1 CHAPTER ONE

1.0 INTRODUCTION

The name SIWES is common to tertiary institutions that run courses which involve industrial training programmes. SIWES is an acronym for – STUDENTS’ INDUSTRIAL WORK EXPERIENCE SCHEME. The Student Industrial Work Experience Scheme (SIWES) was established by the Industrial Training Fund (ITF) in 1973 to solve the problem of lack of adequate practical skills in preparation for employment in industries by Nigerian graduates of tertiary institutions. The scheme exposes students to industry based skills necessary for a smooth transition from the classroom to the world of work. It provides students of tertiary institutions the opportunity of being familiar and exposed to the needed experience in handling machinery and equipment which are usually not available in the educational institutions. As stated by Nse (2012), the scheme is a planned, supervised training and intervention programme based on stated and specific learning and career objectives, leading to the development of occupational competencies of the participants. SIWES is also an effort to bridge the existing gap between theory and practice and expose students to various technical skills. Before the inception of the scheme, there was a growing concern among Nigerian industrialists that graduates of institutions of higher learning lacked adequate practical background experience for employment. So, employers were of the opinion that the theoretical education provided by higher institutions neither met nor satisfy the needs of the economy. It was against this background that the Fund during its formative years, introduced SIWES to provide students with the opportunity of exposure to handle equipment and machinery in Industry to enable them acquire prerequisite practical knowledge and skills. (ITF and UNIJOS, 2011). These skills aimed at exposing students to professional work methods as the scheme (SIWES) acts as a catalyst for industrial growth and productivity through professional development. One of the primary goals of SIWES is to help students integrate leadership development into experiential learning process. However, the effectiveness of SIWES experience will have varying outcomes based upon the individual student, the work assignment, and the supervisor/mentor requirements. It is vital that each internship position description includes specific, written learning objectives to ensure leadership skill development is incorporated. 2 Participation in SIWES has become a necessary pre-condition for the award of Diploma and degree certificates in specific disciplines in most institutions of higher in the country in accordance with the education policy of the government. 1.1 Historical Background of SIWES In the earlier stage of science and technology education in Nigeria, students were graduating from their respective institution without any technical knowledge or working experience. It was in the view that courses were mandated for students in different institution with the view of widening their horizons so as to enable them have a technical knowledge or working experience before graduating from their various institutions. The Students’ Industrial Work Experience Scheme (SIWES) is a skill development programme established by Industrial Training Fund (ITF) in 1973 with the headquarters in Jos, Nigeria. The Scheme started in 1974 in 11 institutions of higher learning with 748 participants. By 1978, it has widened in scope to about 5,000 participants from 32 different institutions in the country. In 1979, the Industrial Training Fund (ITF), withdrew from the managing the scheme due to problems of organizational logistics and the increased financial burden as a result of rapid expansion of SIWES (ITF: 2003). The scheme is tripartite programme that incorporates the students, the institutions, and the industries. In Nigeria, SIWES is financed by the federal government (through the ministry of commerce and industry) and managed by the Industrial Training Fund (ITF) aiming at making education more relevant and also to bridge the yearning gap between theory and practice of Engineering, Technology and other related disciplines in tertiary institutions in Nigeria. The bodies involved in SIWES operation are known as the stakeholders and they are; the Federal Government of Nigeria (through the Ministry of Commerce and Industry), Industrial Training Fund (ITF), National Universities Commission (NUC), NBTC/NCCE, the institutions, the industries or employers and the students. SIWES is a form of cooperative industrial internship programme among all its stake holders. Mafe (2009) stated that all stakeholders are involved in the operation of SIWES but that student are key factors that are directly involved in its implementation, all other stakeholders have lesser role to play in the actual training process. Mafe (2010) citing Crag (1987) stated that, SIWES is generic because it cuts across more than 60 programmes in the universities, over 40 programmes in the polytechnics and about 10 programmes in the colleges of education. 