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IMPACT OF COVID -19 ON LIVELIHOOD IN TOBACCO AND BAKERY INDUSTRY: A STUDY OF PURBA MEDINIPUR DISTRICT IN WEST BENGAL

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ABSTRACT
The present paper analyzed the impact of COVID -19 on livelihood in the Tobacco and Bakery industry in Purba Medinipur District of West Bengal. In this paper I have used primary data based on households in this industry. The status of Tobacco and Bakery industry measured through the factors such as employment, investment and turnover of capital. The status of livelihood is measured through factors such as income and employment between the (2017-18 to 2022-23) period. I have used Descriptive research methodology quantitative in nature. The changes of employment, income, investment and turnover of capital is statistically significant in Tobacco and Bakery industries between the year (2019-20) and (2020-21) due to the impact of COVID-19. The employment has a strong positive influence on income in Tobacco industry and in the Bakery industry Employment has the strongest positive effect on income.
KEYWORD: *Employment, Income, Investment, and turnover of capital.*

I. INTRODUCTION

The Micro, Small and Medium Enterprise is an essential component of the Indian economy, comprising more than 6.30 crore enterprises. Compared to other sectors, it requires less investment while fostering entrepreneurship and creating employment. MSMEs provide the greatest job prospects, second only to agriculture, and are essential to industrial development, economic expansion, and the fair allocation of resources across the nation. This paper particularly highlights Tobacco (Micro industry) and Bakery (Small industry) in Purba Medinipur District of West Bengal. West Bengal contains almost 90 lakh MSMEs, many of which are operated by a single person, according to the Sectoral Paper [1], on MSMEs in West Bengal (2022-23) published by NABARD. Together, those businesses employed almost 1.35 crore people, explained the vital role that the MSME sector in creating jobs and fostering the state's economic growth. Human Development Report (HDR) W.B (2021) [2] analysed the wage disparity concerning issue and this disparity was not substantial and could be reconciled. The report also highlighted an issue concerning the actual wage rate was just slightly over Rs.14. This requires urgent improvement. Micro, Small, and Medium Enterprises (MSMEs) played a pivotal role in West Bengal's economy, contributing significantly to employment and industrial output. Notable initiatives to promote these sectors include Biswa Bangla [3], established by the Government of West Bengal, Biswa Bangla aims to promote the state's handicrafts and textiles, supporting artisans and preserving traditional crafts. Mishti Hub [4], located near Eco Park in New Town, Kolkata, this initiative brings together renowned sweet makers from across the state, offering a centralized platform for traditional Bengali sweets. The Purba Medinipur district in West Bengal has over 721 MSMEs, classified as 395 micro, 253 small, and 73 medium-scale enterprises, according to the District Annual Report of Purba Medinipur (2018) [5], Over time, the number of MSMEs in the area has been rising gradually. Together, these businesses employed almost 6,000 people, with 3,300 working for microbusinesses, 1,800 for small businesses, and 900 for medium-sized businesses. The COVID-19 pandemic led to a decline in the number of MSME units, consequently reducing the job opportunities among the districts of West Bengal, Purba Medinipur experienced a more severe impact on livelihood conditions due to this downturn. Purba Medinipur has been chosen as a typical sample for further investigation considering these economic risks. Human development Report (2011) [6] stated that the Purba Medinipur district has a large number of small organised industrial units in food processing, agricultural implements, handicrafts, cashew nuts processing etc. The employment generating capacity of these units is small but rural financial infrastructure depend on this units. According to DSR (2020) [7] the Purba Medinipur District was home to a significant quantity of small-scale, structured industrial enterprises that specialize in food processing, agricultural implements, handicrafts, and cashew nut processing, among other areas.

Review of literature

Adukia (2017) [8] explained that the contribution of the manufacturing sector as well as the service sector of MSMEs was significant to the total GDP of the country. The Govt. of India has taken a few initiatives to improve MSME in the country. The MSME sector in India is growing at a good pace and provided employment opportunities to masses of people. The study was comprehensive in nature, and it was extensively based on secondary data sources.

Scoones (1998) [9] conducted a detailed study on sustainable rural livelihoods using both qualitative and quantitative data. He developed an MSME framework based on five key indicators. This framework explains how people achieved sustainable livelihoods

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by accessing various resources and adopting different strategies like agricultural intensification, diversification, and migration. He also examined the role of formal and informal organizations and institutions in shaping livelihood outcomes.

