



Research Paper

## A Study on the Determinants of Income of Printing and Bookbinding Workers: An Evidence from Bhubaneswar City

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**ABSTRACT:** The study presents the determinants of income of workers in the printing and bookbinding business in the Bhubaneswar region using OLS regression analysis. This study covers only those workers who are engaged in the unorganized sector i.e., the overall workers in the business must be less than 10. Cross-sectional data of 60 printing and bookbinding workers are obtained from Bhubaneswar and the analysis using EViews software using OLS Method shows that there exist gender biases in the income of workers however there is no impact of caste on the income of workers. Similarly, age has no impact on the income of workers. Education and Experience positively impact the income of workers and it is found that workers engaged in Printing are getting more wages as compared to the Traditional Bookbinding Workers. The gender biases and lack of reward to education are still an ill observance that prevails in the unorganised sector so the government and NGOs should come up with training and social security policies for the workers to eliminate the inequality of income of workers due to these factors.

**KEYWORDS:** Determinants of income, Printing and Bookbinding, Gender Biases, Unorganised Sector.

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### I. INTRODUCTION

The evolution of bookbinding had started from 30th Century BCE when the humans developed their writing skills. When the scholar writes, it needed to be copied, compared and stored in order to retain the knowledge. Many countries evolved their own ways of Writing process, in our country the books are originally written on thin copper sheet called Tamrapatra then it was shifted to Burjapatra then shifted to Palm Leaves on which religious verses are inscribed. Though books are the primary source of gathering different sorts of knowledge at that time, still it was considered as a luxury because only rich can afford it. It was the China who invented the paper for writing purpose and it created the Bookbinding business which makes books cheaper and durable. After independence the increase of schools, colleges, factories gave a huge boost to book binding business as most of the works are done manually until globalization in 1991. In many countries the bookbinding business has adopted the present-day technological advancement to produce books through machineries. This change in bookbinding industry is much needed for its productivity and changing marketplace, however this leads to massive unemployment not only in its core industry but also the related industries like newspaper, periodicals, greetings cards.

### II. RELEVANCE OF THE STUDY

In India the unorganized sector employees more than 80% of workers and 50% of total GDP. Bookbinding business in India is mostly understood as an unorganized sector as it was still driven by labor force. This declining industry can be seen mostly in Kolkata and Odisha where many bookbinding businesses are functioning with effectiveness. It is predicted that by the end of 2021 the Book business in India can touch around 800 billion with a compound annual growth rate of 19.3%, making it the sixth largest in the world and second largest as English books publishing country. With such an enormous potential highlighted the book business should consider efficiency as it faces a lot of competition from E-Book industry. The efficiency can be achieved by employee satisfaction and employees can be satisfied by adequate income but this can be justified if we

consider the factors affecting the income of workers. There should not be Gender and caste-based biasness, the educated and experience should be properly rewarded with adequate remuneration.

### III. LITERATURE REVIEW

**Zogli et al. (2019)** tried to investigate the determinants of income earned in two informal slum economies in Ghana. For the study, they selected the factors like sector, education, gender, networks, size of labour, age of business and locus of control as an independent variable and average daily income as a dependent variable. They Collected the data through a questionnaire and using the OLS regression method, found that the main determinant of average daily income is labour size. The age of business & education helps to increase the daily income.

**Parajuli (2014)** in his paper analyses what determines whether a person works in the informal sector and also measures the degree of wage discrimination in formal and informal sectors in Nepal. For the study, he used the labour forced survey-based cross-sectional data produced by ILO in 2008. From the study, he found that the gender, geographical, educational status, marital status, age of the employee and ethnicity of the employee matter whether an individual works in formal and informal sectors. Also found that the wages derived from the informal sector are significantly lower than wages derived from the formal sector.

**Folawewo(2006)** in his paper tried to investigate the determinants of labour demand in the Nigerian urban informal sector. They selected two methodological approaches that are OLS & Instrumental Variable (IV) estimation technique and the Probit model to measure the labour demand in the informal sector. For the study, he collected employer and employee data set from a survey of informal enterprises. The OLS & IV technique shows that labour demand decision is based on firm's optimisation behaviour while the Probit model indicates that the labour demand decision is based on the employer's performance for discrimination. Both methods show that wage is not an imperative factor of labour demand.

**Deininger, Jin & Nagarajan(2013)** in their paper discusses various technique to decompose differences in wage rate and finds that gender is more important element than caste towards discrimination in informal labour market & it is more pronounced in the agricultural sectors than non-agricultural sectors. The author further pointed out that lack of asset and alternative opportunities are the key reason to take up wage labour further it has also revealed that discrimination gap is bigger in rich than in poor villages which reject the notion that discrimination will automatically be eliminated with higher level of economic development.

