Stitching Together Income and Living Standards: A Study of Garment Worker Wages and Expenses

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Abstract—Current inflation has made living in the country's upmarket area very expensive and specially cumbersome for lower incomed garment workers. In this situation, it has become difficult for garments workers to live on the current wage. This paper investigates the correlation between garment workers' wages and living expenses in Bangladesh. Employing a mixed-methods approach, we analyze quantitative data and qualitative insights to comprehend the challenges encountered by garment workers in maintaining satisfactory living standards amidst fluctuating incomes and escalating living costs. Our study illuminates the complexity of income distribution within the garment industry and its implications for workers' well-being. Moreover, how garments workers are coping with such situations and are getting away are also analyzed. This work supports the decision-making authority in regards to the pay of garment workers.

Index Terms—garments workers, wages, living expenses, Bangladesh, income distribution, expenditure distribution

I. Introduction

Bangladesh's garment industry stands as a cornerstone of the nation's economy, employing millions of workers and contributing significantly to export revenue. However, amidst this economic prosperity, the wages and expenditure patterns of garment workers remain a focal point of concern. Despite their pivotal role in driving the industry forward, many garment workers in Bangladesh struggle to afford basic necessities due to low wages and high living expenses.

This project was selected due to the critical importance of understanding the economic realities faced by garment workers in Bangladesh. Given the significant contribution of the garment industry to the country's economy and the large number of individuals employed within it, examining garment workers' wages and expenditures provides valuable insights into their living standards, financial stability, and overall wellbeing. By shedding light on these aspects, this project aims to contribute to discussions on improving working conditions, advocating for fair wages, and promoting policies that enhance the livelihoods of garment workers in Bangladesh.

Through a combination of quantitative analysis and qualitative insights, this research endeavors to uncover the nuances of garment workers' expenditure behavior, including their allocation of earnings towards basic necessities, discretionary spending, savings, and debt repayment.

Additionally, the study will investigate the impact of variables such as gender, education level, household composition, and access to financial services on expenditure patterns, aiming to identify key determinants and potential areas for intervention.

Furthermore, by contextualizing the findings within the broader socio-economic landscape of Bangladesh, this paper aims to contribute to existing literature on labor economics, poverty alleviation, and development studies. Ultimately, the insights garnered from this research endeavor hold the potential to inform policy interventions, industry practices, and social initiatives aimed at enhancing the financial resilience and well-being of garment workers in Bangladesh.

The objective of this work is to delve into the expenditure habits of garment workers in Bangladesh, shedding light on the factors influencing their spending decisions and the implications for their overall livelihoods. By exploring the intricate relationship between income, expenditure, and socioeconomic factors, this study seeks to provide a comprehensive understanding of the financial dynamics within this critical sector.

II. Review of Literature

A number of previously published papers based on garment worker has reviewed to get concept and comparing current state of garment worker. We also strive to bring out their data collection methods, who are stockholders, sample size and also their limitations.

Dash and Bhuiyan [1] have used stratified sampling technique and descriptive statistics. Their sample population was slum people and sample size was 100. They analyzed the problems of garment workers in slum area.

M. A. K. Azad [2] has used random sampling technique and inferential statistics. His sample population was garment workers in 10 industrial area and sample size was 10. He analyzed the satisfaction of garment workers with current salary structure.

Hasan, Amin, and others [3] have used random sampling technique and descriptive statistics. Their sample population was RMG workers and sample size was 486. They analyzed

Health sufferings, healthcare seeking behaviour, awareness about health insurance, and health related rights of ready made garments workers.

R. Naved, T. Rahman, S. Willan, R. Jewkes, and A. Gibbs,[4] have used random sampling technique and inferential statistics. Their sample population was female RMG workers and managerial bodies, and sample size was 1000. They analyzed female worker's violence experience in home and workplace.

Fatema, K., Natasha, K., and Ali, L. [5] have used random sampling technique and descriptive statistics. Their sample population was garment workers who are more than 18 years old and sample size was 614. They analyzed the cardiovascular risk factor among the garment workers.

S. S. B. Rahaman, J. Ara, and M. M. Hossain [6] have usedrandom sampling technique and inferential statistics. Their sample population was garment workers and sample size was 500. They analyzed relationship between workers and owners in RMG sector.

