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**Assessing the Use of Statistical Techniques and
Tools in Master Dissertations:
The case of Linguistics Master Dissertations at M'sila
University.**

*Dissertation Submitted to the Department of English in Partial fulfillment of the
Requirements for the Master's Degree*

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June 2023

Declaration of Authorship

I hereby solemnly declare that the work I am going to present in this dissertation entitled:

**Assessing the Use of statistical tools and techniques in
Linguistics Master Dissertations: The case of Linguistic Master
Dissertations at M'sila University.**

Is my own to the limits of my knowledge. It has not been submitted before to any other institution or university and all sources I have used and quoted from have been indicated by means of complete references.

Signature



Dedication

This work is dedicated to all those who were a source of my inspiration and who contributed to the accomplishment of this research.

I dedicate this work to those who struggle to seek knowledge.

Acknowledgments

First, I am greatly indebted to my supervisor, Dr. Imane CHERIET, for her endless support and patience.

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Special thanks go to the English department staff of M'sila University for their guidance and help.

Abstract

This descriptive study's objective is to assess the use of statistical tools and techniques in linguistics master dissertations. Accordingly, it seeks to explore relevant methodological awareness about aspects related to data collection tools, research methods and sampling techniques used in master dissertations. It seeks to test the appropriateness of the used statistical tools, research methods and sampling techniques. Inductive content analysis is used as the main data collection tool. The sample of the study constituted of 138 linguistics master dissertations from 2018 up to 2022 at the English language department at M'sila University. The collected corpora of linguistics master dissertations of the five academic years were analyzed by means of content analysis grid designed by the researcher for the purpose of this study. The data were analyzed quantitatively in frequencies and percentages. The findings of the study revealed that the most used data collection tool is the questionnaire, compared to the interview, the observation, and the test. It was found that most dissertations used the descriptive method and that almost all the dissertations did not include the validity and reliability of data collection methods. As for the statistical tools, it was found that the most used descriptive statistics are frequencies and percentages, and that only few studies used simple inferential statistics including only the T test. Advanced inferential statistics were not used in the whole five years corpus. Inappropriate use of sample size and sample selection methods was detected in this study. Eventually, this study recommends the need to provide linguistics students with adequate statistics knowledge in order to improve their practices and enhance the validity of their studies.

Keywords: Descriptive Statistics, Inferential Statistics, Research Methods, Reliability, Validity, Data Collection tools, Master Dissertation

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General Introduction

Introduction

- 1.Statement of the problem
- 2.The research questions
- 3.Objectives of the Study
- 4.Significance of the Study
- 5.Sample of the Study
- 6.Structure of the Study
7. Key Terms' definitions

Introduction

The university serves as a primary institution where students engage in advanced academic training within their respective fields of study subsequent to completing their undergraduate education. This period of academic instruction is crucial in fostering the development and adaptation of various dimensions of their personal and professional identities. Particularly students undergo psychological, personal, and collaborative growth, while also honing their scientific and academic competencies. Consequently, they gain enhanced awareness, consciousness, and a realistic perspective, enabling them to effectively plan their future career's paths in alignment with their unique abilities and potential.

However, Algerian universities assign greater importance to the development of the students' academic and scientific abilities and skills. From an academic perspective, they receive adequate knowledge, materials, and competencies in different modules that serve their field of study throughout their education at the university.

From a scientific perspective, i.e. scientific research skills, students are trained to accomplish different tasks related to scientific research, such as: doing research work through which each student employs the knowledge and skills of the scientific research that they develop and acquire throughout their training. Additionally, the most crucial part in developing and assessing the students' scientific skills is the accomplishment of a dissertation at the end of their academic training in order to graduate. The student is required to accomplish his research work in a specific time, according to specific norms and guidelines. This dissertation is the fruit of the student's academic development and training process at the university level especially for a Master's degree.

Recently, a growing interest is focused on the exploitation of Master's graduate dissertations as a try to shift into start-ups in Algerian universities in order to support the

economic sectors and valorise the importance of scientific research in that field. Therefore, it is crucial to focus the intention on the necessity of evaluating these Master dissertations and try to enhance the students' practices of the scientific research as a whole.

The previously published studies on the use of statistical tools and techniques in dissertations or articles have been descriptive in nature. However, less attention has been paid to assessing the methods that were inappropriate in these research papers and the techniques that should have been used instead. Therefore, further investigations are needed in order to explain the appropriate statistical tools and techniques that should be used in research dissertations and articles. Hence, the present study, tends verify whether the statistical tools used Linguistic Master Dissertations, at M'sila University, are appropriate or not.