**Himanshu & Sujata (2017)** in their paper look into various trends in rural wage rate from 1983 to 2012 and made an attempt to analysis the factors that results into unprecedented rise in rural wage followed by the growth rate of agricultural productivity. The author after applying panel data regression finds that agricultural productivity, construction sector growth, urbanization and literacy are the major factors contributed to the rise in rural wages and finally the author suggested to take different aspect of rural economy for the purpose for conducting further study & also to improve literacy and develop skill-building so as to remove poverty through influencing wages.

**Adhikari (2011)** in his paper analyse the various determinants of the street vendors' income in Kathmandu for which the author made a case study and highlighted that education, investment & labour supply are affecting the income of the street vendors as the highly educated respondent were earning higher than illiterate whereas investment is positively correlated with income which shows that more investment leads to higher level of income and in the same manner it is also found that increase in labour supply also leads to increase in income level. finally, the author suggested to bring more legality into the business and to bring this business into the mainstream.

**Baiju & Samna(2005)** In their paper investigate on the wage differential in construction workers in Kerala. The authors used the multistage sampling and collects data from 200 workers. They deployed the Decomposition analysis for their study and found that there exists wage differential in the construction sector worker. The authors suggest the wage differential is because the working hours, age and the category of workers particularly between the local and immigrant labours.

### IV. RESEARCH GAP

Many research has been conducted on the determinants of income of workers in various unorganized sector across the globe. However, no research has been done on the determinants of income of workers in printing and bookbinding business particularly in Bhubaneswar region of Odisha. From the literature review it was found that there is population gap, evidence gap and empirical gap exist in this field of study because the population of Bhubaneswar region was not taken by any author for the study of determinants of income of printing and book binding business workers and the results of various study is also shows that there is contradictory evidence found as the impact of variables on the income of workers. However, there was no knowledge gap, theoretical gap and methodological gap found from the literature review.

## V. RESEARCH OBJECTIVE

The objective of this research paper is to find out the determinants of income of printing and bookbinding workers in Bhubaneswar region.

## VI. RESEARCH METHODOLOGY

Cross sectional quantitative data were collected from unorganized printing and bookbinding firm workers from Bhubaneswar region. The data were collected from the unorganized Bookbinding firms where the owner is an individual and the total number of workers are less than 10 (Unorganized Workers Social Security Act, 2008). Data were collected from 60 Workers including both Male and Female Workers. Female worker consists of 35 % of the total Sample Space. The convenience sampling methods are used for collecting data of samples. The Econometrics Software EViews is used analysis of the cross-sectional data. The followings are variables included in the study. We have used the Ordinary least square method to study. Multicollinearity test is used for the determination of correlation between the independent variables. The CUSUM test is used to check the stability of the model. The 6 independent variables such as Education, Age, Gender, Experience, Binder and Caste were taken for the study to access the impact on Wages of the worker which is Dependent Variable.

**Table 1. Variables and Definitions**

Variables	Definitions
Wages (Dependent Variable)	Average monthly Wages paid to the workers
Education	1 for passed in 10 <sup>th</sup> examination, otherwise 0
Age	Age of the workers in numbers
Gender (Dummy)	1 for Male, otherwise 0
Experience	Number of years working in the organization
Binder (Dummy)	1 for worker doing binding work, 0 for printing work
Caste (Dummy)	1 for general category, otherwise 0

## VII. ANALYSIS AND DISCUSSION OF RESULT

**Table 2. Multicollinearity Test**

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
AGE	709.6559	24.53187	1.647465
BINDER	262977.5	2.617372	1.570423
CASTE	177482.4	1.619249	1.025524
EDUCATION	279042.2	5.207364	1.301841
EXPERIENCE	804.3034	7.877352	2.059595
GENDER	393333.6	7.503337	1.750779
C	887008.5	22.07063	NA

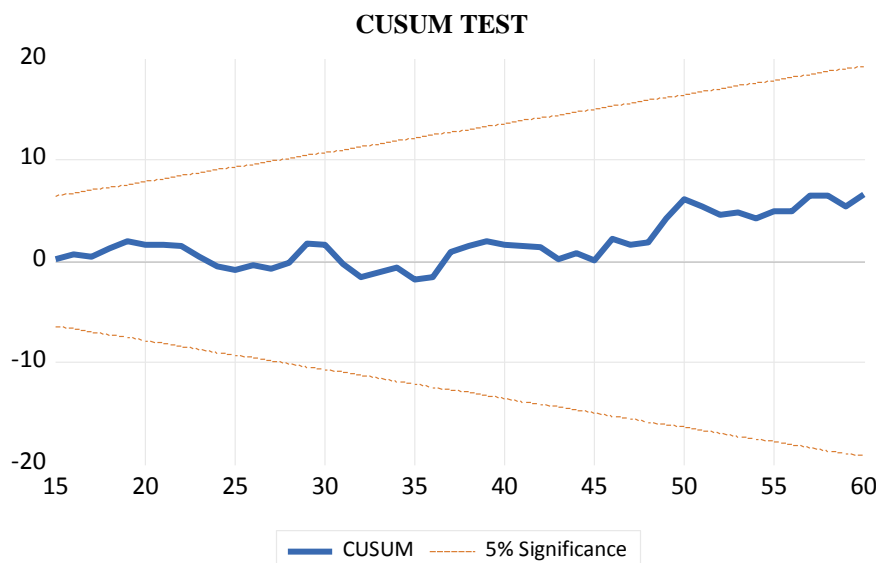
From table 2 the VIF test results suggests that there is no Multicollinearity between independent variables as the Centered VIF value of each variable is less than 10.

