# District level children's nutritional performance in West Bengal After implementation of NFSA-2013.

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**Abstract**

*The National Food Security Act, 2013 (NFSA) transforms the government of India's food security initiatives into legislative rights. It comprises universal programmes like the Mid-day Meal Schemes and Integrated Child Development Services Schemes, whereas the public distribution systems serve both urban and rural areas. The value of nutritional determinants for children below the age of 5 in West Bengal's districts did not increase significantly after the introduction of the NFSA, but the disparity in nutritional performance between districts decreased marginally. Apart from this, social infrastructure such as purified water , women's literacy rate, proper sanitation, and access to adequate food for breastfeeding children has played a significant role for improving the nutritional status of children in West Bengal.*

**Keywords:** *Nutritional Performance, NFSA, Social Infrastructure, wasted, stunted, underweight.*

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## I.    Introduction

West Bengal is one of the financially backward States of India (rbi.org.in) where food and nutrition issues are very worrying issues. The NFSA-2013 has been initiated in India by Government of India for improvement of nutritional performance of pregnant women and children. Nutritional development of children is important because they are the future of a nation. Improved nutrition helps to overcome child mortality rate.

### 1.1 Nutritional Indicator

Nutrition indicator is the indicator through which it is possible to show the nutrition of children and women in a certain way. Those indicators are stunted, wasted and underweight. Stunted Children are those whose height is too short in comparison to age and it is a reflection of under nutrition. Wasted children refer to those who have not gained enough weight with height or have lost weight due to lack of adequate food intake or diseases like diarrhoea and respiratory infections. Underweight children refer to those whose weight is not enough according to their age. Lack of proper nutritional food and lack of proper nutrition during pregnancy period of women can lead to an increase in the number of such underweight children under five years.

### 1.2 Socio infrastructural variable

Many researchers ( A.Bose  and J.Sen(2020))  have shown in their research papers that children's nutritional development depends not only on the amount of food they receive, but also on the amount of other social services they receive. Four social infrastructural indices are taken up in this paper which help to improve children nutrition i.e improved drinking water source, improved sanitation facility, Children aged 6 to 23 months getting sufficient diet who are breastfed and woman literature.

Because of taking purified drinking water can keep children and all family members free from various water-borne diseases thereby boosting their immune system and contributing to their nutritional development, one of the main factors contributing to the high infant mortality rate (IMR) worldwide is diarrhea. It is water borne disease.

Improved and clean sanitation systems can keep children free from various insect-borne and vector-borne diseases, which greatly improve health.

If breastfed children are not able to consume adequate amounts of food, their immune system is weakened and it degrades rather than improves their nutritional status and they are prone to various diseases at

different times. As a result, along with their physical growth, intellectual growth slows down. So, breast milk is a very beneficial food for a child.

The women literacy plays a very important role in improving child nutrition. It has been seen in various research papers. Because if mothers are literate then they will be very vigilant in giving their children vaccines at the right time, besides feeding their children with a variety of micronutrient-based foods.

According to NFSA-4 & NFSA-5 data, these infrastructural benefits are expressed as percentages and it is observed that districts with low levels of nutritional performance receive a little of these infrastructural facilities. The rate of change of above infrastructural facilities in the nutritionally improved districts is comparatively less than the nutritionally backward districts as infrastructural facilities as per NFHS-5 compare to NFHS-4. Even, it is observed that in many nutritionally improved districts their nutritional percentage values have been decreased (Table2).

## 1.3 India's National Food Security Act-2013

Most recently, in 2013, NFSA -2013 was passed, giving the nation's food supply legal status. In this project, the government pledges to supply food for those in most regions of the nation who are below the poverty line. According to the Act, up to 75% populations in rural sector and up to 50% populations in the urban sector are eligible for getting subsidized food items through the Targeted Public Distribution System (TPDS), or nearly two-thirds of the population. West Bengal is granted the same advantages as other Indian states. The NFSA has been implemented in West Bengal since June, 2015. The following projects are brought under the umbrella of this scheme: 1) Integrated Child Development Services Scheme (ICDS); 2) Mid-day Meal Programs (MDM); 3) Special Nutrition Programs (SNP); 4) Wheat Based Nutrition Programs (WNP); 5) Applied Nutrition Programs (ANP); 6) Balwadi Nutrition Programs (BNP).

