Utilisation of Statistical Packages for Data Analysis among Post-Graduate Students in Universities in Rivers State

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Abstract

This study investigated the utilisation of statistical packages for data analysis among post-graduate students in Universities in Rivers State. The study was guided by four research questions and their corresponding null hypotheses. The design for the study is descriptive research design. The population of the study is 397 post graduate students in Universities in Rivers State with sample size of 91. One instrument was used for the study titled "Utilisation of Statistical Packages for Data Analysis (USPDA). Items in the instrument were validated by the two experts in the field of Measurement and Evaluation, from Department of Psychology, Guidance and Counseling University of Port Harcourt. Both face and content validity of the instrument was done. The construct validity was also done using factor analysis. The significant value obtained (0.000<0.005) shows that the instrument is reasonably valid. To ensure the reliability of the instrument Cronbach alpha (α) technique was used for all the items in the instrument. Copies of the instrument were administered to 20 post graduate students who were not part of the sample for the study and then the scores obtained were subjected to Cronbach alpha technique. The alpha coefficients of 0.78 and 0.69 were obtained for SPSS and Excel respectively. Research questions were answered using mean and standard deviation. Hypotheses were tested using Z-Test at 0.05 level of significance with the use of Statistical Packages for Social Sciences (SPSS) version 20. Results revealed that statistical package is useful to post graduate students and is utilized among male and female post graduate students in Universities in Rivers State and is most used by male students. The use of statistical package essentially reduces errors in data analysis, presentation and interpretation of result in research among students. Most schools, companies, business owners' governmental agencies use statistical packages for data analysis and presentation of results in either tabular or graphical form. It was recommended that Students as well as teaching and non-teaching staff should learn to improve their efficiency on the usage of statistical packages especially the one that is suitable for all analysis in their areas.

Key Words: Spss, Excel

Introduction

As the world continues to progress technologically, traditional and analogue methods of service provision have been replaced with more efficient and effective digital solutions. One area that has benefited greatly from technological advancements is research and data analysis. In the past, data analysis was a rigorous and time-consuming process that often involved manual calculations and analysis using paper and pen (Abatan & Olayemi, 2014). However, with the advent of computers and statistical packages, data analysis has become much simpler, faster, and more accurate.

Statistical packages are software programs designed to simplify the calculation and presentation of statistics, and reduce errors in data analysis (Kwashabawa, 2021). These packages have greatly contributed to the development of research in universities around the world, including Nigeria in the 21st century (Eshasrenan, 2006). The high demand for information and communication technology (ICT) has made it a major priority for researchers and organizations.

With the use of statistical packages, researchers can easily analyze and validate data, and produce accurate figures for their analysis. Multidimensional statistical packages are particularly useful in educational data analysis, and offer a wide range of tools for statistical data analysis. While prior programming knowledge is not required, basic computer skills and an understanding of statistics are necessary to utilize these packages.

Statistical Packages for Social Sciences (SPSS)

Statistical Package for Social Sciences (SPSS) has been developed by three students at the University of Stanford (Norman & Hadlai, 2008), after graduation, Nie moved to the University of Chicago, joined by Hull (National Opinion Research Center), initially not meant for distribution outside their home university, the publication of the first manual made SPSS widely known and used which was developed for International Business Machine (IBM) mainframe computers, versions for most other important mainframe brands and later for the so-called minicomputers (like DEC, PR1ME,) were available. SPSS Inc. was the founded in 1975. In 2009, International Business Machine (IBM) acquired SPSS; it is now fully integrated into the IBM Corporation Business Analytics Software portfolio (Norman & Hadlai, 2008).

SPSS- (Statistical Package for the Social Sciences now Statistical products and Solution services) is most widely used in social science disciplines and courses. SPSS is the oldest software programmes developed and made available in 1960s and has been redeveloped over the years, the latest version is SPSS 28.0.1 which was produced in April 2022. (Astro.com, 2022). Many sociologists, psychologists and social workers use this programme to enter their research data and formulate results. Although social science uses SPSS more widely than other fields, many find it easy to navigate with SPSS because it is a package that many beginners enjoy due to its very easy to use nature. SPSS has a "point and click" interface that allows you to use pull down menus to select commands that you wish to perform. Odusina (2011) disclosed that working with SPSS demand some background knowledge of statistics. There are slight variations in the difference version of SPSS e.g. version 10, 11, 12, 13, 14, 15, 16, etc.