The MSMED Act, (2006) [10] was enacted to establish a framework for developing and enhancing the competitive of MSMEs by setting up of a national board MSMEs, classification of enterprises, Advisory committees to support MSMEs scheme to control delay payments to MSMEs and enactments of rules by state Government to implement the MSMED Act, 2006 in their respective State. The report was based on secondary data sources from various reports on MSME.

Islam and Ganguly (2019) [11] used primary survey data by stratified random sampling method to ensure representation across various sectors and sizes of MSMEs through structured questionnaires from 400 MSMEs, with 200 from each district, Regression analysis was conducted to examine the relationships between loan services, their utilization, and capital formation. He explained that the micro, small and medium enterprises have a pivotal role as an economic growth for the socio-economic development of our country. In this sector utilisation of loan was playing a mediating role in the relation between utility of loan service and capital formation where Government and public sector bank ensured a strong access of loan fund to enhance the growth of MSMEs.

Dhara and Chatterjee (2017) [12] used secondary data from NSSO and applied descriptive and econometric analysis to identify factors influencing rural women's participation in non-farm employment. They pointed out that as agriculture's share in GDP declines with economic growth, India had experienced a shift from agriculture to the service sector. This transition led to livelihood diversification, increased non-agricultural activities, and changes in the rural occupational structure through a growing rural non-farm sector.

Das & Das (2016) [13] used secondary unit level panel data from NSSO (67th round) from (July 2010 to June2011). They conducted a descriptive analysis to assess the operational and economic characteristics of MMEs. They found that the micro manufacturing enterprises (MMEs) status of growth was significantly affected by productivity, profitability, location, nature of enterprises, employment, technological upgradation credit facility, and Government policy initiatives.

Nandi et.al (2014) [14] his study was based on unorganized bidi manufacturing enterprises from the National Sample Survey (NSS) of firms in India, it included a sample of 2,841 unorganized bidi manufacturing firms and applied an analytical approach for comparing bidi industry's share of total sales and gross value added (GVA) within the manufacturing sector.He analysed that the unorganised Bidi manufacturing industry had a small contributor to the National economy but at the regional level it contributed a significant share of employment and economic activity like GVA in few States through forward and backward linkages effect.

Govt of W.B., Bureau of Applied Economic and Statistics (2021) [15] This report is based on secondary data sources, including official statistics and records, to assess various economic factors such as employment rates, GDP growth, industrial outputs, agricultural growth, and infrastructure development. The research methodology was quantitative in nature. This approach involves systematic collection and analyzing numerical data to evaluate the district's economic indicators over the specified period. Purba Medinipur District exhibits a comparatively inferior economic performance in comparison to West Bengal over a span of three years encompassing both pre and during COVID-19 periods (2018 to 2020), with regards to both nominal and real wages.

Kumari et.al (2020) [16] used qualitative research method based on secondary data from various sources. They explained that COVID-19 had an adverse impact on various sectors of the economy. India was becoming the 3rd highest country with infected corona patients. During the lockdown, the informal sector suffered the maximum due to job losses and food insecurity. The government had been trying to manage the various challenges that was coming in their way through various economic packages and providing extra funds for the health-care sector.

Akriti & Patnaik (2020) [17] used qualitative research method based on secondary data from various sources such as Government reports, articles, private intuitional data Magazine etc. He explained that the COVID-19 pandemic had severely impacted on several economic sectors. India ranks third in overall COVID-19 infections due to a sharp rise in cases. Due to job loss and food shortages, the uncontrolled economy suffered the most during enforced confinement. The government adopted various economic packages and increased healthcare funding to solve many issues.

Objective of the Study

1. To analyse the status of Tobacco (Micro) Industry and Bakery (Small) industry in Purba Medinipur District.
2. To analyse the status of livelihood in Tobacco and Bakery industry of Purba Medinipur District.
3. To examine the impact of COVID-19 on livelihood in Tobacco and Bakery industry of the study area.