As per the NFSA Act , It is suggested that nutritional requirements for 6 months to 3 years children, lactating mothers and pregnant women must be met by providing "Take Home Rations" or according to the ICDS Scheme, a nutritious hot cooked meal. The following are the MDM Scheme criteria for pupils in lower and upper primary classrooms.

| Serial number | Category | Type of meal | Calories(Kcal) | Protein(g) |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 |
| 1. | Children(6 months to 3 years) | Ration at Home | 500 | 12-15 |
| 2. | Children(3to6years) | Morning Snack and Hot Cooked Food | 500 | 12-15 |
| 3. | Children( 6monthsto6 years) who are malnourished | Ration at Home | 800 | 20-25 |
| 4. | Lower primary classes | Hot Cooked Food | 450 | 12 |
| 5. | Upper primary classes | Hot Cooked Food | 700 | 20 |
| 6. | Pregnant women and Lactating mothers | Ration at Home | 600 | 18-20 |

Source :https://www.egazette.nic.in

## II. Literature Review

A.Bose and J.Sen(2020) in their research paper entitled "Some observations on malnutrition among Indian pre-school children" has tried to show severity of malnutrition among pre- school children in India. Malnutrition means lack of sufficient balance diet or excess diet. It includes stunting, wasting and underweight, overweight, obesity and a few communicable diseases resulting by diet. Malnutrition affects to children under five years in their cognitive, physical, behavioral, psychological and thinking skills which are hindrance of development of a children. When a large number of pre- school children suffers from stunting, wasting and uderweight then on the other hand some same aged children suffers from obesity and overweight due to intake of fat rich and high energy foods. This study has enlightened on comparison of stunting , wasting and underweight of pre-School children of India with Global as per Global nutrition Report 2018 and inter state of our country as per National family health survey – 4 and also have shown the prevalence of anemia of children aged under five year based on NFHS-4 data. In this study authors have shown the change of food hadits of children from healthy to junk food. It reduce the immunity power at alarming rate to protect several dieses and suggested the following for reduction of malnutrition problem for pre- school children - 1) Conduct counselling to mother regarding the malnutrition issues. 2) Anganwadi workers have to be more active regarding nutritional requirements of the children. 3) The government has to take a important role to increase the awareness about healthyfood intake habits, physical exercise, proper hygiene, drinking a free water.

Som S. et al(2006) in their research paper entitled "SOCIOECONOMIC DIFFERENTIALS IN NUTRITIONAL STATUS OF CHILDREN IN THE STATES OF WEST BENGAL AND ASSAM, INDIA" have tried to compare between pre-school children aged 5 years of West Bengal and Assam states in terms of

nutritional status using the NFHS-2 data. Two states have geographic and cultural similarity. Severity of malnutrition is thought to depend on socioeconomic factors such birth order, interval between births, parent's educational level, mother's employment position, mother's age at childbirth, supply of drinking water, bathroom facilities, and household standard of living.. They took three indices namely stunting, wasting and underweight of children under the age of three. They run multivariate logistic regression to show the indices of malnutrition of children in both states with the socioeconomic indicators. After analyzing they state that the effect of all socioeconomic indicators is not same on the prevalence of malnutrition in two states. For example, malnutrition problem is positively correlated with illiteracy rate of mothers in West Bengal but there is no perfect correlation between malnutrition of children and mother's literacy in Assam. Further It is shown in the contemporary studies that the effectiveness of both birth order and birth spacing play a pivotal role to measure the nutritional performance of children especially in West Bengal.

Dasgupta S & Wheeler D (2019) in their research paper entitled "Accounting for Regional Differences in Mother and Child Health among Bangladesh, West Bengal, Bihar, and Jharkhand" have tried to measures the regional difference in mother and child health among Bangladesh, West Bengal, Bihar, and Jharkhand. They employed Demographic and Health Surveys (DHS) data from India and Bangladesh to do so, and the sample included information from 124,327 people over 4,241 DHS clusters. Two surveys are performed to assess the health of children and mothers. Wasting is calculated using child weight-for-height measurements converted to Z-scores using the World Health Organization's Child Growth Standards (WHO, 2006). The logistic regression models relating the probability of child wasting and maternal anaemia were run in this analysis. According to logistic regression research, the poorest, least-educated mother and their children in Barishal have better health outcomes than their wealthiest, best-educated counterparts in Jharkhand.