3 The ITF solely funded the scheme during its formative years. But as the financial involvement became unbearable to fund, it withdrew from the scheme in 1978. The federal government then handed the over the scheme in 1979 to both the National Universities Commission (NUC) and the National Board for Technical Education (NBTE). Later, the federal government in November, 1984 reverted the management and implementation of the scheme to ITF and it was effectively taken over by the Industrial Training Fund (ITF) in July 1985 with the funding being solely borne by the federal government. (Culled from Job Specifications on Students’ Industrial Work Experience Scheme). 1.2 Aims and Objectives of SIWES The Industrial Training Fund’s Policy Document No. 1 of 1973 (ITF, 1973) which established SIWES outlines the objectives of the scheme. The objectives are to: ¬ provide an avenue for students in institutions of higher learning to acquire industrial skills and experience during their courses of study; ¬ prepare students for industrial work situations that they are likely to meet after graduation; ¬ expose students to work methods and techniques in handling equipment and machinery that may not be available in their institutions; ¬ make the transition from school to the world of work easier and enhance students contacts for later job placements; ¬ provide students with the opportunities to apply their educational knowledge in real work situations, thereby bridging the gap between theory and practice; ¬ enlist and strengthen employers’ involvement in the entire educational process through SIWES. 1.3 Importance and Benefits of SIWES Below are some of the benefits students from tertiary institutions of all kinds derive from SIWES programme. o SIWES provides students the opportunity to test their interest in a particular career before permanent commitments are made. o SIWES increases a student’s sense of responsibility. 4 o SIWES helps students to develop employment records/references that will enhance employment opportunities. o SIWES provides students the opportunity to develop attitudes conducive for effective interpersonal relationships. o SIWES provides an avenue for students to understand informal organizational interrelationships. o SIWES aids students in adjusting from college to full-time employment. o SIWES provides the opportunity for students to develop skills in the application of theory to practical work situations. o SIWES helps students to develop and acquire good work habits 5 CHAPTER TWO 2.0 HISTORICAL BACKGROUND OF THE UNIVERSITY OF IBADAN LABORATORY FOR INTERDISCIPLINARY STATISTICAL ANALYSIS (UILISA). Laboratory for Interdisciplinary Statistical Analysis (LISA) has been advancing research via expert statistical analysis since 1948 with the mission to train the students of statistics to become interdisciplinary collaborators and to demonstrate the value of statistical thinking in interdisciplinary collaborations. LISA provides statistical advice, analysis, and education to Virginia Tech researchers offering individual collaboration meetings, walk-in consulting, educational short courses, and support for interdisciplinary research projects. LISA collaborators are mostly students in the department of statistics. LISA has a full-time director and assistant director who meets with faculty clients and oversee a team of graduate and undergraduate student collaborators. LISA’s statistical collaborators are trained to help researchers design experiments, analyze and plot data, run statistical software codes, interpret results, and communicate statistical concepts to non-statisticians. The assistance LISA renders is free for Virginia Tech Faculty, staff and students on academic research projects. Areas of expertise are very wide. The vision of the Virginia Tech LISA is to build a network of twenty (20) statistical collaboration laboratories from developing countries by 2020 to help solve real world problems. This is simply referred to as LISA 2020 network. UI-LISA is now a certified and recognized member of this network. The mission of LISA is to provide statistical advice, analysis, and education to Virginia Tech researchers offering individual collaboration meetings, walk-in consulting and educational short courses, and support for interdisciplinary research projects. University of Ibadan Laboratory for Interdisciplinary Statistical Analysis (UI-LISA) is a member of the Laboratory for Interdisciplinary Statistical Analysis (LISA) 2020 global network initiative under the leadership and support of the pioneering LISA in the Department of Statistics, Virginia Tech in the United States of America (USA). University of Ibadan Laboratory for 6 Interdisciplinary Statistical Analysis (UI-LISA) is headed by Prof. Olusanya E. Olubusoye as the director and Mrs. Serifat A. Folorunso as the administrative coordinator. UI-LISA parades a team of highly experienced and qualified statisticians some of whom are holding the highest professional qualification of the Royal Statistical Society (RSS), London, combined with their long standing years of teaching and research within and outside Nigeria. The team is readily available to provide solutions to statistical related challenges to improve statistical skills and make research enjoyable, interesting and stress free. UI-LISA assists all in any area requiring statistical expertise and at any stage of research work, from the design of observational or experimental studies to report writing and preparing presentation slides with statistical contents. The wide range of activities of UI-LISA is designed to target all categories of statistics users from beginners into advanced practitioners. In particular, UI-LISA attends to undergraduate and postgraduate students in any discipline or institution; academic and non-academic staff/researchers; business and private organizations; government agencies and corporate establishments. 