SPSS assists the user in describing data, testing hypotheses and looking for a correlation or relationship between one or more variables. SPSS is very suitable for most regression analysis and different kinds of ANOVA (regression, logistic regression, survival analysis, analysis of variance, factor analysis, multivariate analysis but not suitable for time series analysis and multilevel regression analysis, Wikipedia, 2014). Many students, both undergraduate and graduate, are taught SPSS during research analysis classes in demography, psychology, sociology and other social sciences. The IBM SPSS Statistics is landmark advancement in Information and Communication Technology (ICT) that is radically changing the world swiftly. IBM SPSS statistic is indeed the most comprehensive statistical software system for accurate analysis of all sorts of data, from the least to the most complex in various fields (Kpolovie, 2018).

MS-Excel

According to Joshi, (2019), the first to think of 'electronic cell' with value, which is actually the result of underlying formulae within the table, was Dan Bricklin in 1978. He got this idea while attending a statistical workshop, observing the presenter erasing and writing formula and value repeatedly. This is the basic fundamental of all spreadsheet software even today. Dan Bricklin built primary level spreadsheet software having just 5 columns and 20 rows. Later Dan Bricklin and Bob Frankston formed a company named 'VisiCorp' to research regarding these magical and powerful 'electronic cells'! They worked hard together and the very first spreadsheet software 'Visicalc' was introduced by the fall of 1978. The name "VisiCalc" is a compressed form of the phrase "visible calculator". Frankston described VisiCalc as a "magic sheet of electronic paper that can perform calculations and recalculations, which allows the user to solve the problems using familiar tools and concepts." VisiCalc became an instant success. (Joshi, 2019).

At the same time in early 1982, Microsoft introduced 'Multiplan', a healthy competitor of 'VisiCalc' by VisiCorp and 'Lotus 1-2-3' by Lotus Development Corporation (now merged into IBM). The market for electronic spreadsheet software was growing rapidly in the early 1980s. VisiCalc was unable to stand up against the demand and growing requirements. During that time, "Lotus 1-2-3" was marketed as a three-in-one integrated solution that handled spreadsheet calculations, database functionality, and graphical charts. Thus the name 'Lotus 1-2-3' became famous rapidly and overtook almost the entire market of Visicalc and Multiplan due to their limited functionality and poor user-friendly environment. After making wide market research and essential changes and improvements, Multiplan was launched as Excel. Lotus 1-2-3 used the "A1" format for expressing the current cell pointer position whereas Multiplan used the "R1C1" format. In spite of having mass acceptance for the "R1C1" style cell address style, Microsoft facilitated both the address styles. Excel was originally written for the 512K Apple Macintosh and also supported PC-DOS systems. It was one of the first spreadsheets to use a graphical interface with pull-down menus and a point and click capability using a mouse pointing device. The Excel spreadsheet with a graphical user interface was easier for most of people to use, than

the command line interface of PC-DOS spreadsheet products. Many people bought Apple Macintoshes so that they could use Bill Gates' Excel spreadsheet program (Astro.com, 2022).

Microsoft launched the 'Windows' (GUI) operating system in 1987; and released a brand new version of Excel with more presentation options, Mailing options, WordArt, printing setups, What-If Analysis tools and the ability to customise spreadsheets. To avoid some naming conflicts and legal battles, Microsoft decided to prefix 'MS' to all its products. Thus, this new version of excel was introduced as 'MS-Excel'. Microsoft added visual basic for applications (VBA) as 'Macro' to Excel In 1993 to give users automation functionality and customised solutions development ability. With the launch of this spreadsheet software with a new look, other spreadsheet products were thrown away magically and MS-Excel proved its popularity unbeatably. In 2006, Microsoft launched MS-Office 2007 with totally a new concept of Tabs and Ribbons instead of Menus and Toolbars. This is the biggest change that Microsoft has made to the application's appearance until now, revolutionizing the information technology world. This new version introduced as 'Ribbon' version. Since then, until today, the ribbon versions have become undoubtedly popular (Numerical Analytic Instrument, 2020). As of 2018, Excel is the most widely used spreadsheet in the market, offering users a power-house of organisation, computation and analysis tools. Most spreadsheet users like Statisticians, Financial Analysts, Business Analysts, Data Operation Experts, Automation Specialists and many more have stated that Excel is the premier business computation tool.