1. Statement of the problem

As it has been mentioned above, writing a dissertation at the end of the academic formation at the university level is a requirement. It is one of the crucial tasks that students should do during the final academic year to obtain the Master's degree. This final product plays a vital role in reflecting the students' abilities in academic writing and scientific research.

In this regard, Bizzell (1992, p.75) stated that: "The increasing ability to write an academic paper for every university student becomes very important to develop academic thinking skill". Similarly, Hyland (2002) claimed that " To those who will become an expert in a particular field, academic writing ability is very crucial, including writing and publishing article, writing and publishing book, writing and presenting conference paper, and conducting scientific research (p.107).

In fact, most second-year master students seem to face some difficulties in conducting their research, reporting their results, and writing their thesis using academic writing style. Therefore, we can find that some students in Algerian universities tend to stop their graduate studies before obtaining their master's degrees because of the fact that they are not able to conduct scientific research or write a good dissertation based on coherent academic language.

Moreover, data from previous research showed that more than half of college students in the US who took doctoral degrees ended up with a dropout due to the requirements of dissertation preparation and writing (Cantor, 1993; Roberts, 2004). They had finished all the subjects, but they could not accomplish the last requirement of the doctoral program. Based on this fact, the phrase ABD (All But Dissertation) appeared to refer to those who could not finish their dissertation (Brause, 2000; Roberts, 2004).

One of the main difficulties, which students may face during the completion of their dissertations, is to conduct the practical part of the thesis which is also called the fieldwork of their research. During this phase, the student is required to select a sample for the study, collect the data, and do many other practical procedures in order to answer the research questions. The use of statistics is also one of the critical elements for the completion of this part.

In this regard, Adeyemi (2009, p.53) claims that, the use of appropriate statistical techniques is a critical requirement for effective conduction of the social and behavioural research. That statistics play a very important role in legitimizing the results of research and studies, it is not possible to trust any result without using statistical methods. Therefore, that the main focus of the present research is to explore the problems that EFL learners meet/ face in using /selecting the suitable research methods as well as their difficulties associated with the use of quantitative data analysis in the students' dissertations.

2. The research questions:

The main two research questions guiding this study are:

- What are the statistical measures used in Linguistics master's dissertations at M'sila University?
- How appropriate is the use of the statistical tools in Linguistics master dissertations at M'sila university?

Along with the main questions are the following sub-questions:

- How appropriate are the research methods used in linguistics master dissertations?
- How appropriate are the data collection tools used in linguistics master dissertations at M'sila University?
- Are reliability and validity of data collection tools considered in linguistics master dissertations at M'sila University?
- How appropriate are the sample size and the sampling methods used in linguistics master dissertations at M'sila university?

3. Objectives of the Study:

The present study aims to assess the use of statistical tools and techniques in Linguistics Master Dissertations, therefore, it seeks to:

- To find out the statistical tools and measures used in in Linguistics master's dissertations, and assess their appropriateness according to the criteria for their use.
- To detect the used research methods, data collection tools, and their psychometric characteristics used to calculate Validity and reliability used in Linguistics Master Dissertations in M'sila University.

- To examine the sample sized and sampling methods used in the selected dissertations and assess their appropriate use

4. Significance of the Study:

This study is important as it tackles one of the crucial areas in the Linguistics master's specialty which is the use of statistical tools and techniques used in writing Dissertations. It does not only shed light on the extent to which the statistical tools and techniques are used, but also seeks to explore the appropriateness of using these methods and techniques in Master's dissertations. This may contribute in revealing and highlighting the most critical errors related to the use of statistical methods in scientific research in that field, thus contribute to enhance the quality of the dissertations.

5. Sample of the Study:

The data of this study were collected from the corpus of the study. The selected corpus is a set of 138 Master Dissertations of different EFL students majoring in Linguistics, defended between 2018 and 2022.

6. Structure of the Study:

The present study is divided into 2 chapters in addition to a general introduction and a general conclusion. The chapters are presented in this dissertation as follows:

The first chapter includes the theoretical part of the study. It deals with the key terms' definitions, previous studies, and the theoretical background of variables of study, with a specific focus on the criteria of using statistical measures, simple inferential, and advanced inferential statistics measures.

The second chapter is devoted to the methodological framework of the study, the opted method, the pilot study, the population and the sample of the

study, data collection tools, and data analysis. It also includes the synthesis and discussion of the obtained results of this study as well as to draw conclusions.

