**A REPORT OF THE STUDENT INDUSTRIAL WORK EXPERIENCE SCHEME carried out at the MINISTRY OF ECONOMIC DEVELOPMENT and Ibom Deep Seaport, UYO, AKWAIBOM STATE.**

**PERIOD OF ATTACHMENT OCTOBER 2021 – JANUARY 2022**

**BY**

**…**

**SUBMITTED TO**

**DEPARTMENT OF INDUSTRIAL MATHEMATICS**

**FACULTY OF PHYSICAL SCIENCES**

**NNAMDI AZIKIWE UNIVERSITY, AWKA.**

**BEING A REPORT SUBMITTED IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE STUDENTS INDUSTRIAL WORK EXPERIENCE SCHEME**

**DEDICATION**

This report is dedicated to the almighty God, who is the reservoir of knowledge, for giving me the strength and grace to carry out my Industrial Training (IT) exercise and to my loving and caring family members.

**ACKNOWLEDGEMENT**

With a joyous heart filled with praise and gratitude, I thank the almighty God who was with me throughout my Industrial Training, without whom this work would not have been a success.

I gratefully acknowledge my parents and siblings for their support, advice, encouragement, care, prayers and love, which has kept me going.

I thank all my lecturers for the great job they have been doing in teaching and tutoring me.

I also wish to express my profound gratitude to the staff of the department of Price Statistics in Ministry of Economic Development and Ibom Deep Seaport, Uyo and in a special way my supervisor at the Ministry of Economic Development and Ibom Deep Seaport, Mr Esa Nkereuwem Solomon, the Head of Statistics department for their support, guidance, knowledge and experiences.

**ABSTRACT**

This technical report depicts and presents the experience acquired at the Ministry of Economic Development and Ibom Deep Seaport, Uyo as a SIWES student. The report discusses the working experience gained during my Industrial Training where I served with the staff of the department of price statistics. The statistical package used in this report is Microsoft Excel. The type of data used is secondary data and statistical tools are regression and correlation. The aim and objective of the analysis is to determine and forecast the Consumer Price Index (CPI) for food in the state of Akwaibom and to deduce the nature of relationship between prices in the different senatorial district.

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**CHAPTER ONE**

**1.1 BRIEF HISTORY OF SIWES**

Student Industrial Work Experience Scheme (SIWES) was established by the Industrial Training Fund (ITF) in the year 1973 to serve the problem if lack of adequate practical skills preparatory for employment in industries by Nigeria tertiary institution graduates. The scheme educated students on industrial based skills essential for a smooth transition from classroom to the world of work. Student s of tertiary institution is given the opportunity of being familiarized and exposed to the needed experience in handling machinery and equipment which are usually not available in the educational institutions. Partaking in SIWES industrial training has become a crucial pre-condition for the award of diploma and degree certificates in specific disciplines in most institution of higher learning in Nigeria in line with the government education policies. The operators are: the ITF, the coordinating agencies National University Commission (NUC), National Commission for College of Education (NCCE) and National Board for Technical Education (NBTE), employer of labor and various institutions.

Consequently, SIWES program was introduces into the curriculum of tertiary institutions in the country as far back as 1974 with 748 students from 11 institutions of higher learning. However, the scheme has over the years contributed immensely to the personal development and motivation of students to be able to understand the important connection between the taught and learnt content of their academic programs and what knowledge and skill will be expected of them on professional practice after graduation.

Meanwhile, the need for students to possess adequate on SIWES is further underlined by the fact that SIWES is a course of study that attracts 2, 4 and 6 credit units in College of Education, Polytechnics and Universities respectively, depending on the need attached to it by the institutions.

The availability of required information therefore, enhances the capacity of students to work for and earn the credit units allocated for SIWES, rather than wobbling through the training intervention because of lack of pertinent information.

**1.2 ADVENT OF SIWES**

In recognition of the short course and weakness in the formation of set graduates, particularly with respect to acquisition of relevant production skills, the industrial training fund established the students Industrial Work Experience Scheme (SIWES) in 1973. The Scheme was designed to expose students to the industrial environment and enable them develop occupational experiences so that they can readily contribute their quota to national economic and technological development after graduation.

Consequently, SIWES is a planned ad structured program based on stated and specific career objectives, which are geared toward developing the occupational competencies of participants.