Importance of statistical packages for data analysis

Advantages of using statistical software include being free from manual tasks, saving time, dealing with large amounts of data, having more flexibility, and obtaining valid and reliable results. The importance of software in data analysis can hardly be overstated. For a business, the software will either help it to make more money or will allow it to save money. This is because using these tools, we can analyse the business as a whole. We can integrate all the data sets from different parts of the business and then get insights that can help us to make decisions that are most appropriate for the specific situation. Without this software, a business would be forced to do everything manually, using a lot of guesswork. With the help of this software, data sets from across the business can be analysed using different approaches. This will help the company take preventive measures against unforeseen events in future. Software in analytics is usually used for a variety of tasks, including the following: data cleansing, data mining, data modeling, data visualisation and forecasting. The software also integrates the data sets with external databases, allowing the business to gain access to additional information.

Data cleansing is done when the analytics software automatically cleans the data sets of invalid records and out-of-date information. Meta analysis software allows one to get insights into the business process and identify the problems related to the business.

Data mining is a term that is used to describe the process of extracting insights from large sets of unstructured data. It is achieved by the use of software tools that allow the business to mine data

from diverse sources. The tools are designed to identify relationships among the data, allowing business managers to build up a framework to understand the various business elements. Businesses that require a lot of data are naturally attracted towards the idea of using software in data mining. The data mined can include customer and employee records, financial statements, and other similar kinds of information. It is essential that the business employ the right software for the purpose. The best software generates reliable results and should be very easy to use. It should also be capable of generating reports in suitable formats that are easy to read, analyse and manipulate.

To sum up, software for data analysis makes it possible for businesses to acquire the necessary data without having to spend a lot of money hiring an outside company. The software allows for the easy handling of large amounts of data without losing important data or spending valuable time. It also allows for accurate business judgments. Furthermore, the software reduces business costs by allowing businesses to use data in a profitable manner. Finally, the software improves business productivity and profitability by allowing businesses to make more informed decisions.

Features of Statistical Software

Statistical software has some common characteristics that make it reliable and suitable for data analysis:

3. Data editor is in rows and columns which make it very easy to enter numeric data.
4. There is availability of menu bar comprises drop-down menu, quick analysis as well as brief user manual.
5. Statistical level of measurement is put into consideration in data entry
6. They follow the initial steps in research project

a. Getting your data ready to enter into the software.
b. Defining and labeling variable
c. Entering data appropriately with each row containing each case and each column as variable.
d. Data checking and cleaning is possible.

This study is supported by exploratory data analysis theory by Kukey, John Wilder, (1970). The philosophy behind this approach is to examine the data before applying a specific probability model. According to Tukey, (1970), exploratory data analysis is similar to detective work. In exploratory data analysis, these clues can be numerical and (very often) graphical. Indeed, Tukey introduced several new semi-graphical data representation tools to help with exploratory data analysis, including the “box and whisker plot” (also known as the box plot).

Exploratory data analysis (EDA) is an approach to data analysis where the features and characteristics of the data are reviewed with an “open mind”; in other words, without attempting to apply any particular model to the data. It is often used upon first contact with the data, before any models have been chosen for the structural or stochastic components, and it is also used to

look for deviations from common models. It also refers to the critical process of performing initial investigations on data so as to discover patterns, to spot anomalies, to test hypothesis and to check assumptions with the help of summary statistics and graphical representations. (Patil, 2018).