2.1 Aims and Objective of UI-LISA. Specifically, UI-LISA engages in the following activities and services aimed at promoting quality research findings among staff and students in the University community and sister institutions: • To provide statistical collaboration with researchers in various disciplines from all departments, centers and institutes; • To provide daily walk-in- consultation for quick solution to statistical problems; • To offer short statistical courses to improve statistical literacy and skills; • To train young and resident statisticians to become excellent collaborators and to be effective statistical communicators; • To help clients to frame research questions and objectives; • To help clients to design their experimental or observational studies to be able to answer their research questions; • To assist clients in the collection of appropriate data from experiments or questionnaire administration; 7 • To assist clients in the analysis of data by making use of the appropriate statistical tools; • To explain statistical results from the computer printouts to the clients if necessary, generate report from the analysis; • To guide the clients on the best approach to present and communicate their findings; • To educate the clients on the use and interpretation of outputs from statistical packages such as SPSS, STATA and R; • To improve interns on how to design and analyse experimental data; • To educate interns and clients on how to test statistical hypotheses and distinguish between practical significance and statistical significance; • To enlighten clients on how to make attractive and catchy power point presentations with Microsoft Power Point and LaTeX (Beamer presentation). 2.2 Activities of UI-LISA The University of Ibadan Laboratory for Interdisciplinary Statistical Analysis offer the following activities and programmes: ¬ Collaborative Training Workshop: UI-LISA organizes joint training programmes with departments, centers, faculties, institutes and units within and outside the university on any aspect of statistical methodology peculiar to them. This type of training workshop is usually designed to last for a full day or more depending on the need of our partnering body. ¬ Practical experience ¬ Weekly one-hour with a statistician: UI-LISA offers a weekly one hour programme on Tuesdays between 3pm and 4pm in the laboratory on various interesting topics in statistics with practical demonstration on how to implement them using statistical packages. ¬ Mobile Statistical Clinic: UI-LISA moves out as a team and station at public locations such as halls of residence, conference areas and even recreational areas to provide on-the-spot solution to problems and enquiries related to statistics. 8 Address: UI-LISA is housed at Room 103, Department of Statistics, Mathematics/Statistics Complex, University of Ibadan, Ibadan, Nigeria. 2.3 Organogram of the Organization LISA COORDINATOR/DIRECTOR ADMINISTRATIVE COORDINATOR RESEARCH ASSISTANTS LISA COLLABORATORS INDUSTRIAL TRAINING STUDENTS 9 CHAPTER THREE 3.0 SUMMARY OF ACTIVITIES UNDERTAKEN AT SECTIONS During my SIWES programme, some statistical software packages were introduced to me. They include: R programming, Microsoft Excel, Econometric views (E-Views), SPSS package and LaTeX. Also, statistical concepts like analysis, tests of hypotheses, running of codes, interpretation of results from the analysis, report writing and survey were being introduced to me. My entire industrial training was done in the University of Ibadan Laboratory for Interdisciplinary Statistical Analysis. During the training, various statistical analyses were carried out for clients from various departments, field and educational levels. Below is the summary of the activities I undertook during my twenty-four (24) weeks training. ♣ Questionnaire design ♣ Data coding using SPSS (Statistical Package for Social Sciences) package ♣ Data entry using SPSS (Statistical Package for Social Sciences) package ♣ Data Entry using Microsoft Excel ♣ Data Cleaning ♣ SPSS for data analysis ♣ Microsoft Excel for data analysis ♣ Introduction to statistical computing using SPSS and R ♣ R for data analysis ♣ Interpretation of results from software packages such as SPSS, R and Microsoft Excel ♣ Hypotheses testing ♣ Report writing ♣ LaTeX training and practical use of the package ♣ Field Survey 3.1 Questionnaire Design No survey can achieve success without a well-designed questionnaire. Unfortunately, questionnaire design has no theoretical base to guide the marketing