**Table 3–OLS Result**

Variable	Coefficient	Std. Error	t-Statistic	Prob.
GENDER	1498.006	614.4567	2.437937	0.0182
EDUCATION	1611.545	539.4239	2.987530	0.0043
BINDER	-1582.723	529.5356	-2.988889	0.0042
EXPERIENCE	65.93879	28.63315	2.302883	0.0252
CASTE	480.1843	440.4841	1.090129	0.2806
AGE	2.803634	22.86913	0.122595	0.9029
C	6503.210	1108.514	5.866604	0.0000
R-squared	0.661407	Mean dependent var	9650.000	
Adjusted R-squared	0.623075	S.D. dependent var	2612.389	
S.E. of regression	1603.855	Akaike info criterion	17.70749	
Sum squared resid	1.36E+08	Schwarz criterion	17.95183	
Log likelihood	-524.2246	Hannan-Quinn criter.	17.80306	
F-statistic	17.25500	Durbin-Watson stat	1.839999	
Prob(F-statistic)	0.000000			

The above analysis shows that the determinants such as Gender, Education, Binder, Experience are significantly affecting the Income of Workers of Printing Book Binding Business as the P value of such variables are less than 0.05. the Coefficient of binder suggest that the income of Binder is less than 1582 rupees as compare to the printing workers. This might be possible because of the technological knowledge possess by the printing workers. Caste is not significant factor which suggest there is no caste-based discrimination exists in the printing and book binding business. Age is also not significant because of Many Printing workers are earning more that experience binders. Education is a significant factor which suggest that there is reward given for the education possess by the workers. 10th pass out workers are earning 1611 more that the workers who are not passed 10<sup>th</sup> examination. However, there is gender-baseddiscrimination exist in the organizations in form of wages as gender is a significant factor and the male workers are earning nearly 1500 more than the female workers.F statistic suggests that together all the independent variables are affecting the Wages of workers in the printing and bookbinding business workers in Bhubaneswar city.

The R Square value of 66% suggests that the variation in income is 66% explain by above variables and 34% other variables. In social Science research R square value more than 50% is consider decent because social science research consist of human element and human element cannot be predicted accurately. Durbin Watson value of 1.83 suggest that there is no autocorrelation exists in the error term.



CUSUM means Cumulative sum of residuals, it suggests whether there exists structural break in the model or not. The above figure shows that the mean of the residuals is near to zero and the cumulative residuals from observation 1 to observation 60 are well under the 5% level of significance boundary so it can be concluded that there is no structural break in the model.

### **VIII. FINDINGS**

Gender, Education, Binder, Experience is significantly affecting the Income of Workers of Printing Book Binding Business. Income of Binder is less than 1582 rupees as compare to the printing workers. This might be possible because of the technological knowledge possess by the printing workers. Caste is not significant factor which suggest there is no caste-based discrimination exists in the printing and book binding business. Age is also not significant because of many printing workers are earning more than experience binders. Education is a significant factor which suggest that there is reward given for the education possess by the workers. 10th pass out workers are earning 1611 more than the workers who are not passed 10th examination. However, there is gender-based discrimination exist in the organizations in form of wages as gender is a significant factor and the male workers are earning nearly 1500 more than the female workers.

### **IX. CONCLUSION**

The Objective of this study is to identify the determinates of the income of printing and bookbinding workers of unorganized sector of Bhubaneswar region. It was found that Gender, Education, Experience are significant determinates of the income of workers but Age and Caste have no significant impact on the income but we cannot eliminate in considering them as the F statistics suggests that all the independent variable together are significantly affect the income of workers. The study reflects that unorganized sector is now giving reward to education and there is no caste-based income discrimination can be seen however, the gender-based income discrimination is still existing as the income of female workers are still lower than male workers, which can be eliminated by better policy making and training given to the Female workers. The study also throws light on the important of technological knowledge possession for better wages as the Printing workers are getting more wages than traditional bookbinding workers. The future study can be conducted with organized or formal sector printing and book binding workers.

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