**1.3 OBJECTIVES OF SIWES**

**The objectives of the scheme include:**

1. Provide avenue for students to acquire industrial skills for experience during their course of study.

2. Expose students to work methods and techniques in handling equipment and machineries that may not be available in the university.

3. Prepare students for industrial work situation they are likely to meet after graduation.

4. Provide student with opportunities to apply their educational knowledge in real work situation, thereby bridging the gap between theories and practice.

5. To make the transmission from schooling to the world of work easier through enhancing student contact for later job placement.

**1.4 VISION**

The vision of SIWES is to prepare students to contribute to the productivity of their nation. Students’ Industrial Work Experience Scheme – a skill training and competence building intervention for students of tertiary institutions – has the potentials of increasing the scope and variety of technical skills in the common pool or general stock available for the industrial development of Nigeria.

Therefore, harnessing the potentials of SIWES for industrial, technological and economic development, however, demands that the three major SIWES stakeholders or actors (students, institutions and employers) be empowered to fully participate and cooperate with one another in implanting the scheme. While such cooperation requires that the three actors share the same information on all basic aspects of SIWES.

**1.5 BENEFITS OF INDUSTRIAL TRAINING TO STUDENTS**

The major benefit of participating in industrial training are the skills and competencies acquired during the training This is because the knowledge and skill acquired through training by students are internalized, and it becomes relevant, during job performances or functions.

**Other benefits include:**

Opportunity for students to blend theoretical knowledge acquired in the classroom with practical hand-on application of knowledge required to perform industry.

1. Opportunity for students to blend theoretical knowledge acquired in the classroom with practical hand-on application of knowledge required to perform in the industry.
2. Exposes students to the working environment, i.e. to enable them see how their professions are organized in practice.
3. Prepares students to contribute to the productivity of their employers and nation’s economy.
4. Provision of an enabling environment where students can develop and enhance personal attributes such as critical thinking, creativity, initiative, resourcefulness, leadership, time management, interpersonal skills.
5. Prepares students for employment and makes transition from school to the work environment easier after graduation.

**CHAPTER TWO**

**2.1 BRIEF HISTORY OF MINISTRY OF ECONOMIC DEVELOPMENT AND IBOM DEEP SEAPORT**

The Ministry was created as Ministry of Economic Development and Project Monitoring on 3rd July, 2002, from the then Ministry of Finance and Economic Development.

In August 2003, it was renamed Ministry of Economic Development and in 2016 was again renamed Ministry of Economic Development, Labour and Manpower Planning. Today, the Ministry is known as Ministry of Economic Development and Ibom Deep Seaport.

The strategic role of the Ministry of Economic Development in actualization of the Akwa Ibom State development objectives makes it expedient to develop strategic plans to guide the development process and engender positive and efficient use of resources.

It also ensures that the relevant role players maintain discipline in the development and management of an emerging economy of Akwa Ibom State in the South-South geopolitical zone of Nigeria, strategically located along the coast lines of the Gulf of Guinea within the West African Sub-region.

**2.2 VISION STATEMENT OF THE MINISTRY**

To be the most efficient Planning institution that guides the growth and development of the state’s economy and to be among the leading economies in the country.

**2.3 MISSION STATEMENT OF THE MINISTRY**

To pro-actively determine and efficiently advise on matters relating to the development of Akwa Ibom State and overall management of the economy for positive growth and to ensure that plans and policies are properly implemented by all relevant stakeholders.

**2.4 OBJECTIVES OF MINISTRY OF ECONOMIC DEVELOPMENT AND IBOM DEEP SEAPORT**

**a)** It develops strategic plans to guide the development process and engender positive and efficient use of resources.

**b)** It also ensures that the relevant role players maintain discipline in the development and management of an emerging economy of Akwa Ibom State

**2.5 DUTIES OF THE MINISTRY**

**a)** Development of economic policies and programs.

**b)** Coordination of development partners, donor agencies and externally funded programs and projects.

**c)** Operations review and monitoring of management performance in the service.

**d)** Monitoring and evaluation of government programs and projects.

**e)** Economic intelligence, survey, feasibility studies and appraisals.

**f)** Liaising with the head of civil service and other relevant government agencies to set performance standards for efficient, high quality service delivery

**g)** Conduct of socio-economic survey, data gathering, collation, analysis and dissemination managing of data on all aspects of the state economy

**h)** Organization of Akwa Ibom state economic summit

**i)** Inter-governmental cooperation on economic matters

**2.6 WORK EXPERIENCE**

I worked in the department of price statistics under Mr Ese Nkereuwem Solomon. I learnt how to sort, compile and clean data. I was trained in the use of MS-Excel and its data imputation, analysis, presentation and interpretation.