7. Key Terms' definitions

- **Dissertation:** It is a systematic investigation of socially significant research questions that makes a contribution to the literature and demonstrates the skills of master students to conduct original research.
- **Statistics:** The term refers to the science of collecting, presenting, and analysing numerical data.
- **Descriptive statistics:** seeks to describe the relationship between variables in a sample or population.
- **Inferential Statistics:** Involved learning formal methods for drawing conclusions from data, which we will learn later in the text. (Mohammad, A, S. 2012, p. 32)

1. Review of literature:

Various previous studies have been devoted to study and to assess the use of statistical tools and techniques in academic dissertations and articles. Among these previous studies, the one of Ahmet, D, and Yusuf, I (2019), which they reviewed the Master's Theses in the Field of Social Studies and Education between 2008 and 2014. The researchers found that students have used Parametric Difference Tests in their master thesis.

Additionally, Russell T, et all (2016) **also** described the statistical methods used in quantitative and mixed methods articles between 2006 and 2010 in five education research journals. Their results indicated that the most common used statistical methods are the mean values.

Furthermore, another study was conducted by Karadağ. E. et al (2010) about the analysis of research methods and Statistical Techniques used in doctoral dissertations of the education sciences, in Turkey. It revealed that frequently used research methods consisted of descriptive statistics, and Kruskal Wallis-HH test were frequently used statistical technique for analysis.

Also, Al-Tarawneh's (2017) study on evaluation of the statistical methods used in Master's theses at Muatah University showed that the most common statistical methods are the arithmetic mean and standard deviation.

Moreover, studies such as: of Govil, Qasem and Gupta (2015), Al-Shafi'i et al. (2010), Said. (2009), Judith A. Kanu (2018), Ezel, T. et al. (2010), Archer, L. A. and Hsiao, Y. (2023), Subrata, N., Palash, D. (2018), and many others, aimed to evaluate statistical methods in theses, dissertations, and articles as well. More studies are discussed in details as follows:

1.1. The study of Archer. L. A. and Hsiao. Y. (2023):

"Examining the Frequency and Implementation of Validation Techniques: A Content Analysis of EdD Dissertations in Educational Leadership". The purpose of the study was to get a better understanding of the validation techniques utilized in dissertations published by EdD students. Forty-nine (49) dissertations were selected and examined for research methodologies, research design, and elements of rigorous validation techniques. The most frequently used methodology that was found was the quantitative (n = 30; 61.22%) followed by qualitative (n = 13; 26.53%). Among the quantitative studies, the most frequently used design was the survey (n = 18; 60%). The most commonly used design in qualitative studies was the case study (n = 6; 12.14%). Validation techniques for quantitative designs were mostly content validity (n = 18; 50.00%). Trustworthiness techniques for qualitative designs

were mostly member checking (n = 8; 19.51%). However, there were no legitimation techniques identified for mixed methods designs.

1.1 Study of Judith A. K. (2018):

"Evaluation of Statistical Tools used by Educational Researchers and Evaluators in Data Analysis of Journal Article Publications". This study investigated the statistical tools used by educational researchers in data analysis for journal article publications. It determined the prevalence and appropriateness of statistical tools for the conducted research in a sample of comprised 70 Journal article publications. The publications

were evaluated according to the type of statistical tools used for data analysis in order to assess the most prevalent tools among them and their appropriateness to address the research interest. The findings revealed that the most prevalent statistics used for data analysis in journal publications of NAERE and CON are the descriptive statistics. The findings also exposed that these journal article publications used: T-test, Multiple Regression, Analysis of Variance (ANOVA), Z-test, Correlation, Analysis of Covariance (ANCOVA), Chi-square, Improvement Index (INI), Factor analysis, Kendalla Tau and Multiple Regression Analysis (MANOVA).

1.2 Study of Subrata, N., Palash, D. (2018):

The major objective of this study was to determine the application of the different statistical tests in educational research, identify basic statistical tests used in educational research such as: t-test, z-test, ANOVA, MANOVA, ANCOVA, Chi square test and Kolmogorov-Smirnov test and to know the different statistical software used in educational research like Statistical Package for the Social Science (SPSS), Statistical Analysis System (SAS). Thus, data for this research have been collected from existing research papers, websites, books, and various online journals. Based on the analysis of this data, it was found

that the use of appropriate statistical techniques is a critical requirement for an effective conduction of social and behavioural research. Finally, in this paper researchers concluded that the skill, of selecting appropriate statistical tests, is very essential for making good and specific conclusions. Also, the use of statistical software becomes a significant part of data analysis.

