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محددات تباين الإنتاج بين محافظات مصر المختلفة لكل من الدجاج التسمين وبيض المائدة

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دجاج التسمين، دجاج

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داتا، النوة الصفواء

ترتبط صناعة الدواجن بالعديد من الصناعات الأخرى مثل صناعة الأعلاف الحيوانية و الأدوية و المستلزمات البيطرية، و نظراً لأن لحوم الدواجن تعتبر مصدراً رخيصاً للبروتين الحيواني وأكثر تفضيلاً لجميع فئات المجتمع المصري مقارنة بالمصادر الأخرى. ولهذه الأسباب تم الإعتماد عليه بصورة ملحوظة كمصدر للبروتين الحيواني، حيث بلغ إجمالي إستهلاك لحوم الدواجن في مصر نحو 103.2 ألف طن في عام 2019 منها حوالي 965 ألف طن دجاج تسمين تمثل نحو 94% من إجمالي إستهلاك الدواجن، ونحو 6.7 ألف طن لحم دجاج بلدي و بط و أوز و رومي و أرانب بنسبة 6% و تتلخص مشكلة البحث أنه بالرغم من ارتفاع معدلات الانتاج من الدجاج بالقدر الذي يكفي الاحتياجات الاستهلاكية للمواطن المصري، حيث تبلغ نسبة الاكتفاء الذاتي من بدارى التسمين، و الدجاج البيض بنحو 133%، 130% على الترتيب، إلا ان قطاع انتاج الدجاج فى مصر أكثر حساسية لاي تغيرات اقتصادية من شأنها أن تعكس على مستوى أسعارها فى الاسواق المصرية بكافة محافظاتهما، مما يؤدي إلى انخفاض معدلات الأستهلاك منها، الأمر الذي يستدعي الوقوف على محددات أنتاج الدجاج في مصر، كما أستهدف البحث دراسة محددات أنتاج الدجاج فى مصر، لكل من انتاج بيض المائدة و دجاج التسمين فى مصر و استخراج المروقات، حتى يمكن التعرف على العوامل المحددة لانتاج البيض و دجاج التسمين، وذلك فى أهم المحافظات المنتجة لها، بما تمثل معظم انتاج الجمهورية، و تعميم النتائج على جميع محافظات الجمهورية و كانت من أهم التوصيات فى البحث أنه لا بد من العمل على تنظيم درجات داخل العنابر فى مزارع انتاج السمين و بيض المائدة، حيث ان عامل درجة الحرارة له أثر كبير فى معدلات الأنتاج فى مصر. و لا بد من وضع سياسات انتاجية و إستراتيجية مناسبة من شأنها العمل على توفير الذرة الصفراء فى الأسواق المصرية، حيث لها تأثير كبير فى انتاج دجاج التسمين و بيض المائدة، تحته فى الأنواع الأخرى من المحاصيل التي تستخدم كعلف للدجاج فى مصر من نتائج ال pannel data يتضح أن المتغير الأساسي لمحددات إنتاج دجاج التسمين و بيض المائدة هو درجات الحرارة سواء العاليا أو الدنيا حيث يؤثر هذا المتغير على نحو 60% من الطاقات الإنتاجية و من ثم فإن المتغير الأخر الذي أظهرته التحليلات الحصائية كانت الأعلاف و بصفة خاصة الذرة الصفراء لذلك فإن إنتاجية دجاج التسمين أو بيض المائدة تكاد تكون غير منتظمة التأثير و من ثم يلاحظ تقلبات واسعة النطاق للأسعار و الأنتاج الأمر الذي يحتم على الدولة إتباع السياسات التي تتعلق بوسائل التكنولوجيا الحديثة لمواجهة تباين دلرجات الحرارة طوال العام و إرتفاعها إلى حدود عليا و حدود دنيا بعيدة عن المتوسطات المناسبة لهذه الدول.