Apart from the usual work experiences, I have also learnt some good work morals such as:

1. Essence of punctuality at work
2. Office code of conduct
3. Proper management of the human and material resources
4. Inter-relationships among workers/employees
5. The essence of working as a team for a common goal(s)

**ORGANIZARIONAL STRUCTURE OF MNISTRY OF ECONOMIC DEVELOPMENT AND IBOM DEEP SEA PORT**

**CHAPTER THREE**

**3.1 DATA COLLECTION**

The data used in this report is of secondary sources. Prices of goods in various local government in AkwaIbom State gotten from the department of Price Statistics under the Ministry of Economic Development, Uyo.

**3.2 AIMS AND OBJECTIVE OF THIS ANALYSIS**

i) To determine how the consumer price index (CPI) for food changes quarterly, using Index numbers

ii) To forecast the consumer price index (CPI) for food in the first and second quarter of the year 2022, using regression analysis

iii) To determine the nature of the relationship of prices of food stuff in the different senatorial districts, using correlation

**3.3** **METHODOLOGY**

The statistical techniques used in analyzing and forecasting are **SIMPLE INDEX NUMBER,** **SIMPLE LINEAR REGRESSION AND CORRELATION.**

**Index Numbers**

Index numbers are statistical measures that are used in business and economics to quantify changes in various fields and variables over time.

Price Index : Measure changes in price over a specified period of time. It is basically the ratio of the price of a certain number of commodities at the present year as against base year.

* Simple Index Numbers

**Regression**

This is a statistical tool used to determine the mathematical relationship that exists between two or more variables.

* Simple linear regression

This shows the mathematical relationship that exists between two variables, that is the dependent variable (Y) and the independent variable (X). The regression model is

Yi  = Dependent variable

Β0 = Regression constant/intercept

Β1 = Coefficient of independent variable x1

Xi = Independent variables observed in the data

ei = Error term/unexplained variation

**Correlation analysis**

It shows the nature of the relationship that exists between two variables. A positive correlation shows the degree to which one variable increases as the other variable increases. A negative correlation shows the degree to which one variable decreases as the other variable increases.

A commonly used correlation coefficient is the Pearson correlation coefficient.