### III. Objectives, Data Source and Methodology

Many researchers have presented different topics in various research papers on the nutritional performance of children depending on certain factors. But till now no researcher has compared the nutritional performance of children in all districts of West Bengal after introduction of NFSA-2013.

Thus,The main objective of this study is to explore the nutritional performance of Children below 5 years after implementation of National Food Security Act-2013 in various districts of West Bengal and the impact of socio demographic variable like Households with a purified drinking-water source ,Households that acces a better sanitation infrastructure , Breastfeeding children age 6 - 23 months receiving an adequate diet , Women who are literate on children's nutritional status .

The current study was based on cross-sectional data obtained at the unit level from the two most recent consecutive National Family Health Surveys (NFHS) IV and V. These NFHS were done by the International Institute for Population Sciences (IIPS) in 2015-16 and 2019-20, respectively. IIPS primarily offers two sorts of information: state fact sheets and district fact sheets. In our research, we used district-level data from West Bengal. This fact sheet provides information on major trends and indicators for West Bengal. Vimarsh Development Solutions Pvt. Ltd. conducted fieldwork for the NFHS-4 in West Bengal from 25 February to 21 July 2015 (VIMARSH), while the Indian Institute of Health Management Research conducted fieldwork for the NFHS-5 from 21 June to 8 November 2019. (IIHMR). The West Bengal Food Department website (https://wbpds.wb.gov.in/) provides information on the number of ration cards and beneficiaries under the National Food Security Act-2013.

As per NFHS-4 data, different district occupies a different rank which is written within bracket in terms of wasted, stunted and underweight nutritional parameter of children. But a district nutrition determinant is ranked differently on different criteria. For example, Bardhaman district occupies 10th, 5th and 8th rank in terms of Stunted, wasted and underweight respectively. But interestingly Purulia occupies bottom rank in terms of same nutritional parameter among 19 districts of West Bengal. So, it is difficult to say that which District is a well performer compare to rest. This problem is similar in the case of NFHS-5 data.

Morris David Morris created the Physical Quality of Life Index (PQLI) for the Overseas Development Council in the middle of the 1970s. It was developed as a result of disagreement with the use of GNP as a development indicator. The basic literacy rate, infant mortality, and life expectancy at one year of age are the three factors used by the Physical Quality of Life Index to gauge a nation's quality of life or general well-being. On a scale from 0 to 100, each is equally weighted. But in this paper , it is considered that on a scale from 0 to 1, each is equally weighted

The following formula is used to show which district is better off based on the quality of the three nutritional determinants:

$$NPI_{it}^{j} = 1 - \frac{x_{it}^{j} - \min(x_{it})}{\max(x_{it}) - \min(x_{it})}$$

NPI stands for Nutritional Performance Index. i stands for individual indices, *j* stands for district and *t* stands for time point.

Composite Index:

$$NPI_t^j = \frac{1}{n} \Sigma_{i=1}^n NPI_{it}^j$$

For Bankura district Nutritional performance Index for individual indices as per NFHS-4 for

Stunted children=1- $\frac{34-23.3}{45.5-23.3}$ = 0.52　　　　Wasted children=1- $\frac{27-10.7}{34.6-10.7}$ =0.32

Underweight children=1- $\frac{39.8-18.3}{58.2-18.3}$ = 0.47

Composite Index: Nutritional Performance Index (NPI) for Bankura District as per NFSA-4 report