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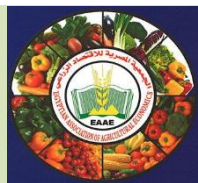
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Production Determinates of the Broilers and Layers Chicken in Egyptian Governorates

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ABSTRACT

The research problem was summarized follows: despite the high rates of production of chicken to the extent that is sufficient for the consumption needs of the Egyptian citizen, where the percentage of self-sufficiency of broilers, and laying hens about 133%, 130%, respectively, but the chicken production sector in Egypt is more sensitive to any economic changes that would be reflected in the level of prices in the Egyptian markets in all its governorates, which leads to a decrease in consumption rates, which calls for standing on the determinants of chicken production in Egypt

The most important findings are as follows: -

- (1) By studying the Statistical estimate of production of broilers and layers showed that the nature of the return on capacity was decreasing as production decreases less than the increase in the production elements. Which means that the temperature variable was almost the main variable of the product determinants of broilers in Egypt , since it caused many problems , and required effort to dealing with its level.
- (2) The Statistical estimations of the determinants of table eggs production in Egypt indicated that the importance of regulating and maintaing the temperature in dormitories to be within a particular thermal level as it is the most influential factor in the production determinants of table eggs production process.
- (3) There is a big difference in the average production of broilers and layers in the governorates Egypt.

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Introduction:

The poultry industry is associated with many other industries such as the animal feed industry, medicines and veterinary supplies because poultry meat is a cheap source of animal protein and more favorable to all segments of Egyptian society than other sources. For these reasons, it has been relied upon it significantly as a source of animal protein, . The total consumption of poultry meat in Egypt was about 1032 tons in 2019, of which about 965 tons of broiler chickens accounted for about 94% of total poultry consumption. And about 6.7 thousand tons of broilers, duck, , turkey, and about 6% rabbits.

The Research problem:

It is summarized that despite the high production rates of chicken not enough for the Egyptian consumers' needs the rate of self-sufficiency is 133%. 130% in both bio years respectively, However, the chicken production sector in Egypt is more sensitive to any economic changes that would be reflected in the level of its prices in the Egyptian markets in all its governorates, which leads to a decrease in consumption rates, which calls for identifying the determinants of chicken production in Egypt.

Research Objectives:

The research aims to study the determinants of chicken production, for both the production of layers and broilers in Egypt and elastic extraction, In order to be able to identify the determining factors for the production of eggs and broiler chickens, in the most important producing governorates, which represent most of the Republic's production, and generalizing the results to all governorates of Egypt.

Methods and Data Sources:

The panel data method has been used to estimate the determinants of the production of broiler chickens and table eggs in Egypt by using time series data for only two years for the producing governorates of broiler chickens equivalent to about 75.7% of the total production of broiler chickens in Egypt and two years for the governorates producing table eggs equivalent to about 79.8% of the total production of table eggs, thus combining time series data with cross-sectional data and thus addressing the problem of lack of data availability and modernity on the other hand.

Agricultural economic research usually relies on the use of two main types of statistical data First, preliminary data obtained from a sample drawn from the community of the phenomenon in question or called the inspection preview frame, These data are called panel data, and the second data obtained from indirect sources is called secondary data and this data is often from time series and may be quantitative data or geospatial data or metadata or a mixture of some or all of that and generally, the cross-section data does not take the time dimension into account. But most secondary data have a fundamental dimension of time, but rather a type of time series data. There are substantial differences between cross-section data and time-series data. Each has usefulness and a necessity to resort to. The third

type of data is mixed data that combine features of the above two species. The cross-section data consists of a set of statistical observations for many technological, productive or economic units in a single period at a viewing rate for each of these units. Statistical data for time series consists of a series of consecutive observations for a single technological, productive and economic unit at different times equal to the time difference.

The most important governorates produced broiler chickens have been selected for several reasons, including that they cover the main governorates

Sharkia, Behara, Ghrbia, Nubaria, Dakahlia, Ismilia, Qalyubiya, and Giza chicken production data, especially production accessories data, It also selected the most important governorates producing table eggs for many reasons, including that they cover key areas such as Sharkia, Giza, Nubaria, Dakahlia and Ghrbia Table egg production data, including table egg production requirements.

The research was based on secondary data published by the Ministry of Agriculture and Land Reclamation, Economic Affairs Sector, Central Directorate of Agricultural Economics, Livestock and Poultry Statistics, Annual Statistical of Central Public of Mobilization and Statistics, Various Issues, Annual Publication of Crop and Plant Production, Central Public Mobilization and Statistics.

Research Results:

A: Relative distribution in chicken-producing governorates in terms of actual production.