researcher in developing a flawless questionnaire. Hence, questionnaire design is more of an art than a science. The design of a questionnaire will depend on whether the researcher wishes to collect exploratory information 10 (i.e. qualitative information for the purposes of better understanding or the generation of hypotheses on a subject) or quantitative information (to test specific hypotheses that have previously been generated). There are no hard-and-fast rules about how to design a questionnaire, but there are a number of points that can be borne in mind in order to design a good questionnaire for a study or survey. Some of the points include the following. o A well-designed questionnaire should meet the research objectives. o A well-designed questionnaire should obtain the most complete and accurate information possible. In this case, the questionnaire designer needs to ensure that respondents fully understand the questions and are not likely to refuse to answer, lie to the interviewer or try to conceal their attitudes. A good questionnaire is organized and worked to encourage respondents to provide accurate, unbiased and complete information. o A well-designed questionnaire should make it easy for respondents to give the necessary information and for the interviewer to record the answer, and it should be arranged so that sound analysis and interpretation are possible. The questionnaire below is an example of a well-designed questionnaire for a client in the Faculty of Science, Department of Chemistry, Environmental Chemistry and Pollution Control Unit, University of Ibadan, Ibadan, Nigeria. The objective of the research is to determine the levels of residual antibiotics in quail eggs and chicken eggs and also to compare the level of named antibiotics residue in quail eggs and chicken eggs. 11 DEPARTMENT OF CHEMISTRY ENIVIRONMENTAL CHEMISTRY AND POLLUTION CONTROL UNIT FACULTY OF SCIENCE, UNIVERSITY OF IBADAN Dear Respondent, I am a masters’ student of the above named institution conducting a research to determine the levels of residual antibiotics in quail and chicken eggs. In addition, to compare the level of named antibiotics residue in quail eggs and chicken eggs. This research is for academic purpose only; all information will be treated in strict confidentiality. Thank you in anticipation for your cooperation. SECTION A: SPECIES OF QUAILS AND CHICKEN 1. Species of Quail(s) and Chicken in Poultry farm: Please tick as appropriate Quail Chicken Common Hybrid Japanese Rhode Island Red King Leghorn Mountain Plymouth Rock (Agric.) Bobwhite Black Star Others Others i. i. ii. ii. iii iii iv iv v v vi vi vii vii viii viii ix ix x x 12 SECTION B: ANTIBIOTICS USAGE IN POULTRY FARM Name(s) of Antibiotics Tick as appropriate Quails Chickens Chloramphenicol Doxycycline Metronidazole Enrofloxacin Tetracycline Trimethoprim Gentamicin Erythromycin Oxytetracycline Fluoroquinoline Sulphonamide Ciprofloxacin Penicillin Amoxicillin Others Quail Chicken i. ii. SECTION C: VARIATION/PERIOD OF ANTIBIOTICS ADMINISTRATION A. Growth Stage 1. At what stage do you start antibiotics administration? Quails: Day old A week old 2 -weeks old 3 -weeks old Others: Chicken: Day old A week old 2 - weeks old 3 - weeks old Others: 13 2. How often are antibiotics administered for growth? Quails: Once a day Once a week Twice a week Once in 2- weeks Others: Chicken: Once a day Once a week Twice a week Once in 2- weeks Others: 3. Given Q2, at what period/variation of time were they administered? Quails: Tick as appropriate If once a day M A E N If once a week M T W TH F S SUN If twice in a week M T W TH F S SUN If once in 2-weeks M T W TH F S SUN WK1 WK2 Other: Chicken: Tick as appropriate If once a day M A E N If once a week M T W TH F S SUN If twice in a week M T W TH F S SUN If once in 2-weeks M T W TH F S SUN WK1 WK2 Other: 4. Mode of Antibiotics Administration Mode of administration Quails Chickens Through Feed (before) Through Feed (after) Through Feed (mixed) Through Water Injection Other methods 14 5. Site of Antibiotics Administration Site of administration Quails Chickens On the Neck Under the Wings Breast muscle B. Laying Stage 6. At what stage do your (chicken or quails) attain laying stage? Quails: 3 – 5 weeks 6 – 8 weeks 9 -11 weeks Others: Chicken: 12–13weeks 14 – 15 weeks 16 -17 weeks Others: 7. What type of antibiotics administered at this stage? Quails: Chicken: 8. How often are antibiotics administered at this stage? Quails: Once a day Once a week Twice a week Once in 2- weeks Others: Chicken: Once a day Once a week Twice a week Once in 2- weeks Others: 9. Given Q8, at what period/variation of time were they administered? 