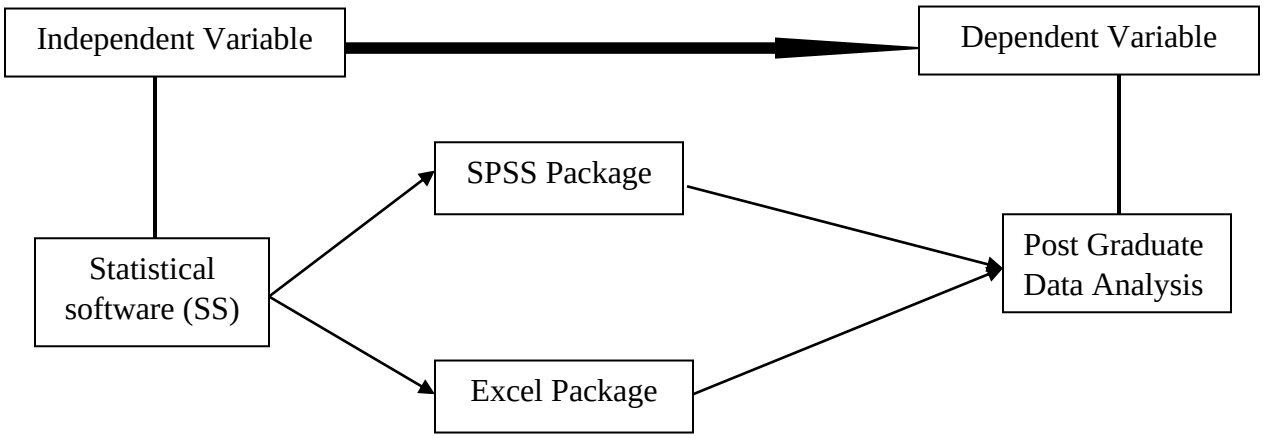

Fig 2.1: Conceptual Framework of statistical Packages on Post Graduate Data Analysis.

Statement of the Problems

Researchers are faced with series of statistical problems especially for data analysis. This has instilled phobia among researchers; some are caused due to inadequate knowledge of mathematical calculation as well as statistical calculation. Hence must researcher prefer to take their data analysis to experts in data analysis because of the calculation phobia. It has also been shown that data not properly analysed will yield wrong generalisation of findings which will totally misinterpret the empirical computation of that data. Consequently, data analysed whether by the researcher or data analyst is prone to clumsy and inaccurate result if analysed manually which can lead to error in presentation of result. This error can be as a result of computation of required formula for a particular statistical tool or in the process of calculation or table reading for a particular distribution or approximation of the calculated figure etc. Furthermore, time consumption and delay involved in rigorous step-by-step calculation of these statistical tools for a particular research analysis is also a major problem for researchers, particularly when there is a time bound for a particular research to be completed. This will obviously post a treat in the delay of the research thereby elongating the stipulated period for a particular research to be completed. This is particularly pre-dominant among post-graduate students in various tertiary institutions especially institutions that lack the adequate knowledge of statistical packages for data analysis and the application of a particular statistical package suitable for a particular research design.

Again, it has also shown that most of the researchers' supervisors have no knowledge of the usage of statistical package for data analysis thereby bending to the traditional method of data analysis. This is because some of these supervisors are not properly trained and has refused to enroll for the professional training of these statistical packages for data analysis. They prefer the manual way of analysis thereby instructing most of the researchers to get their data analysed manually in order for them to adequately interpret them due to lack of adequate knowledge of the statistical packages for data analysis. This research will provide some of the posting issues militating against data analysis among post-graduate students in Universities in Rivers State.

With the adequate knowledge and application of statistical packages for data analysis, data can be properly analysed without any clumsiness, error free, short period of time and accuracy by the researchers especially the post-graduate students in Rivers state Universities. The effectiveness of research is embedded in adequate use of statistical packages; hence, it is highly advisable that researchers master any of the packages for analysis especially empirical research. To this end does this study investigate the utilisation of statistical packages for data analysis among post-graduate students in Universities in Rivers State.

Aim and Objectives of the Study

The aim of this study is to investigate the utilisation of statistical packages for data analysis among post-graduate students in Universities in Rivers State.

The following specific objectives guided the study;

1. Determine the extent to which gender differ in the utilisation of Statistical Package for Social Science (SPSS) for data analysis among post-graduate students in universities in Rivers State.
2. Determine the extent to which utilisation of Statistical Package for Social Science (SPSS) for research differ among post-graduate students in universities in Rivers State based on university ownership.
3. Determine the extent to which gender differ in the utilisation of Excel package for data analysis among post-graduate students in universities in Rivers State.
4. Determine the extent to which utilisation of Excel package for data analysis differs among Post-Graduate students in Universities in Rivers State based on university ownership.

Research Questions

1. To what extent does gender differ in the utilisation of Statistical Package for Social Science (SPSS) for data analysis among post-graduate students in universities in Rivers State?
2. To what extent does the utilisation of Statistical Package for Social Science (SPSS) for data analysis differs among post-graduate students based on university school ownership in Rivers State?