1. Broilers:

Table 1of data indicate that Sharkia Governorate was ranked the first of Egypt's governorates in terms of the actual production of broiler chickens with an annual average of 109.4 million birds, representing about 16.1% of total actual governorate production in Egypt during the period (2016-2019), followed by Bihira Governorate in second place with an annual average of 67.5 million birds representing 9.94%, Followed by Ghrbia Governorate with an annual average of 67.1 million birds at 9.88%, Nubariyah Governorate comes in fourth place in the actual production of broiler chickens in Egypt with an annual average of 63.3 million birds at 9.33%. Followed by Dakahlia Governorate, Ismilia, Kalyubia and Giza fifth, sixth, seventh and eighth places respectively with an average of 6351. 6 , 50. 5, 41.4 million, respectively, by 9.28 , 7. 6 , 7. 4 and 6.1% respectively.

Table (1) Relative importance of the most important governorates producing broilers in terms of total Egyptian production (million birds)

Governorates	2016	2017	2018	2019	average	Relative importance (%)
Sharkia	105.2	111.0	114.3	107.0	109.4	16.1
Behera	69.5	71.4	61.6	67.5	67.5	9.94
Gharbia	50.3	55.3	119.6	43.0	67.1	9.88
Noubaria	54.2	57.4	75.3	66.5	63.3	9.33
Dakahlia	62.3	62.3	64.7	62.7	63.0	9.28
Ismailia	18.1	18.2	17.9	152.3	51.6	7.6
Kalyoubia	47.3	50.1	51.5	53.2	50.5	7.4
Giza	13.1	13.4	10.6	11.4	41.4	6.1
Other governorates	156.9	163.9	174.6	164.9	165.1	24.3
Total	577.0	720.1	690.2	728.5	678.9	100.0

Source: Compiled and calculated from data of the Ministry of Agriculture and Land Reclamation, Economic Affairs Sector, Central Department of Agricultural Economics, Livestock and poultry Surveys.

2. Layers chicken:

Data table 2 indicates that Sharkia governorate ranked first of Egypt's governorates in terms of the actual production of eggs tables with an annual average of 8.4 million birds, up to 30.4% of total Egypation production during the period (2016-2019), followed by Giza Governorate in second place with an annual average of 4 million birds of representing 14.4%, It is followed by the Nubaria governorate with an annual average of 2.6 million birds at 9.4% The governorate of Dakahlia then came fourth in the actual production of table egg chicken in Egypt with an annual average of 2.3 million birds of 8.2%. It is followed by Ghrbia Governorate in fifth place with an average of 1.9 million birds at 7.1%.

Table (2) Relative importance of the governorates producing Layers in terms of total Egyptian production (million birds)

Governorates	2016	2017	2018	2019	average	Relative importance (%)
Sharkia	7.7	7.9	9.0	8.8	8.4	30.4
Giza	3.7	3.6	3.5	5.1	4.0	14.4
Noubaria	2.4	2.5	2.7	2.8	2.6	9.4
Dakahlia	2.3	2.3	2.2	2.3	2.3	8.2
Gharbia	2.3	2.0	1.8	1.6	1.9	7.1
Other governorates	8.1	8.3	8.6	8.5	8.4	30.5
Total	26.5	26.5	27.8	29.0	27.5	100.0

Source: Compiled and calculated from data of the Ministry of Agriculture and Land Reclamation, Economic Affairs Sector, Central Department of Agricultural Economics, Livestock and poultry Surveys.

3: Table Eggs:

Data of table 3 indicates that Sharkia governorate ranked first among Egypt's governorates in terms of the actual production of eggs at an annual average of 1975.2 million eggs at about 28.6% of the total actual production in Egypt during the 2016-2019 period, followed by Giza governorate at a second annual average of 1069. One million eggs, about 15.5%, followed by the Nubaria governorate, with an annual average of 691 million eggs, at 10%. Dakahlia Governorate then came in fourth place for the actual production of table eggs in Egypt with an annual average of 501.5 million eggs at 7.3% Followed by the lagoon governorate in fifth place with an average of 466.4 million eggs at 6.7%, followed by the governorates of Western and Kulyubia at sixth and seventh with an average of 435.2 million, 326.9 million eggs at 6.6%, 5.2% respectively.