-1 ≤ ρ ≤ 1**, ρ is correlation coefficient**

**CHAPTER 4**

**DATA PRESENTATION AND ANALYSIS**

**4.1 DATA PRESENTATION**

**Table 1: Prices of selected food stuff in Akwa Ibom State grouped quarterly from the year 2020 - 2021**

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
| **Commodity** | **1st quarter 2020** | **2nd quarter 2020** | **3rd quarter 2020** | **4th quarter 2020** | **1st quarter 2021** | **2nd quarter 2021** | **3rd quarter 2021** | **4th quarter 2021** |
| Orange Ripe | 178.55 | 190.55 | 202.55 | 214.55 | 226.55 | 238.55 | 250.55 | 262.55 |
| Mango Ripe | 262.11 | 274.11 | 286.11 | 298.11 | 310.11 | 322.11 | 334.11 | 346.11 |
| Avocado Pear Ripe | 289.56 | 301.56 | 313.56 | 325.56 | 337.56 | 349.56 | 361.56 | 373.56 |
| Paw Paw Ripe | 115.36 | 127.36 | 139.36 | 151.36 | 163.36 | 175.36 | 187.36 | 199.36 |
| Pineapple Ripe | 209.66 | 221.66 | 233.66 | 245.66 | 257.66 | 269.66 | 281.66 | 293.66 |
| Banana Ripe | 269.33 | 281.33 | 293.33 | 305.33 | 317.33 | 329.33 | 341.33 | 353.33 |
| Tomatoes Frest | 385.25 | 397.25 | 409.25 | 421.25 | 433.25 | 445.25 | 457.25 | 469.25 |
| Onions Fresh | 321.39 | 333.39 | 345.39 | 357.39 | 369.39 | 381.39 | 393.39 | 405.39 |
| Okro Fresh | 403.22 | 415.22 | 427.22 | 439.22 | 451.22 | 463.22 | 475.22 | 487.22 |
| Water Leaf | 210.65 | 222.65 | 234.65 | 246.65 | 258.65 | 270.65 | 282.65 | 294.65 |
| Afang (Okasi) | 634.56 | 646.56 | 658.56 | 670.56 | 682.56 | 694.56 | 706.56 | 718.56 |
| Fluted Pumpkin | 316.24 | 328.24 | 340.24 | 352.24 | 364.24 | 376.24 | 388.24 | 400.24 |
| Bitter Leaf | 195.88 | 207.88 | 219.88 | 231.88 | 243.88 | 255.88 | 267.88 | 279.88 |
| Mbukpap Uyo(Ogbono) | 828.15 | 840.15 | 852.15 | 864.15 | 876.15 | 888.15 | 900.15 | 912.15 |
| Melon Shelled | 139.56 | 151.56 | 163.56 | 175.56 | 187.56 | 199.56 | 211.56 | 223.56 |
| Pepper Dried | 118.90 | 130.90 | 142.90 | 154.90 | 166.90 | 178.90 | 190.90 | 202.90 |
| Pepper Fresh | 52.06 | 64.06 | 76.06 | 88.06 | 100.06 | 112.06 | 124.06 | 136.06 |
| Garri Yellow | 22.92 | 34.92 | 46.92 | 58.92 | 70.92 | 82.92 | 94.92 | 106.92 |
| Garri White | 24.34 | 36.34 | 48.34 | 60.34 | 72.34 | 84.34 | 96.34 | 108.34 |
| Rice Local | 76.86 | 88.86 | 100.86 | 112.86 | 124.86 | 136.86 | 148.86 | 160.86 |
| Rice Cap rice | 98.30 | 110.30 | 122.30 | 134.30 | 146.30 | 158.30 | 170.30 | 182.30 |
| Rice High Quality Nig. Rice | 95.92 | 107.92 | 119.92 | 131.92 | 143.92 | 155.92 | 167.92 | 179.92 |
| Maize White | 66.31 | 78.31 | 90.31 | 102.31 | 114.31 | 126.31 | 138.31 | 150.31 |
| Maize Yellow | 65.50 | 77.50 | 89.50 | 101.50 | 113.50 | 125.50 | 137.50 | 149.50 |
| Guinea Corn | 65.04 | 77.04 | 89.04 | 101.04 | 113.04 | 125.04 | 137.04 | 149.04 |
| Yam | 213.60 | 225.60 | 237.60 | 249.60 | 261.60 | 273.60 | 285.60 | 297.60 |
| Cocoyam (White) | 169.03 | 181.03 | 193.03 | 205.03 | 217.03 | 229.03 | 241.03 | 253.03 |
| Cassava | 74.36 | 86.36 | 98.36 | 110.36 | 122.36 | 134.36 | 146.36 | 158.36 |
| Irish Potato | 360.40 | 372.40 | 384.40 | 396.40 | 408.40 | 420.40 | 432.40 | 444.40 |