3. To what extent does gender differ in the utilisation of Excel Package for data analysis among post-graduate students in universities in Rivers State?
4. To what extent does the utilisation of Excel Package for data analysis differs among post-graduate students based on university school ownership in Rivers State?

Hypotheses

1. Gender does not differ in the utilisation of Statistical Package for Social Science (SPSS) for data analysis among post graduate students in universities in Rivers State.
2. The utilisation of Statistical Package for Social Science (SPSS) for data analysis does not differ among post graduate students based on university ownership.
3. Gender does not differ in the utilisation of Excel Packages for data analysis among post graduate students in universities in Rivers State.
4. The utilisation of Excel Packages for data analysis does not differ among post graduate students based on university ownership.

Methodology

This study investigated the utilisation of statistical packages for data analysis among post-graduate students in Universities in Rivers State. The population of this study consists of three hundred and ninety seven (397) post-graduate students in Federal, State and private Universities in Rivers State. Descriptive research design was adopted. Stratified random sampling technique was adopted for this study. Proportionate stratified random sampling formula was used to get a sample size of 91 post graduate students from federal, state and private universities in Rivers State. Two self structured questionnaires were used for collection of data. A Four (4) points modified Likert scale was adopted for the questionnaire, such as Strongly Agreed; (SA) = 4, Agree (A) = 3, Disagree (D) = 2, and Strongly Disagreed (SD) = 1. The instruments were validated by experts from measurement and evaluation, department of educational psychology. The reliability of the instrument was determined using Cron-bash Alpha which was found to be 0.78 and 0.69 for SPSS and Excel. This shows that the instruments were reliable for the study. In this study, descriptive statistics such as mean and standard deviation was adopted and used in answering the research questions. The hypotheses were tested with Z-Test at 0.05 level of significance using Special Packages for Social Sciences (SPSS) version 20.

Result

Research question (1 and 2)

1. To what extent does gender differ in the utilisation of Statistical Package for Social Science (SPSS) for data analysis among post-graduate students in universities in Rivers State?
2. To what extent does the utilisation of Statistical Package for Social Science (SPSS) for data analysis differs among post-graduate students based on university school ownership in Rivers State?

Hypothesis (1 and 2)

1. Gender does not differ in the utilisation of Statistical Package for Social Science (SPSS) for data analysis among post graduate students in universities in Rivers State.
2. The utilisation of Statistical Package for Social Science (SPSS) for data analysis does not differ among post graduate students based on university ownership.

Descriptive statistics and Z-test for the utilisation of SPSS for data analysis among Post Graduate students in Universities in Rivers State based on Gender or school ownership.

Paired Samples Statistics

		Mean	n	Std. Deviation	Std. Error Mean
Pair 1	SPSS	7.3902	82	1.78993	.19766
	GENDER	1.5000	82	.50308	.05556
Pair 2	SCH_OWNER	2.2683	82	.62950	.06952

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
SPSS - GENDER	5.89024	1.91167	.21111	5.47020	6.31028	27.902	81	.000
SPSS - SCH_OWNER	5.12195	2.01470	.22249	4.67927	5.56463	23.021	81	.561

The above analysis shows descriptive statistics and Z-test for the utilisation of SPSS for data analysis among post graduate students in Universities in Rivers State based on Gender or school ownership. It shows the descriptive statistics of SPSS (N =82, mean = 7.3902, standard deviation = 1.78993 and standard error = .19766), gender (N= 82, Mean =1.5000, standard deviation = .50308 and standard error = .05556) while school ownership (N= 82 mean = 2.2683 standard deviation = .62950 and standard error = .06952).

From the testing of the corresponding null hypothesis 1, it was indicated that the Z-test of 27.902 was gotten at 81 degree of freedom, with a corresponding p-value of 0.000. Since the p-value was less than 0.05, this result therefore indicates that gender differs in the utilisation of statistical package for Social Science (SPSS) among post graduate students in Universities in Rivers State. Also, for null hypothesis 2, Z-test of 23.021 was gotten from 81 degree of freedom with a corresponding p-value of 0.651, since the P-value was greater than 0.05, this result therefore indicates that utilisation of Statistical Package for Social Science (SPSS) for data analysis does not differ among post graduate students based on university ownership.