NPI = $\frac{0.52+0.32+0.47}{3}$ = 0.43

In this same procedure, I have calculated NPI for each district as per NFSA-5 report and then determine rank using formula in Microsoft Excel.
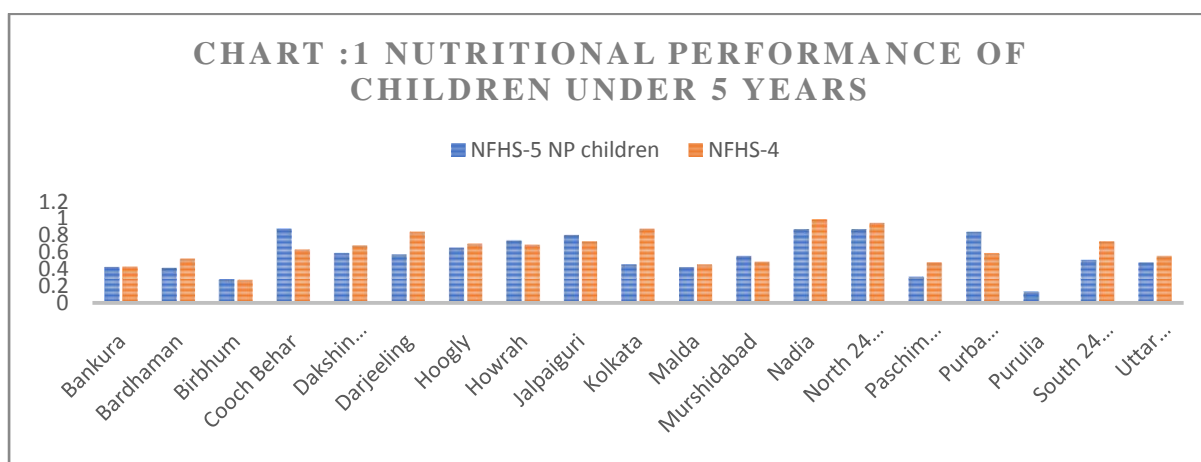


Chart 1 shows the Nutritional performance children under 5 years in different district in West Bengal between NFHS-IV and NFHS- V data . Cooch Behar districts performed well compare to other districts and Kolkata, Paschim Mednipure districts performed worse as per
NFHS- V data .

**Table1: Nutritional performance of Children below 5 years**

| District | Stunted (%) | | Wasted (%) | | Underweight (%) | | Nutritional performance | |
|---|---|---|---|---|---|---|---|---|
| | NFHS-4 | NFHS-5 | NFHS-4 | NFHS-5 | NFHS-4 | NFHS-5 | NFHS-4 | NFHS-5 |
| Bankura | 34(7)[2] | 30.3(12) | 27(4) | 26(4) | 39.8(4) | 38.8(4) | 0.43(17) | 0.43(14) |
| Bardhaman | 32.5(10) | 36.2(7) | 25.8(5) | 23.3(6) | 33.7(8) | 36.3(5) | 0.52(13) | 0.42(16) |
| Birbhum | 40.5(3) | 37(4) | 29.5(2) | 25.5(5) | 43.1(2) | 41.8(2) | 0.27(18) | 0.28(18) |
| Cooch Behar | 32.9(8) | 28.7(16) | 20.1(8) | 16.8(15) | 29.3(10) | 22.5(19) | 0.63(10) | 0.88(1) |
| Dakshin Dinajpur | 32.9(8) | 31.9(10) | 17.1(14) | 22.8(7) | 28.1(13) | 30.2(14) | 0.68(9) | 0.59(8) |
| Darjeeling | 29.1(15) | 34.3(8) | 11.3(18) | 20.6(10) | 25.7(15) | 31.6(12) | 0.84(4) | 0.57(9) |
| Hoogly | 30.1(12) | 28.9(14) | 18.5(10) | 20(11) | 28.7(11) | 33.4(7) | 0.70(7) | 0.65(7) |
| Howrah | 34.6(6) | 27.5(17) | 14.6(15) | 21.3(8) | 28.4(12) | 27.3(15) | 0.69(8) | 0.74(6) |
| Jalpaiguri | 31.2(11) | 28.9(14) | 17.7(11) | 18.3(13) | 24.6(16) | 25.4(16) | 0.73(5) | 0.80(5) |
| Kolkata | 24.2(17) | 29.6(13) | 17.4(13) | 29.3(3) | 19.6(17) | 32.9(8) | 0.88(3) | 0.46(13) |
| Malda | 37.8(5) | 40.5(2) | 22.8(7) | 20(11) | 37.2(5) | 35.3(6) | 0.45(16) | 0.42(15) |
| Murshidabad | 41.9(2) | 39.8(3) | 17.5(12) | 16.3(16) | 34.6(7) | 32.4(9) | 0.48(14) | 0.55(10) |

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[2] Number with in bracket indicate the Rank .