| Sweet Potato | 155.56 | 167.56 | 179.56 | 191.56 | 203.56 | 215.56 | 227.56 | 239.56 |
| Plantain Ripe | 213.33 | 225.33 | 237.33 | 249.33 | 261.33 | 273.33 | 285.33 | 297.33 |
| Plantain Unripe | 189.68 | 201.68 | 213.68 | 225.68 | 237.68 | 249.68 | 261.68 | 273.68 |
| Beans Brown | 95.14 | 107.14 | 119.14 | 131.14 | 143.14 | 155.14 | 167.14 | 179.14 |
| Beans White | 85.77 | 97.77 | 109.77 | 121.77 | 133.77 | 145.77 | 157.77 | 169.77 |
| Soya-Beans | 68.43 | 80.43 | 92.43 | 104.43 | 116.43 | 128.43 | 140.43 | 152.43 |
| Ground-nut Shelled | 76.90 | 88.90 | 100.90 | 112.90 | 124.90 | 136.90 | 148.90 | 160.90 |
| Biscuit | 245.84 | 257.84 | 269.84 | 281.84 | 293.84 | 305.84 | 317.84 | 329.84 |
| Bread | 317.00 | 329.00 | 341.00 | 353.00 | 365.00 | 377.00 | 389.00 | 401.00 |
| Wheat Bread | 537.53 | 549.53 | 561.53 | 573.53 | 585.53 | 597.53 | 609.53 | 621.53 |
| Cassava Bread | 216.67 | 228.67 | 240.67 | 252.67 | 264.67 | 276.67 | 288.67 | 300.67 |
| Corn Flakes | 650.40 | 662.40 | 674.40 | 686.40 | 698.40 | 710.40 | 722.40 | 734.40 |
| Oats | 673.07 | 685.07 | 697.07 | 709.07 | 721.07 | 733.07 | 745.07 | 757.07 |
| Custard | 260.68 | 272.68 | 284.68 | 296.68 | 308.68 | 320.68 | 332.68 | 344.68 |
| Cerelac | 1459.06 | 1471.06 | 1483.06 | 1495.06 | 1507.06 | 1519.06 | 1531.06 | 1543.06 |
| Semovita | 2844.26 | 2856.26 | 2868.26 | 2880.26 | 2892.26 | 2904.26 | 2916.26 | 2928.26 |
| Curry | 158.49 | 170.49 | 182.49 | 194.49 | 206.49 | 218.49 | 230.49 | 242.49 |
| Thyme | 156.01 | 168.01 | 180.01 | 192.01 | 204.01 | 216.01 | 228.01 | 240.01 |
| Coca Cola Coke | 97.54 | 109.54 | 121.54 | 133.54 | 145.54 | 157.54 | 169.54 | 181.54 |
| 7 Up Pepsi | 105.58 | 117.58 | 129.58 | 141.58 | 153.58 | 165.58 | 177.58 | 189.58 |
| Malta Guiness | 151.23 | 163.23 | 175.23 | 187.23 | 199.23 | 211.23 | 223.23 | 235.23 |
| Malta Champ Malta | 148.88 | 160.88 | 172.88 | 184.88 | 196.88 | 208.88 | 220.88 | 232.88 |
| Beer Gulder | 255.46 | 267.46 | 279.46 | 291.46 | 303.46 | 315.46 | 327.46 | 339.46 |
| Beer Star | 252.88 | 264.88 | 276.88 | 288.88 | 300.88 | 312.88 | 324.88 | 336.88 |
| Beer Champion | 211.46 | 223.46 | 235.46 | 247.46 | 259.46 | 271.46 | 283.46 | 295.46 |
| Stout Guiness | 275.24 | 287.24 | 299.24 | 311.24 | 323.24 | 335.24 | 347.24 | 359.24 |
| Schnapps | 1,026.75 | 1038.75 | 1050.75 | 1062.75 | 1074.75 | 1086.75 | 1098.75 | 1110.75 |
| Wine Eva | 944.19 | 956.19 | 968.19 | 980.19 | 992.19 | 1004.19 | 1016.19 | 1028.19 |
| Wine Baccus | 788.29 | 800.29 | 812.29 | 824.29 | 836.29 | 848.29 | 860.29 | 872.29 |
| Wine Raffia Palm | 142.63 | 154.63 | 166.63 | 178.63 | 190.63 | 202.63 | 214.63 | 226.63 |
| Local Gin Ufofop | 1,269.90 | 1281.90 | 1293.90 | 1305.90 | 1317.90 | 1329.90 | 1341.90 | 1353.90 |
| Orange Juice | 399.87 | 411.87 | 423.87 | 435.87 | 447.87 | 459.87 | 471.87 | 483.87 |
| Mango Juice | 396.95 | 408.95 | 420.95 | 432.95 | 444.95 | 456.95 | 468.95 | 480.95 |
| Apple juice | 388.11 | 400.11 | 412.11 | 424.11 | 436.11 | 448.11 | 460.11 | 472.11 |
| Table Water Eva | 105.78 | 117.78 | 129.78 | 141.78 | 153.78 | 165.78 | 177.78 | 189.78 |