Hypothesis

Based on the objectives mentioned, the following research hypotheses were developed and examined: The status of Tobacco and Bakery industry was assessed by three factors:

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(a) Employment, (b) Investment, and (c) Turnover of capital in the Tobacco and Bakery industry
The determinants of livelihood were (a) Employment (b) Income. The measuring index assessed the impact of Tobacco and Bakery industry on livelihoods from the pre-COVID-19 period (2017, 2018, 2019) to the COVID-19 period (2020, 2021, 2022, 2023).

a) H_0: There is no significant impact of Employment, Investment and Turnover of capital in Tobacco industry on livelihood determinants during COVID-19.
   H_1: There is significant impact of Employment, Investment and Turnover of capital in Tobacco industry on livelihood determinants during COVID-19.
b) H_0: There is no significant impact of Employment, Investment and Turnover of capital in Bakery industry on livelihood determinants during COVID-19.
   H_1: There is significant impact of Employment, Investment and Turnover of capital in Bakery industry on livelihood determinants during COVID-19.

Data sources and Methodology of the study

Primary Data and Sampling Design:

I have collected primary data in two blocks (Panskura-I & Panskura-II) of Purba Medinipur in West Bengal from 60 sample households with the help of structured questionnaires through simple random sampling method for the period (2017-18 to 2022-23).

Methodology

The present paper is descriptive as well as exploratory research based on primary data

***Units of study*:** Household

***Identification of variables*:** The dependent variable (employment, income) is livelihood status (Y) and the factors that affected livelihood included employment, income. The independent variable is the status of Tobacco (Micro) industry & Bakery (Small) industry (x_i) and the measurement factors of the status of these industries are such as: Number of employees (x1), investment (x2), turnover of the capital (x3). The relationship has been assessed by formulating a composite index of livelihood and multiple regression analysis of a single dependent (Y) with three multiple independent variables (x1, x2, x3).

Analysis of data:1. Descriptive statistics and Paired t-Test (for pre vs. during COVID-19 comparison)

The paired sample t-test is applied to assess whether the mean CLI (Composite Livelihood Index) values (employment, income, investment, and turnover of capital) in Tobacco and Bakery industry significantly differed between the pre COVID-19 (2017 to 2020) and during COVID-19 (2020 to 2023) period.

II. REGRESSION ANALYSIS (MULTIPLE REGRESSION)

The multiple regression analysis is conducted to evaluate the impact of independent variables (employment, investment, and turnover of capital) on livelihood determinates, i.e. (Composite Livelihood Index) across the Tobacco (Micro) industry and Bakery (Small) industry

The analysis is applied separately for two periods: 1) pre-COVID (1017-18 to 2019-20)
2) During- COVID (2020-21 to 2022-23)
The T-test results on employment, income, investment, and turnover of capital are given below:

Table-1 Mean Test of Employment in Tobacco and Bakery industry, between Pre (2019-20) and During (2020-21) COVID.

Tobacco industry employment	Mean	SD (σ1, σ2)	No. of observation	t - test	P-value	Test Result H0: μ1 = μ2 H1: μ1 > μ2
2019-20	1	0.711	30	1.97	0.02**	H0 is rejected.
2020-21	1	0.572				
Bakery industry employment						
2019-20	1	0.718	30	-1	0.16	H0 is accepted
2020-21	1	0.770				

Sources: Authors' Calculation on basis of primary survey data.
Notes: *** = at 1 % level significant. ** = at 5 % level significant.
In table 1, μ_1 & σ_1 are the mean & SD of Employment in the year (2019-20) within the Tobacco and Bakery industry, whereas μ_2 & σ_2 are the respective value of employment in the year (2020-21) within the Tobacco and Bakery industry, statistical tests have been done following the methodology of Goon, Gupta and Dasgupta (1968) pp, 396-404. SD = Standard Deviation, df = degrees of freedom, n = no of observations.

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In this statistical test of employment in Tobacco industry, t- test value is (1.97) and P value is (0.02) i.e. less than (0.05), this indicates a statistically significant change in employment between the year (2019-20) and (2020-21).

In this statistical test of employment in Bakery industry, t- test value is (-1) and P value is (0.16) i.e. greater than (0.05), this indicates that change of employment is not significant between the year (2019-20) and (2020-21).

Table-2 Mean Test of Income from Tobacco and Bakery industry, between Pre (2019-20) and During (2020-21) COVID.