| Nadia | 23.3(19) | 26.1(18) | 10.7(19) | 17.6(14) | 19.3(18) | 25.1(17) | 0.99(1) | 0.87(2) |
|---|---|---|---|---|---|---|---|---|
| North 24 Parganas | 23.8(18) | 32.4(9) | 13.6(17) | 13.3(19) | 18.3(19) | 23.6(18) | 0.95(2) | 0.86(3) |
| Paschim Mednipur | 29.4(14) | 31.1(11) | 28(3) | 30.3(1) | 40.3(3) | 40(3) | 0.48(15) | 0.31(17) |
| Purba Mednipur | 29.9(13) | 25.8(19) | 24.5(6) | 15.5(18) | 32.8(9) | 30.6(13) | 0.58(11) | 0.84(4) |
| Purulia | 45.5(1) | 36.9(5) | 34.6(1) | 29.4(2) | 58.2(1) | 46.3(1) | 0(19)[3] | 0.14(19) |
| South 24 Parganas | 27.3(16) | 36.7(6) | 20.1(8) | 21.2(9) | 27.8(14) | 32.2(10) | 0.72(6) | 0.51(11) |
| Uttar Dinajpur | 40.4(4) | 44.8(1) | 14(16) | 16(17) | 34.7(6) | 32(11) | 0.56(12) | 0.48(12) |

Source: NFHS-4 & NFHS-5 and author calculation. Number with in bracket states the Rank.

**Table2: Social infrastructural facilities in different district in West Bengal**

| | Households with a purified drinking-water source(%) | | Households that acces a better sanitation infrastructure(%) | | Children aged 6 to 23 months getting sufficient diet who are breastfed (%) | | Women who are literate(%) | |
|---|---|---|---|---|---|---|---|---|
| District[4] | NFHS-4 | NFHS-5 | NFHS-4 | NFHS-5 | NFHS-4 | NFHS-5 | NFHS-4 | NFHS-5 |
| Bankura | 97.9(11) | 96.3(14) | 32(17) | 49.2(8) | 23.5(4) | 26.2(8) | 65.2(14) | 68.3(16) |
| Bardhaman | 96.6(15) | 97.15(13) | 46.6(14) | 67.85(12) | 31(3) | 24.8(11) | 66.6(12) | 73.35(12) |
| Birbhum | 97.7(13) | 99.4(6) | 31.1(18) | 55(17) | 14.7(14) | 34.5(1) | 62.1(17) | 70.8(15) |
| Cooch Behar | 98.8(10) | 99.3(7) | 53.3(9) | 75.7(6) | 8.6(18) | 28(5) | 66.8(11) | 79.2(5) |
| Dakshin Dinajpur | 100(1) | 99.7(3) | 47.5(12) | 79(3) | 20(6) | 22.8(13) | 67.3(10) | 74.3(10) |
| Darjeeling | 71.8(19) | 90.8(17) | 67(4) | 83(1) | 19.8(7) | 26.4(7) | 78(4) | 77(7) |
| Hoogly | 100(1) | 98.1(12) | 58.1(6) | 76.2(5) | 15.6(12) | 29.7(4) | 76.3(5) | 77.4(6) |
| Howrah | 99.5(9) | 99.5(4) | 61.3(5) | 72.9(8) | 15.9(10) | 23.5(12) | 78.4(3) | 80.5(4) |
| Jalpaiguri | 85.2(17) | 95.2(16) | 51(10) | 73.2(7) | 11.9(16) | 34(2) | 64.2(15) | 73.6(11) |
| Kolkata | 100(1) | 99.3(7) | 48.4(11) | 60.9(15) | 6.5(19) | 25.8(9) | 80.7(2) | 87.6(1) |
| Malda | 92.1(16) | 99(10) | 47.2(13) | 62(14) | 14.2(15) | 8.4(19) | 64.2(15) | 72.3(13) |
| Murshidabad | 100(1) | 99.1(9) | 54.1(7) | 69.7(11) | 32.2(2) | 17.4(18) | 66.1(13) | 67.6(17) |
| Nadia | 99.8(7) | 98.2(11) | 70.4(2) | 78.4(4) | 11.3(17) | 22.2(15) | 73.7(8) | 76.2(9) |
| North 24 Parganas | 100(1) | 99.5(4) | 70.3(3) | 80.4(2) | 18.7(8) | 31.4(3) | 82.9(1) | 85.5(3) |
| Paschim Mednipur | 96.9(14) | 95.5(15) | 43.8(15) | 58.3(16) | 32.3(1) | 20.9(17) | 70.7(9) | 70.9(14) |
| Purba Mednipur | 99.8(7) | 87.8(18) | 71.2(1) | 69.8(10) | 16.4(9) | 21.5(16) | 76.1(6) | 77(7) |
| Purulia | 82.4(18) | 87.6(19) | 12.1(19) | 29.2(19) | 15.7(11) | 25.1(10) | 48.1(19) | 61(19) |
| South 24 Parganas | 99.9(6) | 100(1) | 53.9(8) | 70.1(9) | 23.5(4) | 27.2(6) | 74.6(7) | 85.6(2) |
| Uttar Dinajpur | 97.9(11) | 99.8(2) | 33.3(16) | 63.8(13) | 15.2(13) | 22.4(14) | 51.1(18) | 65.4(18) |