R. Roy [7] has used random sampling technique and infer-ential statistics. His sample population was garment workers and sample size was 545 selected randomly from 6 garments. He analyzed labour unrest in Bangladesh.

S. Sharmin and W. A. Mannan [8] have used randomsampling technique and inferential statistics. Their sample population was female garment workers and sample size was 434. They analyzed vulnerability in female garment workers' lives.

N. Islam, S. K. Ghosh, A. Islam, N. M. Salam, M. T. Khosru, and M. A. Masud [9] have used random sampling technique and inferential statistics. Their sample population was female garment workers and sample size was 800 selected from 10 RMG factory. They analyzed working conditions and lives of female ready made garment workers in Bangladesh.

Sikdar, M. M. H., Sarkar, M. S. K., and Sadeka, S. [10] have used random sampling technique and descriptive statistics. Their sample population was female garment workers and sample size was 80 focused on Dhaka city. They analyzed Socio-Economic conditions of the female garment workers in the capital city of Bangladesh.

Uddin, M. G. S. [11] has used stratified sampling technique and descriptive statistics. His sample population was garment workers and sample size was 200 selected from 20 RMG factory. He analyzed Wage productivity and wage income differential in labor market.

Farhana, K., Syduzzaman, M., and Munir, M. S. [12] have used stratified sampling technique and descriptive statistics. Their sample population was garment workers and sample size was 90 selected from Dhaka and Gazipur region. They analyzed present status of workers in ready made garment.

Bhuiyan, M. Z. A. [13] have used stratified sampling technique and descriptive statistics. Their sample population was garment workers and sample size was 100. They analyzed present status of workers in ready made garment.

Alam, M. N., Hassan, M. M., Bowyer, D., and Reaz, M. [14] have used stratified sampling technique and inferential statistics. Their sample population was garment workers and sample size was 500. They analyzed the effects of wages and welfare facilities on employee productivity.

Haque, M. F., Sarker, M. A. R., Rahman, M. S., and Rakibuddin, M. [15] have used random sampling technique and descriptive statistics. Their sample population was female garment workers and sample size was 400. They analyzed discrimination of women at RMG sector in Bangladesh.

III. Methodology

Through extensive search of literature and discussion with managerial body of several RMG factories, a number of factors that are considers to have influence on wages and living expenditure. These influential factor are categorized as input variable. On the other hand, the output variable is their satisfaction level. The primary data are collected from garment workers and secondary data are collected from internet.

For this study, recent real world data were collected from garment workers. RMG factories were randomly selected from Dhaka Uddhan. A sample of 120 garment workers were taken from a group of factories. Workers were grouped in a room where they were briefed clearly about the questionnaire and it took on average half an hour to fill the questionnaire. Selection of workers was at random.

The primary data was collected using a questionnaire which includes questions related to several personal, socio-economic, expenditure sector, earning sector and factory related variables that were expected to affect workers wage and expenditure. The questionnaire was reviewed by the managerial bodies of factory and tested on a small set of 15 workers in order to get a feedback. The final version contained 25 questions and it was answered by more than 120 workers. Latter a sample of 110 were selected from the whole. All 110 questionnaires were filled with the response rate of 100% out of which 68 were females and 42 were males. The secondary data was collected from verified internet source.

IV. Tools and Technique

Data analysis and visualization is widely used in almost all research fields such as medicine, computer science, economics, finance, geography and so on, and it is an essential part in all of research. These representation readily lend themselves to be displayed graphically, helping to make them easier to interpret. For this study, we use R programming for all types of analysis and graphical visualization. Moreover, Readxl package for importing excel sheet, rstatix package for all statical tests and ggplot2 package for all graphical visualizations.

A. Data Pre-processing

As it is common in data processing before running test on data instance, it is necessary to clean and prepare data for use

into R programming. An important piece here was the need to convert string data into nominal data from the excel file. This was done based upon the requirements constraints of the method used, as they do not accept string data for processing. In addition, it was important to look at relevance of the attributes to remove redundant, noisy, or irrelevant features. In the data, three attributes workers name, home district and employed factory name were removed. In this study, replace missing values with NA that was used to replace all missing values for attributes. Replacing missing values places the distribution towards the mean value of the most frequent values for an attribute, and prevents the loss of information which might potentially be useful for learning.