Tobacco industry income	Mean	SD (σ1, σ2)	No. of observation	t - test	P-value	Test Result H0: μ1 = μ2 H1: μ1 > μ2
2019-20	24300	17475.52	30	7.02	.0001**	H0 is rejected.
2020-21	20883	15237.79				
Bakery industry income						
2019-20	280082	149101.8	30	3.66	.00001**	H0 is rejected
2020-21	275525	148490.4				

Sources: Authors' Calculation on basis of primary survey data.
Notes: *** = at 1 % level significant. ** = at 5 % level significant.
In the table-2, μ_1 & σ_1 are the mean & SD of income in the year (2019-20) within the Tobacco and Bakery industry, whereas μ_2 & σ_2 are the respective value of income in the year (2020-21) within the Tobacco and Bakery industry, statistical tests have been done following the methodology of Goon, Gupta and Dasgupta (1968) pp, 396-404. SD = Standard Deviation, df = degrees of freedom, n = no of observations.

In this statistical test of income in Tobacco industry, t- test value is (7.02) and P value is (0.0001) i.e. less than (0.05), this indicates a statistically significant change of income between the year (2019-20) and (2020-21).

In this statistical test of income in Bakery industry, t- test value is (3.66) and P value is (0.00001) i.e. less than (0.05), this indicates a statistically significant change of income between the year (2019-20) and (2020-21)

Table-3 Mean Test of investment in Tobacco and Bakery industry, between Pre (2019-20) and During (2020-21) COVID.

Investment in Tobacco industry	Mean	SD (σ1, σ2)	No. of observation	t - test	P-value	Test Result H0: μ1 = μ2 H1: μ1 > μ2
2019-20	46498	11772.63	30	21.63	0.0001**	H0 is resected.
2020-21	44284	11212.03				
Investment in Bakery industry						
2019-20	199903	120873.3	30	-9.06	0.00001**	H0 is resected
2020-21	204225	123486.8				

Sources: Authors' Calculation on basis of primary survey data.
Notes: *** = at 1 % level significant. ** = at 5 % level significant.
In table 3, μ_1 & σ_1 are the mean & SD of investment in the year (2019-20) within the Tobacco and Bakery industry, whereas μ_2 & σ_2 are the respective value of investment in the year (2020-21) within the Tobacco and Bakery industry, statistical tests have been done following the methodology of Goon, Gupta and Dasgupta (1968) pp, 396-404. SD = Standard Deviation, df = degrees of freedom, n = no of observations.

In this statistical test of investment in Tobacco industry, t- test value is (21.63) and P value is (0.0001) i.e. less than (0.05), this indicates a statistically significant change in investment between the year (2019-20) and (2020-21).

In this statistical test of investment in Bakery industry, t- test value is (-9.06) and P value is (0.00001) i.e. less than (0.05), this indicates that change of investment is statistically significant between the year (2019-20) and (2020-21).

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Table-4 Mean Test of Turnover of capital in Tobacco and Bakery industry, between Pre (2019-20) and During (2020-21) COVID.

Turnover of capital in Tobacco industry	Mean	SD (σ1, σ2)	No. of observation	t - test	P-value	Test Result H0: μ1 = μ2 H1: μ1 > μ2
2019-20	79580	57229.5	30	7.62	0.0001**	H0 is Rejected.
2020-21	69200	49764.77				
Turnover of capital in Bakery industry						
2019-20	1398715	817347.9	30	9.37	0.00001**	H0 is Rejected
2020-21	1383087	808215.6				

Sources: *Authors' Calculation on basis of primary survey data.*
Notes: *** = at 1 % level significant. ** = at 5 % level significant.
In table 4, μ_1 & σ_1 are the mean & SD of Turnover of capital in the year (2019-20) within the Tobacco and Bakery industry, whereas μ_2 & σ_2 are the respective value of Turnover of capital in the year (2020-21) within the Tobacco and Bakery industry, statistical tests have been done following the methodology of Goon, Gupta and Dasgupta (1968) pp, 396-404. SD = Standard Deviation, df = degrees of freedom, n = no of observations.

In this statistical test of Turnover of capital in Tobacco industry, t- test value is (7.62) and P value is (0.0001) i.e. less than (0.05), this indicates a statistically significant change in Turnover of capital between the year (2019-20) and (2020-21).