Source: NFHS-4 & NFHS-5 and author calculation.

## IV. Result & Discussion

According to Table1: Nadia , North 24 Parganas, Kolkata , Purba Mednipur , Jalpaiguri districts are comparatively better than other districts and Purulia ,Birbhum ,Bankura , Maldah districts are lagging behind compare to other districts of West Bengal in terms of nutritional performance of children under 5 years as per NFHS-4 report. Because Nadia , North 24 Parganas, Kolkata , Darjeeling , Jalpaiguri , South 24 Parganas were occupied $1^{st}$, $2^{nd}$, $3^{rd}$ ,$4^{th}$ ,$5^{th}$ and $6^{th}$ rank respectively in terms of nutritional performance index . Purulia ,Birbhum ,Bankura , Maldah districts were occupied $19^{th}$,$18^{th}$,$17^{th}$ and $16^{th}$ rank respectively.

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[3] Because purulia district has the highest value in all nutritional indices.

[4] Currently(20.10.2022) there are 23 districts in West Bengal NFHS-IV , NFHS-V provide for 19 districts report . So, the data of the original district is represented by summing the data of the two newly formed districts, which have been broken up to form a new district.

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As per NFHS-5 report, Cooch Behar is at top followed by Nadia , North 24 Parganas, Kolkata , Darjeeling , Jalpaiguri , Howrah districts in terms of Nutritional performance of children . Purulia ,Birbhum , Paschim Mednipur , Bardhaman , Maldah, Bankura , districts were occupied 19th,18th,17th , 16th and 15th rank respectively.

Not much of a swap happened in NFHS-V compare to NFHS-IV in terms of nutritional performance of children under 5 years. Since Calculated't' value is less than "t Critical two-tail"( 1.149258425 < 2.10092204 ) . So, there is no significant between nutritional performances of Children below 5 years as per NFHS-IV & NFHS-V data (Table3).

But interestingly, Cooch Behar district was come first among the districts of West Bengal in terms of nutritional performance and Paschim Mednipur is at the followed by bottom position. But Percentage of NFSA beneficiaries in Cooch Behar district was comparatively less than Murshidabad , Darjeeling , Jalpaiguri , Purulia districts . The improvement of nutritional status of children of Cooch Behar is explained by Percentage of Households with a purified drinking-water source , Percentage of Households that acces a better sanitation infrastructure , Children aged 6 to 23 months getting sufficient diet who are breastfed , Percentage of Women who are literate . Because all these social infrastructures have made a considerable improvement as per NFHS-V data compare to NFHS-IV data . Among them, , Percentage of Children aged 6 to 23 months getting sufficient diet who are breastfed, Percentage of Women who are literate have improved considerably(Table2) in case of Cooch Behar district.

But in the case of Paschim Mednipur, the percentage of NFSA beneficiaries is less and it lags behind other districts in terms of other social infrastructural development in both NFHS-IV &NFHS-V . Therefore, it is necessary to provide food security to the people of the country, as well as developing social infrastructure is also important because only providing subsidized food products among the people cannot be said for sure that they will improve their nutrition. Because in Murshidabad district the percentage of NFSA beneficiaries is high but the quality of nutritional improvement of children is not significant positive rather than disappointing. Apart from this, the lagging districts have marginally improved over the improved districts after implementation of NFSA. As a result, the disparity between districts has decreased because variance among districts in terms of nutritional performance was declined from 0.05687 to 0.04791(Table3).