1.3 Study of Al-Tarawneh. S. (2018):

This study aimed at assessing and Surveying the statistical methods used in the master theses in the faculty of Educational Sciences at Muatah University from 1996/1997 to 2016/2017. The sample of the study consisted of (526) Master's theses. The results of the study revealed that the statistical analyses commonly used were: Means ,Standard Deviations, Pearson Correlation Coefficient, variance Analyses(one way ANOVA, two way ANOVA) ,Scheffe Comparatives and Chi Test, and there were many advanced statistical methods that were not used : Path Analysis , canonical Correlation ,and others.

1.4 Study of Disman.A. M. and Barliana. S. M. (2017):

This study addresses the problem concerning the pattern of weaknesses in the students' research, particularly related to the use of research and statistical methods. The study is focused on the dissertations written by University Pendidikan Indonesia's School of Postgraduate Studies' students that used a quantitative approach based on the review undertaken by the school's commission from academic year 2012/2013 to 2013/2014. The study employed a qualitative approach and data analysis by using logical analysis of the review results. Findings of the study indicated that there are various weaknesses in the students' dissertations, particularly related to the way of thinking and inappropriate use of research method and statistical method. Inappropriate population, bias sampling technique, and inappropriate data analysis process and hypothesis testing are also found in the dissertations.

1.5 Study of Govil Qasem and Gupta (2015):

This study sought to find out the suitability of statistical methods used in the analysis of the data in Ph.D. theses of social science faculty in the Indian Universities. The sample consisted of 20 Ph.D. theses. The analysis of the study revealed that: 90% of the studies employed descriptive statistics and 79% employed appropriate methods according to the sample size and the number of variables. Data also showed that the common errors committed by the researchers while using statistical methods were critical and serious in nature. None of the researchers calculated the effect of the sample size in his/her thesis. 87% of the evaluated theses did not select their samples in an appropriate way and 36% of the researchers of social sciences used insufficient statistical methods in their theses.

1.6 Study of Aras. B. et al. (2015):

"Research Trends in Turkish Distance Education: A Content Analysis of Dissertations, 1986-2014". This research paper presents a content analytic approach on doctoral dissertations in the field of distance education in Turkish Higher Education context from the 1986 to 2014. A total of 61 dissertations were examined to explore keywords, academic discipline, research areas, theoretical/conceptual frameworks, research designs, research models, tests and analyses, data collection tools, participants, variables, and research interests. The results showed that the most frequently used data collection tools were questionnaire (N=192), interviews (N=118), document analysis (N=59), observations (N=17). Also, the researchers in the field frequently have used ANOVA (N=8), chi-square (N=8), factor analysis (N=8) and regression (N=8), all of which constitute 68% of all statistical methods (N=47) used in experimental studies. Correlation, t-test, path-analysis, meta-analysis, MANOVA, and cluster analysis were other statistical methods employed with 32%.

1.7 Study of Mohammad. A.S. (2012):

The study aimed at evaluating the statistical methods used in Educational Researches among Higher Education students at the Islamic University (IUG). The researcher adopted the descriptive analytical approach for all theses submitted to the faculty of education between 2006 and 2010. The sample was 414 theses. The results revealed that the descriptive statistical methods were used 9354 times in these theses, counting 81.25% of the total use of the statistical methods. The simple inferential statistical methods were used 2134 times, accounting for 18.54% of the total use of the statistical methods. The advanced inferential statistical methods were used 24 times in the theses submitted to the faculty of education's departments, accounting for 0.21% of the total use of the statistical methods.

1.8 Study of Afana.A (2011):

The aim of this study was to know the common mistakes committed by students in the graduate studies in Gaza (Islamic University, AL-Azhar University, Al-Aqsa University). To achieve this aim, the researcher used an observation card for watching videos of the defence of 53 master dissertations and particularly theses submitted in education colleges of the three universities in Gaza for three years further. Also, the researcher identified the common mistakes in forming the research structures which are 16 essential structures, that begin with the title and finish with copied mistakes. The study was concluded with the following results:

- The Master dissertations, at Islamic University, included three practical mistakes on the research questions, the previous studies, and the research sample.
- Students faced difficulties in defining or making research tools, especially in regard to content analysis, interview, and observation tools, which require training postgraduate students to prepare these tools in a practical way.
- It was not easy for the students to determine the appropriate type of statistical method.

- Most of the students do not know the inferential statistical types.

1.9 Study of Al-Shafi'i et al. (2010):

The aim of this research is to determine the use of statistical analyzes in theses (Majister and PhD) on Educational Psychology and Mental Health at the faculty of Education. The sample consisted of 75 dissertations. Findings obtained from this study revealed that: 88 % of the studies employed percentages and frequencies.