In this statistical test of Turnover of capital in Bakery industry, t- test value is (9.37) and P value is (0.00001) i.e. less than (0.05), this indicates that change of Turnover of capital is statistically significant between the year (2019-20) and (2020-21).

Findings
It was found from the above t-test table that the changes of employment, income, investment and turnover of capital is statistically significant in Tobacco and Bakery industries between the year (2019-20) and (2020-21), while only the change of employment in Bakery industry was not significantly change during the same period.

In Tobacco industry Regression Model:
1. Dependent variable: income
2. Independent variables: employment, investment, turnover of capital, time dummy
3. Observations: 180
4. R-squared = 0.9951
   99.51% of the variance in income is explained by the model
5. Adjusted R-squared = 0.9950
   This indicates that slightly lower but still extremely strong.
6. F (4, 175) = 8956.92, Prob > F = 0.0000
   This indicates that Model is statistically significant.

Table-5 Regression Model on Tobacco industry during pre and post Covid period.

Variable	Coefficient	P-value	Interpretation
employment	1089.877	0.001	Statistically significant. A one-unit increase in employment leads to an estimated increase of 1089.88 in income, holding other variables constant.
investment	-1.172385	0.000	Statistically significant. A unit increase in investment results in a decrease of ~1.17 in income. This suggests negative return on investment, which may be a sign of inefficiency or a lag in income generation.
Turnover of capital	-0.3400311	0.000	Highly significant and negative. Each unit increase in turnover of capital leads to a decrease of ~0.34 in income.
Time dummy	-530.2615	0.024	Statistically significant (p = 0.024). A one-unit increase in time dummy leads to a decrease of ~530.26 in income.
_cons (Intercept)	3248.3	0.000	When all predictors are zero, income is estimated to be 3248.3.

Sources*: Authors' Calculation on basis of primary survey data.*
Key Findings
1. This model is highly significant with very strong explanatory power (R^2 = 99.51%).
2. All predictors are statistically significant (p < 0.05).

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3. employment has a strong positive influence on income in Tobacco industry.
4. investment, turnover of capital, and time dummy all show negative effects on income

In Bakery industry Regression Model:

1. Dependent variable: Income
2. Independent variables: Employment, Investment, Turnover of capital, time dummy
3. Number of observations: 180
4. R-squared = 0.9841
   This indicates, about 98.41% of the variation in income is explained by the independent variables.
5. Adjusted R-squared = 0.9838
   This indicates, Adjusted for the number of predictors; still very high,
6. F (4, 175) = 2714.92, Prob > F = 0.0000
   This indicates that the regression model is statistically significant.

Table-6 Regression Model on Bakery industry during pre and post Covid period.

Variable	Coefficient	P-value	Interpretation
employment	18170.82	0.000	Statistically significant. For each unit increase in employment, income increases by about 18,171 units, holding other variables constant.
investment	0.3709658	0.000	Significant. For each unit increase in investment, income increases by ~0.37 units, ceteris paribus.
Turnover of capital	0.1153279	0.000	Significant. A one-unit increase in turnover of capital increases income by ~0.115 units, other factors held constant.
Time dummy	-6033.018	0.000	Significant and negative. Each unit increase in time dy decreases income by about 6033 units.
_cons (Intercept)	28271.8	0.000	When all predictors are zero, income is ~28,272.

Sources: *Authors' Calculation on basis of primary survey data.*

Findings

1. All variables are statistically significant (p-values < 0.05).
2. The regression model explains a very large proportion of the variance in income.
3. Employment has the strongest positive effect on income, while time dummy has a significant negative effect.

III. CONCLUDING OBSERVATION

Thus, by observing the primary data on Tobacco and Bakery industry it was found that the status of Tobacco and Bakery industry measured by the factors such as employment, investment and turnover of capital and the status of livelihood is measured by the factors such as income and employment between the period (2017-18 to 2022-23) which is significantly changed during the period. It was also observed that the employment has a strong positive influence on income in Tobacco industry and in the Bakery industry Employment has the strongest positive effect on income, these changed occurred due to reasons such as lockdowns, challenged in transport and communication, socio-economic sector failure and issues in financial & banking sector etc during the COVID-19 period.

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