Research question (3 and 4)

3. To what extent does gender differ in the utilisation of Excel Package for data analysis among post-graduate students in universities in Rivers State?
4. To what extent does the utilisation of Excel Package for data analysis differs among post-graduate students based on university school ownership in Rivers State?

Hypothesis (3 and 4)

3. Gender does not differ in the utilisation of Excel Packages for data analysis among post graduate students in universities in Rivers State.
4. The utilisation of Excel Packages for data analysis does not differ among post graduate students based on university ownership.

Descriptive statistics and Z-test for the utilisation of Excel Package for data analysis among Post Graduate students in Universities in Rivers State based on Gender or school ownership.

Paired Samples Statistics

		Mean	n	Std. Deviation	Std. Error Mean
Pair 1	EXCEL	7.4268	82	1.64077	.18119
	GENDER	1.5000	82	.50308	.05556
Pair 2	SCH_OWNER	2.2683	82	.62950	.06952

Paired Samples Test

	Paired Differences					t	df	Sig. (2-tailed)
	Mean	Std. Deviation	Std. Error Mean	95% Confidence Interval of the Difference				
				Lower	Upper			
EXCEL - GENDER	5.92683	1.72691	.19071	5.54738	6.30627	31.078	81	.000
EXCEL - SCH_OWNER	5.15854	1.60608	.17736	4.80564	5.51143	29.085	81	.000

The above analysis shows descriptive statistics and Z-test for the utilisation of Excel for data analysis among post graduate students in Universities in Rivers State based on Gender or school ownership. It shows the descriptive statistics of Excel (N =82, mean = 7.4268, standard deviation = 1.64077 and standard error = .18119), gender (N= 82, Mean =1.5000, standard deviation = .50308 and standard error = .05556) while school ownership (N= 82 mean = 2.2683 standard deviation = .62950 and standard error = .06952).

The testing of the corresponding null hypothesis 3, it was indicated that the Z-test of 31.078 was gotten at 81 degree of freedom, with a corresponding p-value of 0.000. Since the p-value was less than 0.05, this result therefore indicates that gender differs in the utilisation of Excel Packages for data analysis among post graduate students in universities in Rivers State. Consequently, for null hypothesis 4, Z-test of 29.085 gotten from degree of freedom 81 with a corresponding p-value of 0.000, since the (p-value < 0.05), this result therefore indicates that utilisation of Excel Packages for data analysis differ among post graduate students based on university ownership.

Discussion of findings

The utilisation of Statistical Package for Social Science (SPSS) for data analysis based on gender and school ownership

The result from research question one and two and the corresponding hypotheses, the result showed that gender differs significantly in the utilisation of SPSS for data analysis among post graduate students. Statistical Package for Social Sciences is used for data analysis among post graduate students by either male or female post graduate students; SPSS is used frequently by different field of studies. This finding is supported by finding of (Astro.com, 2022) which asserts

that many sociologists, psychologists and social workers use this SPSS programme to enter their research data and formulate results. This means that the use of SPSS makes data entry interpretation and presentation easier for the researchers, company or industries. Also, the finding was supported by the study of Odusina (2011), that the use of SPSS enhances the background of statistics. SPSS as a statistical package is rooted in statistical operations, it is very vital that all the post graduate students using SPSS to be conversant with statistical calculation as its output depicts statistical results and information. In line with the findings of Noel, (2018), SPSS can perform analysis on anova, regression, correlation, ancova etc. Also, the result from hypothesis two showed that the utilisation of Statistical Package for Social Science (SPSS) for data analysis does not differ among post graduate students based on university ownership. This means that SPSS is being used by both public and private Universities in Rivers State. The application of SPSS cut across all filed of studies in Universities in Nigeria. This finding is supported by findings of Cabrini Grácio & Garrutti, (2006), which state that the wide application of the SPSS method in studying education and social phenomena and processes is not accidental; it is applied both in natural and social sciences. The finding is also supported by (Idris, 2018), which postulates that the goal of applying the SPSS in higher education was that students learn the basics of statistics to understand and evaluate information in the world better. This explains that the use of SPSS in Universities in Nigeria is vital among post graduate students' in Rivers State Universities for data analysis.