A total of 120 records were taken for the analysis. In this study, we convert all categorical data into numeric value. Then omitted all less important and irrelevant variables for convenient in analysis. All after, we select 110 more appropriate and selected data for our work.

B. *Collected Data summary*

Gender	
Male	42
Female	68

Marital Status		
Single	Married	Divorced
21	65	24

Age			
Under 18	18 to 25	26 to 35	Above 35
10	29	39	32

Education Level			
Primary	Secondary	Higher	Above Sec.
26	44	22	18

Experience(year)			
Under 3	3 to 7	8 to 12	Above 12
25	27	36	22

Wage			
Under 5000	5000 to 8000	8000 to 12000	Above 12000
05	27	32	46

Home Rent			
Under 1000	Under 2000	Under 3000	Above 3000
14	24	34	38

Cost for children Education per month			
Under 1000	Under 2000	Under 3000	Above 3000
19	34	18	22

Cost for treatment per month			
Under 1000	Under 2000	Under 3000	Above 3000
45	35	10	15

Cost for buy groceries per month			
Under 1000	Under 2000	Under 3000	Above 3000
15	10	24	61

How much can deposit			
Under 1000	Under 2000	Under 3000	Above 3000
50	25	20	10

Variable	Yes	No
I am getting minimum wages as per Bangladesh Labor Act.	72	38
I get paid overtime as double the normal working hours.	67	43
My company pays me basic 40% as house rent, medical allowance Rs 250, food allowance Rs 300 and transport allowance Rs 650 along with basic wages as per law.	21	89
My company provides me gratuity, provident fund, insurance benefits and retirement benefits as per law.	71	39
My company pays me regular annual increments.	77	33
What is the need for any subsidy beyond the salary?	47	63
Is the wage earned enough to live well?	40	70

V. Analysis and Result

The following are the attributes and corresponding hypothesis to verity authenticity of the attributes Chi-square test(x2) is one of the simplest test and most widely used parametric tetes in statistical work. The Chi square value is used to judge the significance of population variance .The p value is used to check the acceptance of null hypothesis .A p value less than 0.05 is typically considered to be statically significant ,in which case the null hypothesis should be rejected. A p value greater than 0.05 means that deviation from the null hypothesis is not statically significant and the null hypothesis is not rejected.

Table 1,Testing Hypothesis(Chi Square Test)

Hypothesis	X2	P-value	Result
I am getting minimum wages as per Bangladesh Labor Act.	10.509	0.001188	Rejected
I get paid overtime as double the normal working hours.	5.2364	0.02212	Rejected

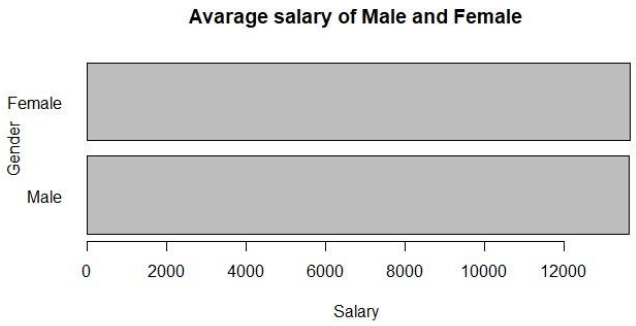
My company pays me basic 40% as house rent, medical allowance Rs 250, food allowance Rs 300 and transport allowance Rs 650 along with basic wages as per law.	39.6	0.00014	Rejected
My company provides me gratuity, provident fund, insurance benefits and retirement benefits as per law.	9.3091	0.00228	Rejected
My company pays me regular annual increments.	17.6	0.0183	Rejected
What is the need for any subsidy beyond the salary?	2.3273	0.1271	Accepted
Is the wage earned enough to live well?	8.1818	0.004231	Rejected

A T-test is a statical test that is used to compare the means of two groups. It is often used in hypothesis testing to determine whether a process or treatment has actually has an effect on the population of interest on whether two groups are different from another . According to the report of a govt. agency from "A.,K.,E and Bari,E.[16] presented that the average salary of garments workers is 15988 and expenditure in 1896.Based on analyzing our collected data, we find the average salary of garments worker is 13664 and expenditure is 19353 taka. We used t-test to find out the accuracy of their hypothesis.