15 Quails: Tick as appropriate If once a day M A E N If once a week M T W TH F S SUN If twice in a week M T W TH F S SUN If once in 2-weeks M T W TH F S SUN WK1 WK2 Other: Chicken: Tick as appropriate If once a day M A E N If once a week M T W TH F S SUN If twice in a week M T W TH F S SUN If once in 2-weeks M T W TH F S SUN WK1 WK2 Other: 10. Mode of Antibiotics Administration Mode of administration Quails Chickens Through Feed (before) Through Feed (after) Through Feed (mixed) Through Water Injection Other methods 11. Site of Antibiotics Administration Site of administration Quails Chickens On the Neck Under the Wings Breast muscle 16 SECTION D: ANTIBIOTICS DOSAGES 1. What is the amount (Conc.) of dosages administered? Quails Chickens Antibiotics Growth (Amount) Laying (Amount) Growth (Amount) Laying (Amount) 2. Do you mix antibiotic dosages? Quail: Yes No Chicken Yes No 3. If Yes, How often do they change dosage? Quails Chickens Growth Laying Growth Laying a. Daily b. Weekly c. Monthly d. Quarterly e. Yearly f. Use only one antibiotic 17 3.2 SPSS for Data Coding Once questionnaires have been administered and well-filled, they are then collected for data analysis, tests for hypotheses and report writing. To code and enter the data collected from the research, it is imperative to know that some statistical software packages have been designed to make data coding and data entry easy and stress-free. One of the software packages include SPSS, an acronym for Statistical Package for Social Sciences. The next thing we do is to code the data in the questionnaires into SPSS; we call this creation of template – which is the concept of inputting the questions in the questionnaire into SPSS) and this is done in the variable view of the package depending on whether the data is nominal, ordinal or a scale data. Under the variable view, we also code in variables with levels e.g. gender (male or female), marital status (single, married, divorced, or widowed), level of education etc. Figure 3.1: The variable view where data is coded in SPSS. Below is the template created for a student in the Department of Nursing, Faculty of Science, University of Ibadan, Ibadan, Nigeria whose study is to know the perception of women on male’s involvement during pregnancy and labour in University College Hospital, Ibadan. 18 Figure 3.2: Template created for the study of women perception towards male involvement during pregnancy and labour 3.3 SPSS for Data Entry The data from the one hundred and five (105) administered questionnaires are then entered in the data view page of the template created using the SPSS package. As it would be seen in the figures, the variable A2 has been coded: 1-Single, 2-Married, 3-Separated, 4-Divorced. Likewise, the religion has been coded: 1-Christianity, 2-Islam, 3-Others. In the same manner, variable B8 through C24 has been coded: 1-Strongly disagree, 2-Disagree, 3-Undecided, 4-Strongly disagree, 5-Disagree. 19 Figure 3.3: Data coded (respondents 1 – 23) Figure 3.4: Data coded (respondents 1 – 23) (cont’d) 20 Figure 3.4: Data collected (respondents 1 – 23) Figure 3.6: Data collected (respondents 1 – 23) (cont’d) 21 Figure 3.7: Data collected (respondents 24 – 45) Figure 3.8: Data collected (respondents 24 – 45) (cont’d) 22 Figure 3.9: Data collected (respondents 46 – 67) Figure 3.10: Data collected (respondents 46 – 67) (cont’d) 23 Figure 3.11: Data collected (respondents 68 – 89) Figure 3.12: Data collected (respondents 68 – 89) (cont’d) 24 Figure 3.13: Data collected (respondents 90 – 105) Figure 3.14: Data collected (respondents 68 – 89) (cont’d) 25 3.4 Data Cleaning Before any data entered using any statistical package could be analyzed, it has to undergo a process and be cleaned in order to avoid challenges of outliers, heteroscedasticity, etc. This process is known as Data Cleaning as it renders the data error-free. Data cleaning is also the process of detecting and correcting (or removing) corrupt or inaccurate data from the dataset and it also refers to identifying incomplete, incorrect or inaccurate parts of the data and then replacing, modifying, deleting the useless data. We do this by running the frequency of the entire data set and look through it to check for errors and missing values. Click on: Analyze Descriptive Statistics Frequencies The frequency table for the age and marital status of the respondents from the dataset of the nursing department student is displayed below: Figure 3.15: Descriptive Statistics of the collected data As shown regarding the marital status, we have: 26 Single – 7, Married – 98, Total – 105 which implies that the variable (marital status) contains no error. This same thing is checked for the other variables in order to effectively and completely clean the data. 3.5 SPSS for Data Analysis SPSS as a statistical software package can be used to analyze given data set. In analyzing any given or entered data, the statistician or analyst must understand the objectives of the research, survey or study and must interpret the results with regards to these objectives. Taking into consideration, the dataset from the one hundred and five (105) administered questionnaires, the research objectives of the study are stated below: i. To investigate the perceptions of the educated and non-educated women on male involvement during pregnancy and labour. ii. To determine the perception of inter-tribal groups towards male involvement during pregnancy and labour. iii. To investigate employed and unemployed women’s perception towards male involvement during pregnancy and labour. To analyze the data with regards to the objectives above, we take the objectives one after the other. 