1.10 Study of Ezel. T. et al. (2010):

"Examination of data analyses used for master's theses in educational sciences". The purpose of this study was to examine the Master's theses written between 2000-2008, at the Institutions of Educational Sciences of Turkish state universities in terms of the used types of statistical techniques. It also explored the appropriateness of the use of statistical techniques with the data at hand. The researchers of this study developed a data collection instrument to be used in this qualitative text analysis. The results showed that quantitative studies were more prevalent than other research methods. Also, descriptive statistics, t-test, one-way ANOVA, and Pearson Product-Moment Correlation Coefficient were more commonly used than multivariate parametric and non-parametric data analytic techniques.

1.11 Study of Atallah and Al-Sheikh (2009):

The study sample consisted of 63 theses. The results exposed a lack of use of advanced statistical methods such as factor analysis, discriminant. It also showed the great use of descriptive statistics.

1.12 Study of Said. (2009):

The study intended to identify the statistical methods used in data processing in university theses (Majisters - PhD), completed in the field of library information science, with an indication of the types of statistical methods used in analyzing and interpreting data. It also

aimed at determining the most used statistical method in these theses, in addition to the work of A list of university dissertations for the advantage of researchers and postgraduate students. To do that, this study opted for the documentary survey method as a tool for collecting data. The study reached several conclusions, the most important of which are:

- Most researchers (69.1%) use the percentage in analyzing the data contained in university theses, as it amounted to
- the use of the statistical tests method came in second place with a percentage of 13.5% of the total number of university theses,
- then the use of Measures of central tendency ranked third, with a percentage of 12.4%.

1.13 Study of Zakri (2006):

“How to choose and determine the size of statistical samples (analytical and evaluation study)”. The study aimed to identify:

- the most used types of samples used in majister's theses
- the most used methods for selecting the type of probability sample,
- the suitability of the type, and the sample to the nature of the community
- the extent to which the sample represents the community.

The study used the descriptive analytical and evaluative method. The study population consisted of all majister's theses of the scientific degree in the departments of Education at Um Al-Qura University, from 1999 to 2003. The results concluded that: the random sampling is the most used type, and the least is the quota sample. There are majister's theses in which the researchers did not specify the type of sample chosen. Also, there are a number of theses in which the extent to which the sample represents the community was not specified.

1.14 Study of Al-Nabhan (1998):

"a survey of the reality of master's theses in education and psychology in Jordanian universities during the years 1971-1988". the results showed that 94 percent of the studies were uni variate and the most analysis method is the (T) test. It also showed that most of the studies did not use advanced statistical methods.

Chapter One: Theoretical Background

Introduction

2.The theoretical background of the study variables

2.1. The dissertation

2.1.1. definitions of “dissertation”

2.1.3. Dissertation characteristics + add process writing (structure +content)

2.2. The Statistics

2.2.1. Definition of Statistics

2.2.2. The Reasons to Study Statistics

2.2.3. Functions of Statistics

2.2.4. Types of Statistics

2.2.5. Criteria for using Statistical Measures

2.2.6. Criteria for using Simple Inferential Statistical Measures

2.2.7. Criteria for using advanced inferential Statistical Measures

Introduction

This chapter highlights the key terms and concepts of the study. It offers a brief description of the study variables which are: “dissertation and statistics”. Throughout this chapter, the researcher focused on the criteria for using statistical, simple inferential, and advanced inferential statistical measures.

2.The theoretical background of the study variables:

2.1. The dissertation:

The dissertation of graduation is the fruit of the university education. It is a piece of academic writing conducted by the student and at the final year of the university training in order to obtain the intended degree. It reflects the students’ knowledge and skills acquired and developed throughout their training period, and it is considered as a requirement to complete university studies. However, the production of this document requires students to have solid research basis, a good level of academic writing, a sufficient knowledge of the scientific research norms as well as good analysis skills. This will help students to submit an effective and successful research work.

2.1.1.Definitions of “Dissertation”:

The dissertation is an academic document fulfilled to the requirement of a certain degree and follows specific norms and rules to be produced. It should be created and submitted by the student at the end of his academic training in order to graduate. It has been defined differently according to different researchers.

James P. S. (2012, p.1), defines “**the dissertation**” as: “A systematic investigation of a socially significant research question that makes a contribution to the literature and demonstrates the skill of doctoral students to conduct original research. Dissertation research

is a collaborative process primarily involving students and their major professors with additional input and evaluation provided by the supervisory committee”

According to Biggam, J. (2008, p.11): “A master’s dissertation is a document that includes about 15,000 words and that requires from first time researchers to be prepared to make efforts to get through a long journey”.