**Table 2: Prices of selected commodities grouped by senatorial district**

|  |  |  |  |
| --- | --- | --- | --- |
|  | **South Senatorial District** | **North West Senatorial District** | **North East Senatorial District** |
| Garri | 24.50 | 24.50 | 25.50 |
| Rice (local) | 66.78 | 74.46 | 73.60 |
| Yam | 181.99 | 197.55 | 215.53 |
| Cocoyam (white) | 152.70 | 176.98 | 190.54 |
| Cassava | 95.00 | 97.67 | 125.30 |
| Sweet Potato | 145.35 | 131.48 | 193.24 |
| Plantain | 180.08 | 192.87 | 247.48 |
| Beans (Brown) | 82.94 | 94.23 | 89.68 |
| Groundnut (Shelled) | 117.84 | 105.94 | 111.38 |
| Croaker (Dried) | 1046.28 | 1105.58 | 1021.95 |
| Groundnut Oil | 372.46 | 412.06 | 420.82 |
| Egg (Agric) | 399.43 | 416.00 | 443.99 |
| Orange | 118.19 | 141.64 | 154.21 |
| Avocado Pear | 220.10 | 218.32 | 222.51 |
| Paw Paw | 133.12 | 118.51 | 156.39 |
| Pineapple | 192.12 | 181.46 | 221.51 |
| Banana | 236.79 | 223.80 | 243.07 |
| Tomato | 344.88 | 402.70 | 315.23 |
| Onions | 289.12 | 309.12 | 267.88 |
| Okro | 354.24 | 407.73 | 302.60 |
| Water Leaf | 303.80 | 269.33 | 262.72 |
| Mbukpap Uyo (Ogbono) | 593.01 | 717.41 | 675.18 |
| Pepper | 42.71 | 50.54 | 51.70 |
| Salt | 85.22 | 95.29 | 93.90 |
| Biscuit | 249.44 | 247.55 | 240.46 |
| Bread | 344.54 | 297.07 | 269.28 |
| Oats | 739.80 | 602.01 | 659.38 |
| Curry & Thyme | 160.00 | 170.50 | 147.00 |
| Peak Milk Powdered | 1173.41 | 1187.88 | 1179.62 |
| Sugar (St Louis) | 455.52 | 329.15 | 291.60 |
| Coffee | 483.89 | 463.79 | 470.25 |
| Maggi | 415.63 | 411.66 | 399.41 |
| Margarine | 314.79 | 322.90 | 303.62 |
| Sardine (Titus) | 255.14 | 233.16 | 242.09 |
| Geisha | 201.25 | 199.07 | 193.33 |
| Coca Cola Coke | 89.17 | 95.26 | 89.72 |
| Malta Guiness | 150.00 | 157.06 | 150.69 |
| Beer Star | 255.69 | 253.54 | 248.19 |
| Local Gin (Ufofop) | 947.57 | 966.51 | 878.20 |
| Apple juice | 406.08 | 405.69 | 353.93 |
| Table water | 126.67 | 96.46 | 98.04 |
| Mobil (Insecticide) | 689.58 | 551.06 | 629.84 |
| Olive Oil Goya | 317.06 | 323.04 | 313.47 |
| Vitamin Multivite Syrup | 301.24 | 310.35 | 307.50 |
| Anti Malaria Chloroguine | 162.12 | 176.03 | 140.28 |
| Anti Biotic Ampicillin Syrup | 317.47 | 345.39 | 326.10 |
| Cough Mixture | 473.51 | 402.25 | 390.13 |
| Worm Repellant | 451.60 | 446.11 | 399.02 |
| Disinfectant Dettol | 479.99 | 497.15 | 492.71 |
| Disinfectant T.C.P. | 531.10 | 487.01 | 467.48 |
| Blood Test (Malaria/Typhoid) | 1329.17 | 1092.02 | 1144.44 |
| Benson & Hedges | 236.46 | 276.32 | 221.81 |
| Soap (Tetmosol) | 162.47 | 160.12 | 154.10 |
| Detergent (Omo) | 238.09 | 225.77 | 247.72 |
| Vaseline | 259.99 | 260.45 | 218.33 |
| Pears (Baby Hair Oil) | 430.07 | 456.46 | 383.89 |
| Powder | 437.53 | 472.21 | 465.34 |
| ToothPaste | 285.86 | 275.07 | 263.43 |
| Toilet Paper | 53.29 | 52.66 | 52.22 |
| Battery | 108.46 | 106.35 | 96.50 |