3.5.1 To investigate the perceptions of the educated and non-educated women on male involvement during pregnancy and labour. From the entered dataset, we could observe that the current level of education of the respondents was coded: 1 – None, 2 – Primary, 3 – Secondary, 4 – Tertiary. This implied that there is no specific class for the educated and non-educated women. Therefore, there is a need to go through the process of transforming the variable and recoding the variable such that the respondents who have their current level of education to be ‘None’ and the respondents whose current level of education is ‘Primary’ are regarded as ‘non-educate’. In the same manner, the respondents whose current level of education is either ‘Secondary’ or ‘Tertiary’ are regarded as ‘educated’. After the transformation, the dataset below is obtained: 27 Figure 3.16: Transformation into same variables (Variable A2 – Respondents’ educational status) Figure 3.17: Transformation into same variables (respondents 23 – 45) 28 Figure 3.18: Transformation into same variables (respondents 46 – 67) Figure 3.19: Transformation into same variables (respondents 68 – 89) 29 Figure 3.20: Transformation into same variables (respondents 90 – 105) Also, the same process of transformation is applied to obtain the perception of the respondents towards male involvement during pregnancy and labour. The perception is coded into: Good perception and Poor perception as shown below. 30 Figure 3.21: Computing a variable - Perception Finally, to obtain the perception of the educated and non-educated women on male involvement during pregnancy and labour, we run a cross tabulation of perception (whether good or poor) on current level of education of the respondents (whether educated or non-educated). Analyze Descriptive statistics Crosstabs We obtain the table below: for the cross tabulation: Table 3.1: Perceptions of the educated and non-educated women on male involvement during pregnancy and labour. Respondents’ perception Level of Education Total Uneducated Educated Poor perception 0 6 6 Good perception 5 94 99 Total 5 100 105 31 3.5.2 To determine the perception of inter-tribal groups of the respondents towards male involvement during pregnancy and labour. In order to achieve this objective, we also run a cross tabulation of the respondents’ perception on their inter-tribal groups and we obtain the table below: Table 3.2: Perception of inter-tribal groups of the respondents towards male involvement during pregnancy and labour. Respondents’ perception Ethnicity Total Igbo Hausa Yoruba Edo Perception Poor perception 0 0 6 0 6 Good perception 5 1 91 2 99 Total 5 1 97 2 105 3.5.3 To determine the perception of the employed and the unemployed women towards male involvement during pregnancy and labour. To achieve this objective, we run a cross tabulation of the respondents’ perception on the employment status of the respondents and we obtain the table shown below: Table 3.3: perception of the employed and the unemployed women towards male involvement during pregnancy and labour. Respondents’ perception Are you employed? Total Yes No Perception Poor perception 4 2 6 Good perception 57 40 97 Total 61 42 103 3.6 Hypothesis testing using SPSS The research hypotheses for the study of the perception of women on males’ involvement during pregnancy and labour is given below: 32 i. There is no significant difference between the perceptions of the educated and noneducated women on male involvement during pregnancy and labour. ii. There is no significant difference between the perceptions of the unemployed and employed women towards male involvement during pregnancy and labour. To test these hypotheses, follow the procedure below: 3.6.1 Relationship between the perception of the educated and the uneducated women and male involvement during pregnancy and labour. H0: There is no significant difference between the perceptions of the educated and the uneducated women on male involvement during pregnancy and labour Vs H1: There is a significant difference between the perception of the educated and the uneducated women on male involvement during pregnancy and labour Significance level (α): 5% (0.05) Decision rule: Reject H0, if p-value is less than significance level (α), otherwise, do not reject H0. From the table below, it is observed that the p-value (0.573) is greater than significance level (0.05), which implies there is no enough evidence to reject the null hypothesis. In essence, we conclude that there is no significant difference between the perception of the educated and the uneducated women on male involvement during pregnancy and labour. Table 3.4: chi-square test for the perception of the educated and uneducated women towards male involvement during pregnancy and labour. Value D.f P-value Pearson Chi-Square 0.318a 1 0.573 3.6.2 Relationship between the perception of the employed and the unemployed women and male involvement during pregnancy and labour. H0: There is no significant difference between the perception of the employed and the unemployed women on male involvement during pregnancy and labour Vs H1: There is a significant difference between the