Table (3) Relative importance of the most important governorates producing table eggs in terms of total Egyptian production (million eggs)

Governorates	2016	2017	2018	2019	average	Relative importance (%)
Sharkia	1691.1	1792.8	1793.3	2623.6	1975.2	28.6
Giza	771.3	868.2	769.0	1867.4	1069.0	15.5
Noubaria	592.1	632.3	613.4	926.4	691.0	10.0
Dakahlia	479.4	471.6	497.0	558.2	501.5	7.3
Behera	403.4	410.4	461.1	590.7	466.4	6.7
Gharbia	488.9	422.7	391.7	509.7	453.2	6.6
Kalyoubia	310.9	308.9	348.6	483.2	362.9	5.2
Other governorates	1194.5	1251.1	1231.5	1905.5	1395.6	20.2
Total	5931.7	6157.9	6105.5	9464.5	6914.9	100.0

Source: Compiled and calculated from data of the Ministry of Agriculture and Land Reclamation, Economic Affairs Sector, Central Department of Agricultural Economics, Livestock and poultry Surveys.

B: Statistical model of the determinants of broilers and layers chicken production in Egypt.

Data results in a table (4) demonstrated the overall production elasticity of the production elements in an equation of about 1.06, which means that the return on capacity is increasing as production increases more than the production elements. If the temperature variable of about 0.7 is not added, the nature of the return on capacity is decreasing as production decreases less than the increase in the production elements. This means that the temperature variable is almost the main variable of the determinants of the production of **broilers** in Egypt, which causes many problems, and requires working to meet it both at high and low levels. The limitation factor for the estimated relationship was about 92%, This reflects the changes in production, which are responsible for the corresponding changes in the production elements, and by estimating the limit production of the yellow corn. (x1) was about 0.1 million birds, the average output was about 0.5 million birds, while production

was the limit of production capacity (s1) of about 0.5 million birds, and the average output was estimated at 1.03 million birds.

2-Statistical model of the determinants of table eggs production in Egypt:

Table (5) explains the total productive elasticity of the production input equivalent to the production determinants of eggs in Egypt, which amounted to about 2.13 In the event that the temperature variable was not added, it was about 1.17 in the nature of the capacity yield in two increasing cases where production is increasing more than the production input, The limitation factor for the estimated relationship was about 87% And this reflects the changes in production that are responsible for the corresponding changes in the productive elements, It is the same as what has been achieved in the importance of variable temperature per second on the production of table eggs and what indicates the importance of working to regulate and maintain the temperature in dormitories to be within a particular thermal field as it is the most influential in the production determinants of table eggs, and by estimating production of the number of farms (x3) was about 0.01 million eggs, average production was about 0.03 million eggs, while the production capped the quantity of fodder concentrated (x4) About 0.29 million eggs, average production was about 0.16 million eggs, while production was the limit of production capacity (s2) About 1.39 million eggs, average production is estimated at 0.7 million eggs.

Table (4) Statistical estimate of the determinants of broiler production and Layers chicken in Egypt

N	Type	The equation	R ²	F
1	Broiler s	$\ln Y1 = 1.2 + .2 \ln x1 + 1.06 \ln x2 + .5 \ln S1$ (1.7) (1.9)* (2.2)*	.92	(56)*
2	layers chicken	$\ln Y2 =$ (3.2)* (1.8)* (6.5)* (6.4)*	.87	(4.8)*

Source: - Collected and calculated from the data of the Ministry of Agriculture and Land Reclamation, the Economic Affairs Sector, the Central Administration of Agricultural Economy, stats of livestock and poultry - various volumes.

-Temperature degrees were collected and calculated from the statistical yearbook, The Central Agency for Public Mobilization and Statistics - various numbers.

- Annual Bulletin for the Statistics of Crop Areas and Plant Production, The Central Agency for Public Mobilization and Statistics - Various issues.

Y1: Actual capacity for the production of broilers.

Y2: Actual capacity for producing layers chicken.

X1: Yellow corn production in Egypt.

X 2 Maximum temperature degree for April.

X 3: Number of farms in the governorates.

X 4: Concentrated feed quantity.

X 5: Minimum temperatures degree for October.

S1: The full capacity of the chicken farms of broilers bars in the governorates represents capacity.

S 2: Actual capacity of table egg chicken farms in governorates and represents capacity.