### Table 3 : Nutritional performance of children

| t-Test: Paired Two Sample for Means | | |
|---|---|---|
| | *NFHS-4* | *NFHS-5* |
| Mean | 0.612846338 | 0.568787563 |
| Variance | 0.05686527 | 0.047913978 |
| Observations | 19 | 19 |
| Pearson Correlation | 0.736184889 | |
| Hypothesized Mean Difference | 0 | |
| df | 18 | |
| t Stat | 1.149258425 | |
| P(T<=t) two-tail | 0.265491831 | |
| t Critical two-tail | 2.10092204 | |

Source: Author calculation.

### Table 4 : Percentage of NFSA beneficiaries in different district in West Bengal

| District | Total NFSA beneficiearies | Total beneficiaries(NFSA+Non-NFSA+Gen) | Percentage of NFSA beneficiaries |
|---|---|---|---|
| Bankura | 2478783 | 3634529 | 68.20(12) |
| Bardhaman | 4440358 | 7426818 | 59.78(15) |
| Birbhum | 2750420 | 3775813 | 72.84(5) |
| Cooch Behar | 2218695 | 3088788 | 71.83(7) |
| Dakshin Dinajpur | 1119619 | 1604235 | 69.79(10) |
| Darjeeling | 1214477 | 1625872 | 74.69(2) |
| Hoogly | 3005954 | 5446943 | 55.18(17) |

| | | | |
|---|---|---|---|
| Howrah | 2618818 | 4502091 | 58.16(16) |
| Jalpaiguri | 2719941 | 3718920 | 73.13(3) |
| Kolkata | 944461 | 3172011 | 29.77(19) |
| Malda | 2798203 | 4056951 | 68.97(11) |
| Murshidabad | 6036195 | 7919022 | 76.22(1) |
| Nadia | 3616029 | 5312681 | 68.06(13) |
| North 24 Parganas | 5392921 | 8942222 | 60.30(14) |
| Paschim Mednipur | 3211196 | 6133464 | 52.35(18) |
| Purba Mednipur | 3758748 | 5300749 | 70.90(8) |
| Purulia | 2177909 | 2982354 | 73.02(4) |
| South 24 Parganas | 5957768 | 8529621 | 69.84(9) |
| Uttar Dinajpur | 2193787 | 3040901 | 72.14(6) |

Source : (https://wbpds.wb.gov.in/) and Author calculation.

As per Table 4, Murshidabad is at the top followed by Darjeeling, Jalpaiguri, Purulia , Birbhum , Uttar Dinajpur districts in terms of Percentage of NFSA beneficiaries and Kolkata is at the bottom followed by Paschim Mednipur , Hoogly , Howrah . So it is clear that economically backward districts have benefited from the benefit of National Food Security Act-2013 and relatively economically advanced districts have benefited from the benefit of National Food Security Act though Paschim Mednipur is an exception. In launching the National Food Security Act, the Government of India also aimed to cover 75% of people in rural areas and 50% of people in urban areas. In this case, it appears to have been fulfilled to a large extent. Because the geographical location of the district where the beneficiaries of the NFSA are more benefited is the rural nature of the district. But despite the rural nature of Paschim Mednipur, Percentage of NFSA beneficiaries are less, so it is being treated as an exceptional case.

## V.    Conclusion

The National Food Security Act -2013 was basically launched by the Government of India to improve the nutritional status of children and women in rural and urban areas. Districts of West Bengal that were lagging behind in terms of nutritional performance showed marginal improvement in nutrition compared to districts that were marginally better in terms of nutritional performance before implementation of NFSA Act. Thus overall, the disparity in nutritional performance among districts in West Bengal has been narrowed to a small extent. But the nutritional status of children did not significantly improve because NFSA-2013 did not emphasize on the infrastructural development. It is true that people have received government goods at a lower subsidized price such as rice, wheat, sugar and other goods but they did not enjoy a better social infrastructure like improved drinking water, women literacy, sanitation facilities, adequate diet received by breast feeding child. So, The NFSA is tring to play a breakthrough role to improve children nutritional status. But it has not been able to shape up the government's objective regarding nutritional performance of Children below 5 years so far in the case of various districts of West Bengal. So, Government should improve infrastructural development through Public Private Partnership model in ahead of future development.

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