wage Income Function

It would be interesting to see what determines wage income of the private security guards. Natural log of monthly wage income is constructed as function of years of schooling, years of

experience, age, residential guard dummy, migrant dummy, training dummy, ex-armed force dummy [Section 2.1.2]

The result shows that coefficient of year of schooling (β_1) is 0.015518 which is statistically significant at p-value less than 0.01 level of significance. This suggests years of schooling has a bearing on the monthly wage of the private security guards. However, the effect is minuscule. A one-year increase in schooling of a guard is expected to cause a 1.6 percent increase in his/her wage income. Coefficients of years of experience (β_2) and age (β_3) are 0.003774 and -0.002146 respectively. However, these coefficients are not statistically significant. These results imply that experiences and age are not expected to influence the monthly wage of the security guards. [Refer Table 4].

Coefficient of residential guard dummy (β_4) - 0.135672, and it is statistically significant with p-value less than 0.01 level of significance. Here β_4 refers to the difference in natural log of monthly wage between residential and non-residential security guards. Since β_4 is significant there is no sufficient evidence to suggest that wages earned by guards at residential and non-residential premises are not different. Further, since β_4 is negative, it implies that residential security guards are expected to receive lower wage than that of non-residential guards on an average [Refer Table 4].

Coefficient of training dummy (β_5) is 0.146001, and significant with p-value less than 0.01 level of significance. Thus, there will be difference in monthly wage of guards for guards receiving training, and for those non-receiving training. Skilled guards will have an edge over the unskilled as far as their wages are concerned [Refer Table 4].

Table 4
Wage Income Function

Explanatory Variables	Coefficients	Response Variable: Natural log of monthly wage income (Rupees)
Constant (intercept)	β_0	9.156416*** ($<2e-16$)
Years of schooling	β_1	0.015518* (0.0154) [1.121586]
Years of Experience	β_2	0.003774 (0.2897) [1.531754]
Age	β_3	-0.002146 (0.3572) [1.567558]
Residential guard dummy	β_4	-0.135672* (0.0121) [1.137786]
Training dummy	β_5	0.146001* (0.0100) [1.195264]
Migrant dummy	β_6	0.038450 (0.4842) [1.136177]
Ex-armed force dummy	β_7	-0.175165 (0.1066) [1.170800]
Adjusted R ²		0.1615 (0.0003447)
F-Statistics		4.247 on 7 and 111 DF
Observations		120

Note:

#8 Respondents did not disclose their income. 3 income observations are outliers, and hence are not incorporated in the model.

Figure in round bracket ( ) indicate p-value

Significance codes: 0 ‘***’, 0.001 ‘**’, 0.01 ‘*’, 0.05 ‘.’, 0.1 ‘ ’, 1

#Figure in box bracket [ ] indicate variance inflated factor (VIF) –used as an indicator of multicollinearity

Breusch-Pagan Test

studentized Breusch-Pagan test

BP = 6.4, df = 7, p-value = 0.4939

Durbin-Watson Test

lag Autocorrelation D-W Statistic p-value

1 0.1168126 1.748058 0.16

Alternative hypothesis: rho != 0

Coefficient of migrant dummy(β_6)and ex-armed force dummy (β_7)are 0.038450 and -0.175165 respectively, and both the coefficients are not statistically significant. The results indicate that wages are uniform across whether the guard is a migrant or a native of Gujarat. Migrants and natives are likely to be treated equally when wages are paid to them. Further, guards who were ex-personnel from armed forces are also likely to be paid at par with those who are civilian recruits [Refer Table 4].

The R-squared Value of the Model

The adjusted R-squared value is 0.1615 and significant at p-value less than 0.01 level of significance. The F-Statistic (which studies over all significance) is 4.247 on 7 and 111 DF, and is greater than the tabulated critical value 2.28045 at 0.001 level of significance. Hence nullhypothesis that ‘coefficients of all regressors are zero’ is rejected. Here R-squared value is low given the fact that the study is using cross section data. R-squared value is a measure of explanatory power and fit (**Kutner et al**). Here, R-square, even though small, is significantly different from zero (0) indicating that the regression model is statistically significant. Hence, though R-square is low, since it is significant, it is tenable for the given model [Refer Table 4].Heteroscedasticity, autocorrelation and multicollinearity tests have been performed on the regression model. Heteroscedasticity, autocorrelation and multicollinearity tests have been conducted on the regression model. No such problems have been traced in the model.

4. Conclusion

Access to minimum wage is not universal whether the guards work at the residential or non-residential premise in the city of Ahmedabad. However, the deprivation is more among residential guardswho are likely to fetch lower wage-income than the non-residential guards.Education attainment has a miniature influence on the wage of the guards. Experience, age have hardly any bearing on the wage income. Trained guards are likely to draw a higher monthly wage in the city. Age and experiences do not count as far as income is concerned. Wage discrimination in the line of natives or migrants is absent in private security service in the study area. Guards who were ex-personnel from armed forces including NCC are not given a preferential treatment. They are treated par with those guards who are civilian recruits in Ahmedabad city. Access to government prescribed income is one of the basic requirements of a formal industrial sector. Since all the guards does not have access to minimum wages as prescribed by the government of Gujarat, andexperiences does not have a

bearing on income, presence of largescale informality is not ruled out in the manned-guarding sector of private security services in the city of Ahmedabad.

Reference

FICCI: Federation of Indian Chambers of Commerce and Industries (2005). Discussion paper on PSAR (private security agencies regulation act) 2005 Retrieved January 2019 from: ficci.in/SEDocument/20263/Discussion-Paper-on-PSAR-Act-2005.pdf

------(2013). Private security services industry: Securing future growth. Retrieved January 2019 from ficci.in/spdocument/.../Private-security-services-industry-Securing-future-growth1.pdf

------(2015). Private security services in India. Retrieved January 2019 from ficci.in/spdocument/20966/FICCI-PwC-Report-on-Private-Security-Industry.pdf

------(2017) *Indian private security industry: Preparing for the next leap*. Retrieved January 2019 from ficci.in/spdocument/20966/FI CI-PwC-Report-on-Private-Security-Industry.pdf

------(2018) Private security industry: Job creation and skill development. Retrieved January 2019 from [ficci.in/spdocument/23012/Private %20Security %20Industry%20Report.pdf](http://ficci.in/spdocument/23012/Private%20Security%20Industry%20Report.pdf)

------(n.d.) *Private security industry in India*. Retrieved December 2019 from http://ficci.in/sector/91/Project_docs/PSi-profile.pdf

Government of Gujarat (2019). Minimum Wage for 01/10/2019 to 31/04/2020

Kutner, Michael H.; Nachtsheim, Christopher J. ; Neter, John Li and William(2005). *Applied Linear Statistical Models*. McGraw-Hill . Irwin . Fifth Edition.

Stewart, J.(2009): Economic status. MacArthur Research Network on Socioeconomic Status and Health. Retrieved February 2020 from <https://macses.ucsf.edu/research/socialenvron/economic.php>

Upadhyaya, Sanjay (2011). Plight and predicament of security guards engaged by private security agencies in India. *International Journal of management Science*, ISSN 0973-2101, Vol.7, No.1

Dr. Samir Mahajan
Assistant Professor (Economics)
Department of Mathematics and Humanities
Institute of Technology, Nirma University
Ahmedabad, Gujarat.