** Significant level of the regression coefficients at 0.01, * Significant level of regression coefficients at 0.05. R²: Modified determination coefficient.

Table (5) Elasticity estimates, average and marginal production according to the production inputs for broilers in Egypt during the period (2017:2019)

	Yellow corn production	temperature	full capacity	Total Elasticity with temperature variable	Total Elasticity without temperature variable
Elasticity (E)	0.2	1.06	0.5	1.76	0.7
Average Production (AP)	0.5	-	1.03	-	-
Marginal Production (MP)	0.1	-	0.5	-	-

Source: Compiled and calculated from table (4).

Table (6) Elasticity estimates, average and marginal production according to the production inputs for table eggs in Egypt during the period (2018:2019)

	No. of Farms	Concentrated feed	temperature	Actual capacity	Total Elasticity with temperature variable	Total Elasticity without temperature variable
Elasticity (E)	0.34	0.3	0.96	0.8	2.4	1.44
Average Production (AP)	0.03	0.16	-	1.7	-	-
Marginal Production (MP)	0.01	0.05	-	1.36	-	-

Source: Compiled and calculated from table (4).

-The difference in the average production of broilers and table eggs in the governorates under study:

A - Broilers

Previous results can be used to justify the difference between the average production of **broilers** in Sharkia governorate and the rest of the governorates represented by the study sample Where the model results were used to estimate the degree of impact of the variables studied in the presence of the difference in the average production of **broilers** between these governorates, The image of the numerical quantitative variables has been converted into a percentage Statistical model of the full capacity average (average full capacity /full capacity),% for an average production of **broilers** (Average production of **broilers** (actual capacity)/Total production of **broilers** (total actual capacity).

Table (7) shows that the difference between the average production of broilers in Eastern and the average production of broilers in Behera was represented 40.09 million birds and that this difference is attributed to the following thoughtful determinants: 29% attributable to the percentage of full average capacity, -6.9% attributable to the average corn output, 7.5% attributable to the percentage of average temperatures. In general, table (7) shows that the percentage favorable to yellow corn production is the primary responsibility of the

determinants of the difference between the average production of broilers in the east and the average production of broilers in the rest of the governorates shown in the table, followed by the percentage of full capacity and then temperatures.

B –Layers Chicken:

Previous results can be used to justify the difference between average layers chicken production in Sharkia governorate and the rest of the governorates represented by the study sample where the model results were used to estimate the degree of impact of the variables studied in the presence of the difference in the average production of table eggs between these governorates, The image of the numerical quantitative variables was converted into a percentage Statistical model of the average production of table eggs (average table egg/total table egg production),% for average actual capacity of table egg chicken (actual average capacity of table egg chicken/full actual capacity of table egg chicken).

Table (8) shows that the difference between the average production of table eggs in the east and the average table eggs in Behera was about 1235 million eggs and that this difference is attributable to the following thoughtful determinants: 35.7% attributable to the percentage of the actual average capacity, 78.1% attributable to the average number of farms, 50% attributable to the average amount of fodder concentrated, -5.8% attributable to the percentage of average temperatures. In general, table 8 shows that the percentage of farms is the primary responsibility of determinant of the difference between the average production of table eggs in Eastern and the average production of broiler in the rest of the governorates shown in the table, followed by the percentage of actual capacity, concentrated fodder and then temperatures.

Table (7): The ratio of what is attributed to the total of the studied determinants of the difference between the average production of broiler chickens in Al Sharkia and the average production of broilers in the governorate under study

Governorates	The difference between the average production of broilers In Shrkia and the average production of broiler chickens in different governorates	Percentage of difference is attributed to the following factors:		
		Full capacity	Yellow corn production	temperature
Behera	46.09	29.0	-6.9	7.5
Gharbia	29.33	9.6	46.6	2.5
Noubaria	39.74	-1.7	30.7	8.1
Dakahlia	46.96	30.5	18.4	3.9
Ismailia	25.54	67.5	76.7	3.6
Kalyoubia	58.29	41.8	68.5	0.4
Giza	99.64	73.8	84.4	1.0

Source: Compiled and calculated from table (4)

Table (8): The percentage of what is attributed to the total of the studied determinants of the difference between the average production of table eggs in the Shark Province and the average production of table eggs in the different governorates

Governorates	The difference between the average production of broilers In Shrkia and the average production of broiler chickens in different governorates	Percentage of difference attributable to the following factors:			
		Actual capacity	No. of farms	Concentrate d feed	temperature
Giza	1235.0	35.7	78.1	50.0	-5.8
Noubaria	1679.2	52.7	85.8	2.9	4.6
Dakahlia	1894.3	58.4	65.2	20.6	-8.1

Source: Compiled and calculated from table (4).