The utilisation of Excel Package for data analysis based on gender and school ownership

The result in hypothesis three showed that gender differs in the utilisation of Excel Packages for data analysis among post graduate students in universities in Rivers State. This means that the use of Excel package for data analysis is highly significant in the gender of post graduate students. Excel is used for charts presentation and visualisation which helps the students during leaning. This finding is supported by the finding of Oliver, (2010) which affirms that creating different graphs and charts from the same spreadsheet lets students compare different representations and better understand of the meaning of various graphs and charts. Also in line with the recommendation of Smeets (2005), that teachers can use Excel to discuss statistics and probability in class will help in teaching and learning of data collection related subjects or courses in schools. Visualisation of numerical concepts can be better presented using excel package this is line with the finding of Clever, (2009), that spreadsheets are widely believed to help students visualize numerical concepts better than other, non-dynamic tools; new studies have attempted to capture their comparative impact on achievement. Pedagogical studies is enhanced by the use of excel package which is supported by Horngren, (2006) that spreadsheet program like Excel has been used for decades as a pedagogical aid, as a skill building tool, as a platform to build teaching materials and to learn difficult problems which are otherwise impossible to learn in a chalk and talk environment.

The result in hypothesis four showed that the utilisation of Excel Packages for data analysis differs among post graduate students based on university ownership. This means that the use of excel by post graduate students differs significantly in both private and public Universities in

Rivers State. Considering the importance of excel package for data analysis, it is vital that excel should be integrated for data analysis among post graduate by the university. This is supported by Federal Ministry of Education, (2011) which postulates that integration of Information and communication technology in education is important in learning and teaching process as it increases learners' motivation, makes students understand better abstract concepts, allows collaborative learning and provides the opportunity for learning through simulation. As an ICT package, excel can be used for cash analysis for banks, companies as well as governmental agencies. This finding is supported by finding of Abatan & Micheal, (2014) which confirms that excel can be used to analyse data, for example, in accounts, budgets, billing and many other areas. However, the use of excel package among post graduate students' in both public and private universities is absolutely important as it will help the students within these schools present collected data for analysis. The operation of excel and data entry differs significantly from the other statistical packages, as such, it is recommended that students should embark on basic training for the usage of this package for data analysis in both private and public universities for better understanding of the application of the said statistical package.

Summary of Findings

The major summary of the study are as follows:

1. The usage of some statistical package differs in gender for data analysis and some do not differ in gender for data analysis among post graduate students in Universities in Rivers State.
2. Statistical packages for data analysis are mostly used by male post graduate students in Universities in Rivers State than female post graduate students in Universities in Rivers State
3. Statistical package is used in all Universities in Rivers State among post graduate students
4. Statistical package is mostly used in public Universities than in Private universities in Rivers State.
5. SPSS is the most used statistical package for data analysis followed by Excel package for data analysis among post graduate students in Universities in Rivers State.
6. Most post graduate students do not know how to use these statistical packages for data analysis in all the Universities in Rivers State.
7. There are other statistical packages used for data analysis among post graduate students in Universities in Rivers State such as Python software, Minitab software, X-caliber etc. these packages have been proven to effectively analyze data like the once studied in this research.

Conclusion

Based on the findings, statistical package is useful to post graduate students and is utilised among male and female post graduate students in Universities in Rivers state and is most used by male students. The use of statistical package essentially reduces errors in data analysis,

presentation and interpretation of result in research among students. Most schools, companies, business owners, governmental agencies use statistical packages for data analysis and presentation of result in either tabular or graphically.

Recommendation

Based on the findings of the study, the following recommendations were made:

1) Students as well as teaching and non-teaching staff should learn to improve their efficiency on the usage of statistical software packages especially the one that is suitable for all analysis in their areas.
2) Researchers should be the data analyst for their research findings and seize from giving their research data out for another to analyse.
3) Choosing statistical software packages to learn should be based on suitability of the software for all possible analysis you may wish to be analysing. It was therefore recommended that at least two (2) should be chosen so that learning research analysis would be broaden and robust.
4) Nigeria institutions should encourage separate curriculum on the usage and application of statistical packages in research study just like other compulsory courses where students are trained with practical application of statistical packages in analyzsing data because research project/study at the end of a discipline should be based on pure or applied field work that solve existing problem in our society.

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