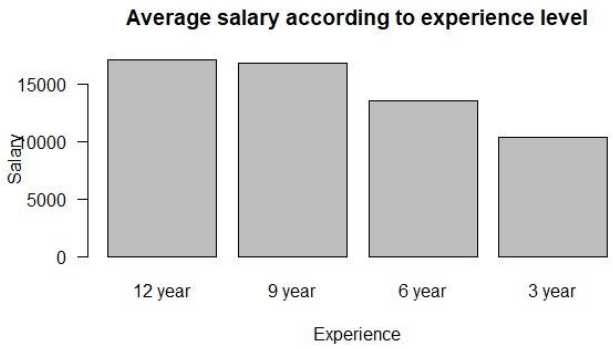
Table 2 for Hypothesis(T-test)

H_0 Hypothesis	Critical Value	Confidence Level	T Value	Result
Average salary=15988 [16]	-1.9820 and 1.9820	95%	-7.6025	Rejected
Average Expenditure= 185961[16]	-1.9820 and 1.9820	95%	1.9495	Accepted

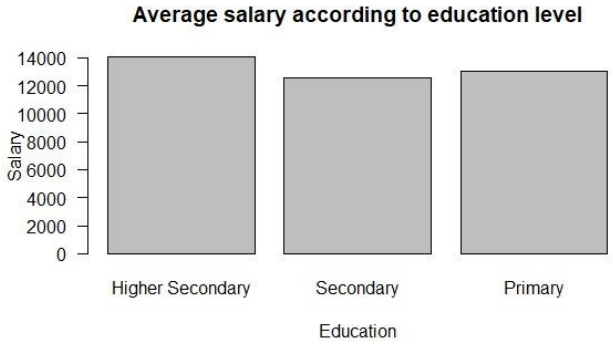
Analyzing from gathered data, we observe the average salary of male and female is almost same, 13643tk and 13676tk.



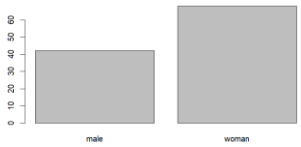
Also observed in there, salary is increasing with raising experience.



We see that, education level doesn't impact on salary range rather experience level plays a significant rule.

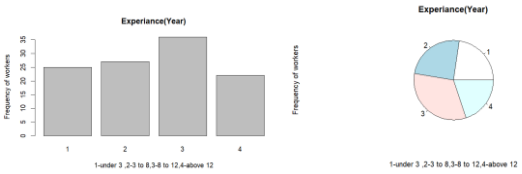


After analysing the data we observe garments workers only male and female.From the graph we can see that maximum number is female and minor male.



From the data we can see that all the garments workers are single,married and divorced but most of them married.

From the data we can see that there are 4 level of experience 1.under 3 years,2-3 to 7 years,3-8 to 12 years and 4-above 12 years.From the chart we can observe that most of them have 8 to 12 year experience in this sector.



VI. Conclusion and Future Work

In conclusion, this study has shed light on the complex relationship between income and living standards among garment workers. Through a comprehensive analysis of wages and expenses, we have identified several key findings. Firstly, the wages earned by garment workers often fall short of providing a decent standard of living, leading to financial vulnerability and limited opportunities for upward mobility. Secondly, expenses such as housing, healthcare, and education constitute a significant portion of workers' income, further exacerbating their financial strain. Moreover, the average salary of garment workers that claimed by government are much more than actually workers paid. These findings underscore the urgent need for policy interventions and industry-wide reforms to improve the economic well-being of garment workers and promote social equity.

Since we worked with small numbers and limited data, our research results have some limitations. Cost of living varies in different regions of the country. There is a difference in wages for workers in export-oriented garments, manufacturing garments for the domestic market and foreign-owned garments. As a result, some difference is observed in our research results with actual results.

While this study provides valuable insights, there are several avenues for future research to explore. Firstly, conducting longitudinal studies to track changes in wages and living standards over time would provide a more dynamic understanding of the challenges faced by garment workers. Additionally, investigating the impact of specific policy interventions, such as minimum wage laws or social protection programs, on workers' income and living conditions could offer valuable insights for policymakers and stakeholders. Finally, examining alternative models of production and employment arrangements, such as worker cooperatives or fair trade practices, could offer potential pathways towards more sustainable and equitable economic development in the garment sector.

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