This document is required to respect some conditions. Among these conditions is that the topic of the thesis must be significant, original, authentic, and scientifically convincing, the thesis should follow scientific research norms and rules and it should be presented on the allocated time.

2.1.2.The Components of Dissertation:

Mainly, during the process of writing a dissertation students pass through different stages and produces different drafts and document before the final copy is prepared. James P. S. (2012, p.2) divides conducting a research dissertation to four document which are: **the dissertation concept paper, the dissertation prospectus, the dissertation, and the dissertation manuscript.**

2.1.2.1 Dissertation concept paper:

The dissertation concept paper, sometimes referred to as a pre-prospectus paper, is a brief twelve to fifteen pages’ research paper that describes: the interest of the thesis, what is expected be studied in the

proposed dissertation, why it needs to be studied, and how it might be studied. It also presents the basic concepts and methods for the dissertation. It includes the following sections:

- Introduction (What will be included in the paper by the headings indicated as follows.)
- Statement of the Problem.
- Research Questions.
- Social Significance of the Problem.
- Hypotheses (if needed).
- Research Design.
- Variables.
- Measures.
- Treatment (if needed).
- Participants.
- Data Analysis.
- Procedures.
- References.

2.1.2.2 Dissertation prospectus:

A dissertation prospectus is the complete plan for accomplishing the dissertation and is built upon the dissertation concept paper. The prospectus provides an opportunity for the supervisory committee to review the appropriateness of the research questions based upon the student's critical review of the literature. It includes the following components:

- Title page.
- Signature page.
- Table of Contents.
- List of Tables (if needed).
- List of Figures (if needed).

- Chapter1: Introduction.
- Chapter2: Review of the Literature.
- Chapter 3: Methodology.
- Tables (if needed).
- Figures (if needed).
- References.
- Appendices.

2.1.2.3. Dissertation Content:

The dissertation is the final presentation of the design, execution, and interpretation of the research that was planned in the dissertation prospectus. The dissertation defense allows students to:

- a) demonstrate that the procedures arranged on the dissertation prospectus were effectively accomplished.
- b) explain how the findings were obtained and presents the results
- c) support the discussion, implications, and conclusions of the research.

This **section** of the research includes the following components:

- Title page.
- Signature page.
- Dedication (optional).
- Acknowledgments (optional).
- Table of contents.
- List of Tables.
- List of Figures.
- Biography.

- Abstract.
- Chapter 1: Introduction.
- Chapter 2: Review of the Literature.
- Chapter 3: Methodology.
- Chapter 4: Findings.
- Chapter 5: Discussion.
- References.
- Appendices.

2.1.2.4. Dissertation manuscript:

The dissertation manuscript is a concise presentation of the literature review, the research questions, the research methodology, the findings, the discussion of the findings, and the implications of the research. The objective of preparing the dissertation manuscript is to be submitted for evaluation and graduation, or for publication in a peer reviewed journal, monograph, book, or book chapter.

2.1.2.5. Dissertation characteristics:

Generally, the dissertation is characterized by several features that must be followed by the student during the production of his work. Any shortcomings or faults in the conduction of the research or the reduction of the dissertation could lead to its refusal or rejection by the board of examiners. Therefore, respecting these characteristics is mandatory.

Among these characteristics:

- The topic can be highly complex but need to be clear.
- The content should be specialized in a highly complex area of expertise.
- The scope
- It should be applied to a realistic community or geographical area.

- Analysis of data will require sophisticated analytical processes.
- Recognized research approaches, methods, and paradigms should be used.
- The report should be 30,000 to 70,000 words in length.
- The bibliography can include generic and specific sources.
- More than 130 sources should be consulted.
- Some universities might be flexible about the characteristics of a dissertation.

2.2. The Statistics:

According to Al-Hemyari.Z. A. (2018), the word "statistics" conveys a variety of meanings to people, many of which are inaccurate or, at the very least, misleading. To some researchers, the word suggests only a plethora of mind-boggling tables, charts, and figures. Yet, other people consider statistics as an imposing form of mathematics.

However, statistics is typically one of the integral matters of the research process. In fact, almost all the studies in social researches or other areas, empty of statistics. Therefore, the science of statistics in scientific research, either in social and human science or any other field, is of great importance

2.2.1. Definition of Statistics:

The term statistics has various definitions according to different researchers. Among these definitions the one of Bowley. A. L. (1901, p. 22). He defined statistics from two perspectives:

- **Statistics as "Statistical Data":** In this regard, Statistics is "numerical statements of facts in any department of enquiry placed in relation to each other."
- **Statistics as "Statistical Methods":** In this case, statistics may be called:
 - the science of counting.
 - the science of averages.