**4.2 DATA ANALYSIS**

**DESCRIPTIVE STATISTICS**

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| *South Senatorial District* |  | *North West Senatorial District* |  | *North East Senatorial District* |  |
|  |  |  |  |  |  |
| Mean | 330.2045615 | Mean | 325.3374712 | Mean | 317.5837106 |
| Standard Error | 34.6687327 | Standard Error | 32.96185071 | Standard Error | 32.11668197 |
| Median | 257.8431875 | Median | 264.8908438 | Median | 247.9564583 |
| Mode | #N/A | Mode | #N/A | Mode | #N/A |
| Standard Deviation | 268.5428487 | Standard Deviation | 255.3213977 | Standard Deviation | 248.7747488 |
| Sample Variance | 72115.26161 | Sample Variance | 65189.01612 | Sample Variance | 61888.87566 |
| Kurtosis | 4.13156695 | Kurtosis | 3.575126028 | Kurtosis | 3.943278055 |
| Skewness | 1.913649928 | Skewness | 1.816714463 | Skewness | 1.910358525 |
| Range | 1304.667083 | Range | 1163.376667 | Range | 1154.117917 |
| Minimum | 24.5 | Minimum | 24.5 | Minimum | 25.5 |
| Maximum | 1329.167083 | Maximum | 1187.876667 | Maximum | 1179.617917 |
| Sum | 19812.27369 | Sum | 19520.24827 | Sum | 19055.02264 |
| Count | 60 | Count | 60 | Count | 60 |

|  |  |  |
| --- | --- | --- |
| **Quarter** | **n** | **Market Basket** |
| 1st quarter 2020 (Base Year) | 1 | 13000 |
| 2nd quarter 2020 | 2 | 13500 |
| 3rd quarter 2020 | 3 | 13800 |
| 4th quarter 2020 | 4 | 13900 |
| 1st quarter 2021 | 5 | 14500 |
| 2nd quarter 2021 | 6 | 15000 |
| 3rd quarter 2021 | 7 | 15300 |
| 4th quarter 2021 | 8 | 16000 |

**Calculate Consumer Price Index (CPI) for Food**

CPI =

Inflation n =

|  |  |  |  |
| --- | --- | --- | --- |
| **Quarter** | **Market Basket** | **CPI for Food** | **Inflation Rate** |
| 1st quarter 2020 (Base Quarter) | 13000 | 100.00 | N/A |
| 2nd quarter 2020 | 13500 | 103.85 | 3.85% |
| 3rd quarter 2020 | 13800 | 106.15 | 2.22% |
| 4th quarter 2020 | 13900 | 106.92 | 0.72% |
| 1st quarter 2021 | 14500 | 111.54 | 4.32% |
| 2nd quarter 2021 | 15000 | 115.38 | 3.45% |
| 3rd quarter 2021 | 15300 | 117.69 | 2.00% |
| 4th quarter 2021 | 16000 | 123.08 | 4.58% |

CPI 1 =

CPI 2 =

CPI 3 =

CPI 4 = 92

CPI 5 = 54

CPI 6 = 38

CPI 7 = 69

CPI 8 = 08

To forecast the Consumer Price Index (CPI) for food for the first and second quarter of the year 2022, we will run a regression analysis on the data above coding t such that

|  |  |  |  |
| --- | --- | --- | --- |
| **Quarter** | **Market Basket** | **CPI for food(Yt)** | **t** |
| 1st quarter 2020 | 13000 | 100.00 | -7 |
| 2nd quarter 2020 | 13500 | 103.85 | -5 |
| 3rd quarter 2020 | 13800 | 106.15 | -3 |
| 4th quarter 2020 | 13900 | 106.92 | -1 |
| 1st quarter 2021 | 14500 | 111.54 | 1 |
| 2nd quarter 2021 | 15000 | 115.38 | 3 |
| 3rd quarter 2021 | 15300 | 117.69 | 5 |
| 4th quarter 2021 | 16000 | 123.08 | 7 |

|  |  |
| --- | --- |
| ***Regression Statistics*** | |
| Multiple R | 0.989165 |
| R Square | 0.978447 |
| Adjusted R Square | 0.974855 |
| Standard Error | 1.229766 |
| Observations | 8 |