perception of the employed and the unemployed women on male involvement during pregnancy and labour 33 Significance level (α): 5% (0.05) Decision rule: Reject H0, if p-value is less than significance level (α), otherwise, do not reject H0. From the table below, it is observed that the p-value (0.702) is greater than significance level (0.05), which implies there is no enough evidence to reject the null hypothesis. In essence, we conclude that there is no significant difference between the perception of the employed and the unemployed women on male involvement during pregnancy and labour Table 3.5: Chi-square test for the perception of the employed and unemployed women towards male involvement during pregnancy and labour. Value D.f P-value Pearson Chi-Square 0.146a 1 0.702 3.7 Field Survey During my SIWES training, I was privileged to participate in two different field surveys. Firstly, I participated in a survey on “Purchasing Power Parity (PPP)” at Agbeni market, Ibadan, Oyo state, which was organized by the “Centre for Econometrics and Allied Research (CEAR)”, in the University of Ibadan, Ibadan, Nigeria. The second survey was conducted by the “Centre for Petroleum, Energy, Economics and Law (CPEEL)”, University of Ibadan, Ibadan, Nigeria. It was a research to determine the penetration of modern energy sources among households, commercial businesses, in Ibadan. The objectives of the study would enable CPEEL to characterize modern energy penetration in Ibadan as well as factors driving the demand and supply of this nascent technology. In addition, it would help to understand the economic decisions and behavior of the respondents with respect to new, available energy options within the energy mix of households in the city. The survey was a household survey carried out at Ajibode extension, University of Ibadan, Ibadan, Nigeria. 3.8 R for Data Analysis R is a software language for carrying out complicated and simple statistical analyses. It includes routines for data summary and exploration, graphical representation and data modelling. The following is the summary of all I learnt in the use of R for Data Analysis in the University of Ibadan Laboratory for Interdisciplinary Statistical Analysis. 34 • Creation of objects (scalars, vectors and matrices) • Creation of sequences (arithmetic sequences) • Summary of a dataset • Summaries and Subscripting • Matrices • Operations on matrices (addition, subtraction, multiplication) • Inverse of a matrices • Attaching to objects • Working on dataset (swiss data, mtcars, trees) • The Apply function • Statistical computation and simulation • Graphics in R • Writing functions Other things I learnt include some of the many facilities in R which are listed below. o Functions for fitting statistical models such as linear and generalized linear models o Functions for fitting curves to smooth data o Functions for optimization and equation solving o Facilities to program using loops and conditional statements such as “if” and “while” o Plotting routines to view 3 – dimensional data 35 Figure 3.22: Creation of objects Figure 3.23: Creation of sequences 36 Figure 3.24: Summaries and Subscripting Figure 3.25: Creation of matrices 37 Figure 3.26: Creating matrices (by definition of rows and columns) Figure 3.27: Operations on matrices (multiplication) 38 Figure 3.28: Inverse of matrices Figure 3.29: Dataset – ‘trees’ 39 Figure 3.30: Working on dataset – ‘trees’ Figure 3.31: Graphics of dataset – ‘swiss’ 40 Figure 3.32: Time series plot of dataset – ‘nhtemp’ (line of best fit is fitted) Figure 3.33: Time series plot of dataset – ‘nhtemp’ (points are being plotted) 41 3.9 LaTeX LaTeX is a document preparation system for producing professional-looking documents, it is not a word processor. It is particularly suited to producing long, structured documents, and is very good at type setting equations. If you are used to producing documents with Microsoft Word, you will find that LaTeX is a very different style of working. Microsoft Word is ‘What You SEE Is What You Get’ (WYSIWYG), this means that you see how the final document will look as you are typing. When working in this way, you will probably make changes to the document’s appearance (such as line spacing, headings, page breaks) as you type. With LaTeX, you do not see how the final document will look while you are typing it – this allows you to concentrate on the content rather than the appearance. A LaTeX document is a plain text file with a ‘tex’ file extension. It can be typed in a simple text editor such as Notepad, but most people find it easier to use a dedicated LaTeX editor. As you type, you mark the document structure (title, chapters, subheadings, lists, etc.) with tags. When the document is finished, you compile it – this means converting it into another format. Several different output are available, but the most useful probably is the Portable Document Format (PDF), which appears as it will be printed and can be transferred easily between computers. Below are some of the documents I typed using LaTeX in the University of Ibadan Laboratory for Interdisciplinary Statistical Analysis: 42 Figure 3.34: ODE II 2017/2018 Figure 