Recommendations

According to the previous results, the research concluded with several important recommendations that can be summarized as follows:

- 1) It is necessary to control the temperature degrees inside the farms for production of broilers and table eggs, as the temperature factor has a significant impact on the production rates in Egypt.
- 2 -From the results of the panel data models , it is clear that the fundamental determinant of the production of broilers and layers chicken is the temperature degrees. This variable affects about 60% of the productive capacities. Thus, the other variable shown by statistical analyses was feed, especially yellow corn, so the productivity of broilers or table eggs is almost irregular. And then notices wide fluctuations in prices and production, which makes it imperative for the state to follow policies related to modern technology means to face the variation in temperature throughout the year and its rise to upper and lower limits far from the appropriate averages for these countries.

References

Arabic References:

1. Ibrahim Hassan Ibrahim (Doctor) and Others, Analysis Study of broilers Industry - Case Study in Ismalia and Shrkia Governorate, 15th Conference of Agricultural Economists 17-18 October 2007.
2. Jehan Mohamed Abb Fattah Al-Jizawi, Economics of Production and Marketing of broilers in Egypt with Interest in the Role of Cooperatives, Master's Thesis, Faculty of Agriculture, Ain Shams University, 2005.
3. Fatma Ahmed Shafiq (PhD), Economic Study of the Current Situation of the Poultry Industry in Egypt in the Context of the Avian Influenza Crisis, Egyptian Journal of Agricultural Economics, 2006.
4. The Central Agency for Public Mobilization and Statistics, from the Statistical Yearbook, has different versions.

5. Central Agency for Public Mobilization and Statistics, Annual Bulletin for the Statistics of Crop Areas and Plant Production, different versions.
6. Mohammed Badir al-Iraqi, Economic Study of the Potential of Arab Agricultural Integration in the Field of Grain Production, Master's Thesis, Ain Shams University, Faculty of Agriculture, Department of Agricultural Economics, 1978, p. 280.
7. Mohammed Kamel Rayhan (Doctor), Quantitative Methods in Economics (Practical Applications), Arab Knowledge Bureau House, first edition, 2021.
8. Mahmoud ezzat Abdul Latif, Economic Study of Dairy Production and Consumption in Egypt, Doctoral thesis, Ain Shams University, Faculty of Agriculture, Department of Agricultural Economics, 2012, p. 261.
9. Mona Kamal Riad (Doctor), Statistical Estimate of Production and Cereal Costs in the Arab World, (Individual), Journal of the Federation of Arab Universities of Agricultural Sciences, Faculty of Agriculture, Ain Shams University, Vol. 25, No. 1, March 2017.
10. Wesam Maher Khamis et al., Determinants of Grain Consumption in Egypt and Some Countries in the Middle East, Journal of the Federation of Arab Universities of Agricultural Sciences, Ain Shams University, Vol. (26), No. (2b) 1328-1317, 2018.
11. Ministry of Agriculture and Land Reclamation, Economic Affairs Sector, Central Department of Agricultural Economics, Livestock and check-ins Surveys - different versions.

English References:

1. Food And Agriculture Organization (FAO) , 2013.1. statistical year Book ,world food and agriculture,p158:161
 2. United Nations Development Programme, 2011. Sustainability and Equity: A Better Future for All, Human Development Report, United Nations Development, Human Development Report Office, New York, USA,pp127:130.
 3. United Nations Development Programme, 2014. Sustaining Human Progress: Reducing Vulnerabilities and Building Resilience, Human Development Report, United Nations Development, Human Development Report Office, New York, USA,pp160:163.
 4. United Nations Development Programme, 2013. The Rise of the South: Human Progress in a Diverse World, Human Development Report, United Nations Development, Human Development Report Office, New York, USA,pp144:147.
- World Bank , 2011, 2012, 2013 ..Database. Wor