- the science of the measurement of social organism in all its manifestations.

According to Prem S. Mann. (2010.p36), " Statistics is a group of methods used to collect, analyze, present, and interpret data and to make decisions". In this regard, statistics refers to the science of collecting, presenting, and analyzing numerical data. However, in the present study, the term "statistical methods" refers to the methods used by students to analyze the data in Linguistics Master Dissertations at M'sila University, including both parametric and non-parametric statistics.

2.2.3.Objectives of studying statistics:

Because statistical methods are used to organize, summarize, and draw conclusions from data. Thus, a familiarity with statistical techniques and statistical literacy is vital in today's society. Since researcher and student needs to have a basic understanding of statistics, many college majors require at least one course in statistics. According Roxy.P.et all (2008, P31): "There are three important reasons why statistical literacy is important":

- To be informed (How do we decide whether or not claims based on numerical information are reasonable?)
- To understand issues and be able to make sound decisions based on data (to understand statistical information and make informed decisions using this information).
- To be able to evaluate decisions that affect your life (An understanding of statistical techniques will allow you to question and evaluate decisions that affect your well-being).

2.2.4.Functions of Statistics:

Isaac Ofem Ubi (2018, P.17), explains that there are eight functions of statistics:

- **Statistics helps us to present facts in definite form:** With statistics, information

about issues are presented in their true picture instead of being presented in a manner that one will begin to guess the true situation of things.

- **Statistics helps to make facts precise:** It helps in condensing the data into important figures. This means that statistics help in simplifying complex data to make them understandable. As statistical data are presented in graphs, pictograms, averages like the means, or inches, etc, it becomes easy for people to understand them.
- **Statistics can be used for comparisons:** Statistics has a significant function as a means of carrying out comparison among variables. Mathematical quantities are used to show the relationships that exist between or among the collected facts. Those facts, when they are presented in their absolute sense, they make no meaning until they are reduced into mathematical qualities like means, standard deviations, coefficients, etc.
- **Statistics is valuable in formulation and testing of hypotheses:** Statistical techniques can be used in arriving at new theories through the testing hypotheses. A good example is to statistically find the difference between male and female students' performances in English language. The findings of such scopes form theoretical bases for inferences to be drawn.
- **Statistics are used for forecasting:** Statistics provide information that can be very useful in making policies for the future. We can predict the future course of action based on facts available from statistics.
- **Policy making:** Statistics are very important for decision making or policy makers.
- **Knowledge enhancement:** This is a very important function of statistics. Constant operation with statistical facts helps in widening the knowledge of the researcher. It makes one thinks and reasons better than he/she would have without statistical facts.

- **Statistics are used to measure uncertainty:** Any issue about the future is an uncertain situation. Statistics helps in making correct estimates about such issues whether in the present or in the future.

2.2.5. Types of Statistics:

Riyanti.B. and Natalia. C (2021. P8) divided Statistics into two basic branches of Statistics: Descriptive and Inferential.

2.2.5.1.Descriptive Statistics:

It involves organizing and summarizing data. Two general ways to summarize data are with graphs and numerical values, such as an average.

2.2.5.2. Inferential Statistics:

It Involves learning formal methods for drawing conclusions from data. Statistical inference uses probability to determine how confident we can be about the accuracy of our conclusions. This type of statistics is divided according to Mohammad, A, S. (2012, p. 32) into two parts:

2.2.5.2.1. Inferential Parametric Statistics:

Parametric statistics is a statistical type used when we want to define specifications of a sample or specific samples, derived from one or more statistical populations. One of the most important conditions in this type is that the derived data and information follow the moderation distribution so that they have the same population variance. The conditions for using inferential parametric statistical tests are:

- The normal distribution under study.
- Equal contrast or homogeneity contrast.

- Independence of observations.
- The sample size is large, as the sample size is at least 30
- The data level should be of the categorical (interval) or relative type.
- Random selection of samples from the original community.
- Connection of measurement levels, at least theoretically.

2.2.5.2.2. Non-parametric statistics:

Non-parametric inferential statistics is defined as an alternative statistical type to parametric inferential statistics, especially when the researcher deals with data that fall under the ordinal level, or Nominal. So, the researcher resorts to this type of statistics when the conditions for use are not met. The conditions for using non-parametric inferential statistical test are:

- It does not care about the inference resulting from the features of society.
- The data level (measurement) is of the nominal or ordinal type.
- There are no preconditions about the distribution of the population from which the samples are derived.
- Non-fulfillment of one of the conditions of parametric inferential statistics.