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **ANOVA** |  |  |  |  |  |
|  | *df* | *SS* | *MS* | *F* | *Significance F* |
| Regression | 1 | 411.9394 | 411.9394 | 272.3881 | 3.15E-06 |
| Residual | 6 | 9.073954 | 1.512326 |  |  |
| Total | 7 | 421.0134 |  |  |  |

|  |  |  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- | --- | --- |
|  | ***Coefficients*** | ***Standard Error*** | ***t Stat*** | ***P-value*** | ***Lower 95%*** | ***Upper 95%*** | ***Lower 95.0%*** | ***Upper 95.0%*** |
| Intercept | 110.57625 | 0.434788109 | 254.3221579 | 2.49398E-13 | 109.5123618 | 111.6401382 | 109.5123618 | 111.6401 |
| t | 1.5658 | 0.0948 | 16.5041 | 3.15E-06 | 1.3337 | 1.7980 | 1.3337 | 1.7980 |

Below is the regression model

Yt  = 110.58 + 1.566ti

Y = Consumer Price Index (CPI) for food in Naira

t = The ith quarter of the year

* From the analysis above, we have our R2 as 0.982 which is 97.8%. That is 97.8% of the fluctuation in the dependent variable CPI can be explained by the independent variable time.
* As we move from one quarter of the year to the next, the CPI increase by 1.566 units.

**TEST OF ADEQUACY OF THE MODEL**

H0: Model is not adequate

H1: Model is adequate

Rule: If P-value is less than 0.05 (alpha level), reject H0 and conclude that the model is adequate and can be used to make predictions.

From the analysis above we have our p-value as 0.00000315. Hence, we have enough evidence to reject H0 (at an alpha level of 0.05) and conclude that the model is adequate and it can be used to make predictions.

Since we have only one parameter, there’s no need to test for the adequacy of parameters.

**PREDICTING THE CPI FOR FOOD FOR THE FIRST AND SECOND QUARTER OF THE YEAR 2022**

* For the first quarter, we set t = 9

110.58 + 1.566 (9) = 124.67

I have that in the first quarter of 2022, the CPI for food relative to the first quarter of 2020 will be 124.67 naira.

* For the second quarter, we set t = 11

110.58 + 1.566 (11) = 127.81

I have that in the second quarter of 2022, the CPI for food relative to the first quarter of 2020 will be 127.81 naira.

**CORRELATION ANALYSIS**

To check if there’s any correlation in the prices of goods among the three senatorial districts in Akwa ibom state, we run a correlation analysis

|  |  |  |
| --- | --- | --- |
|  | ***South Senatorial District*** | ***North West Senatorial***  ***District*** |
| ***North West Senatorial District*** | 0.982 |  |
|  | 0.000 |  |
|  |  |  |
| ***North East Senatorial District*** | 0.987 | 0.99 |
|  | 0.000 | 0.000 |

**Statement of hypothesis**

H0: there is no statistically significant linear relationship between prices in the different senatorial districts

H1: there is a statistically significant linear relationship between prices in the different senatorial districts

At significance level of 0.01

**Decision**

At a significance level of 0.01 (two tailed), I reject the null hypothesis and conclude that the linear relationship is significant for all 3 senatorial districts

**Conclusion**

From the correlation matrix, we see that the prices among the different senatorial districts are highly correlated and the hypothesis test tells us that the correlation is significant.

**CHAPTER 5**

Summary

* At an alpha level of 0.05, I reject the null hypothesis and conclude that the model is good for making predictions.
* The correlation analysis came out strongly positive and significant

Conclusion

* The CPI for food in the first quarter of 2022 will be 124.67.
* The CPI for food in the second quarter of 2022 will be 127.31.
* Between the first quarter of 2020 and the fourth quarter of 2021, the inflation rate increased by 21.14%
* From the correlation matrix, I see that the prices in the different senatorial districts are highly correlated and the hypothesis test tells me that the correlation is significant.
* From the correlation analysis above, the prices of food stuff in the different senatorial districts are highly positively correlated and from the graph, I can conclude that they are relatively equal.

Recommendation

* The Federal Government should look for ways to curb the steady increase in price of everyday goods and services.
* Citizens should be aware of the debilitating state of the economy so as not to be caught unaware.

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