3.35: ODE II (2017/2018) cont’d 43 Figure 3.36: ODE I (2016/2017) Figure 3.37: ODE I (2016/2017) cont’d 44 Figure 3.38: ODE I (2016/2017) cont’d 45 CHAPTER FOUR 4.0 KNOWLEDGE AND SKILLS ACQUIRED Throughout the twenty-four (24) weeks for my Industrial Training, I acquired the following knowledge and skills in the University of Ibadan Laboratory for Interdisciplinary Statistical Analysis (UI-LISA): ¬ Questionnaire design ¬ Data coding using SPSS (Statistical Package for Social Sciences) package ¬ Data entry using SPSS (Statistical Package for Social Sciences) package ¬ Data Entry using Microsoft Excel ¬ Data Cleaning ¬ SPSS for data analysis ¬ Microsoft Excel for data analysis ¬ Introduction to statistical computing using SPSS and R ¬ R for data analysis ¬ Interpretation of results from software packages such as SPSS, R and Microsoft Excel ¬ Hypotheses testing ¬ Report writing ¬ Introduction to E-Views (Econometric Views) ¬ LaTeX training and practical use of the package ¬ Field Survey ¬ Introduction to Hypertext Markup Language (HTML) ¬ Typing a project work in LaTeX ¬ LaTeX for graphics 46 CHAPTER FIVE 5.0 CONCLUSION AND RECOMMENDATIONS The SIWES attachment was a privilege and I never regretted exploring it because of the massive practical knowledge I tapped. To me, it was not just another academic requirement, I viewed it as a job and I have to work hard to contribute to my organization’s success and most importantly, my success. The SIWES programme has proved invaluable to me as it has improved my skills drastically in the applied aspects of mathematics in statistics. 5.1 Problems Encountered During the six month (6) training, below are some of the problems and challenges I encountered: • Industrial Training Placement: At first, it wasn’t so easy to secure a placement as some of the organizations I went to did not have enough room to take in Industrial Training students • Transportation: Due to the fact that my residence is quite far from the University of Ibadan, transportation was a major challenge for me throughout the training • Another major challenge I encountered was that as a student of mathematics, the statistics courses I took before my Industrial Training were limited to Probability I and II and Statistical Inference I; therefore, I wasn’t so familiar with the use of most of the statistical software packages. 5.2 Conclusion I really thank God for this work experience scheme programme SIWES and the Industrial Training Fund (ITF) who established the programme for all institution because it has opened my eyes to how different data can be collected through the use of questionnaires, how to work on secondary data, how to type complex mathematical equations and documents using LaTeX, running different tests and so on, most of which I was ignorant of and would not have known if I just left school without the training. Lastly, one of the best places a statistics student and a mathematics student who probably wants to venture into statistics can have his or her six (6) months Industrial Training is the University of Ibadan Laboratory for Interdisciplinary Statistical Analysis as it bridges the gap 47 between the theoretical and practical statistics. Additionally, I was able to learn how to successfully carry out statistical analysis and also had an experience of field survey in statistics. 5.3 Recommendations After the six (6) months training programme in the University of Ibadan Laboratory for Interdisciplinary Statistical Analysis, coupled with the experience I have acquired, I therefore recommend the following: • Place of attachment should be found for respective students in order to make it easy for the students • The training should be properly monitored by the school and the Industrial Training Fund (ITF) • Statisticians should be posted to LISA for their internships as it is one of the best places for statistical exposure • The activities of LISA should be supported and funded by the Government and/or the university • Various departments in the institutions should try as much as possible to assist their students with placements to organizations • LISA should be established in almost every university in Nigeria having a department of statistics • For subsequent trainees being taken up by the organization, I recommend a more thorough supervision of their training programme. • The Industrial Training Fund (ITF) should liaise with some companies where students can be taken up for their Industrial Training 48 REFERENCES Federal University of Technology, Akure (2015), FUTA SIWES Students Handbook; Industrial Training Unit (ITU) FUTA University of Ibadan Laboratory for Interdisciplinary Statistical Analysis (UI-LISA) – Brochure https://sites.google.com/site/uilisanigeria LaTeX for beginners; Edition 5, (2014, March) Document Reference: 3722-2014 Chapter 1: Introduction Mafe, O. A. T. (2009). Guide to Successful Participation in SIWES: Panaf Publishing Inc., Abuja and Lagos Mafe, O. A. T. (2010) Effectiveness of SIWES with respect to chemical engineering; Paper presented at the Workshop on “Achieving the Necessary Professional Standards in Chemical Engineering in our Universities” University of Lagos 49