Characteristics of non-parametric inferential statistics include the following:

- It is suitable for small samples, as the results can be relied upon to a large degree.
- It provides us with valid results for the analysis of numerical observations derived from rank scales.
- They are easier to understand and interpret than parametric tests.
- Not being affected by neglecting the realization of assumptions.

2.2.6. Criteria for using Statistical Measures:

- **The Arithmetic Mean:** It can be either called the arithmetic population mean, or simply called mean. (Afana, 2011.p. 67). Among the criteria for using the mean:
 - Suitable for study hypotheses.
 - Interval or relative measurement level.
 - There are no outliers.

- **The Median:** The Median is defined as the middle item of all given observations arranged in order. (Subrata.N and Palash. D. 2018.p3). Among the Criteria of using the median:
 - Suitable for study hypotheses.
 - The nominal or ordinal level of measurement.
 - It is used with outliers.

- **Standard Deviation:** It is the measure of a spread of data around the mean. A high standard deviation signifies that data is spread more widely from the mean, where a low standard deviation signals that more data align with the mean. Moreover, the Criteria for using the standard deviation are:
 - Equal apparent arithmetic means.
 - Equal sample sizes.
 - The units of measurement are the same for the two phenomena.

- **Skewness Measure:** It is a scale that measures the degree of elevation or drop of any frequency distribution curve with respect to this latter.

The natural curve, which is symmetrical around the head, passes through the middle. When the distribution is normal or symmetric, the Skewness of that distribution is equal to zero. Additionally, it is possible to rely on the normal or symmetrical distribution to compare the different distributions, where The arithmetic mean = the median = the mode in the normal distributions, and if there is a difference between those features, it indicates that there is a distortion in the distribution.

- **Kurtosis Measure:** It is said that the distribution is flattened if that distribution has a relatively high top, by comparing it with the Normal distribution, and in this case it is called a pointed curve, so, if the top of the distribution is flat, it is called the normal distribution. If the apex of the distribution is pointed and not flattened, it is called a medium flattened distribution.

It is generally accepted that the value of flattening for symmetric or normal distributions is equal to 3, so the Measuring the flatness of a distribution is compared to the flatness of a symmetric or normal distribution.

If the value of flattening is If it is less than 3, then such a distribution is considered flattened and its values fall below the level of the normal curve.

Pointed, that is, its value exceeds the peak of the normal or normal distribution by a certain percentage. Or the normal, while if the value of flattening of a distribution is greater than 3, then such a distribution is considered pointed, that is, its value exceeds the peak of the normal or normal distribution by a certain percentage. (Afana.2011.p160)

- **Simple Linear Correlation:** It is used if the purpose of the analysis is to determine the type and strength of the relationship between two variables. According to Mourad S. (2000, P.157) the criteria for using the correlation coefficient involve:

- The level of their measurement (interval or relative).

- The sample should be selected from the statistical community in a random manner.
 - the relationship between the two variables should be linear.
- **Pearson correlation coefficient:** In the case of collecting data on two quantitative variables (x , y), the correlation between them can be measured, using Pearson's coefficient. Adeyemi.T.O.(2009,p53) identified some assumptions for using the Pearson which are:
- In order to meaningfully use the r , the data must be at the interval level of measurement.
 - The association between the two variables should be linear.

Mourad, S. (2000, P. 158) added other criteria including:

- the sample from the statistical community should be selected randomly.
 - The sample size is not less than 30.
 - It is not permitted to use the correlation coefficient if the relationship is curved.
- **Spearman Rank Correlation Coefficient:** It is used to calculate the correlation coefficient between two variables in the case of ordinal measurement. It is also used if The sample size is small and the distribution of scores is skewed (positive or negative).
- **Simple Linear Regression:** According to Toama, H. Iman (2009, P.326):
- The dependent variable must be independent.
 - The level of measurement of the dependent variable is an interval or relative level.
 - The independent variable may be measured in an orderly, periodic or relative manner.

- The level of measurement of the independent variable should not be nominal.
- Analyzing the effect of a quantitative variable on another quantitative variable.

2.2.7. Criteria for using Simple Inferential Statistical Measures:

2.2.7.1. The T-test:

It is a parametric test used to test the significant difference between two means. It is a statistical test of significance suitable for interval or ratio data (Norusis/ SPSS, 1993, p. 249).

The criteria for using the T-test (for one sample) involve:

- The sample should be chosen from the statistical community in a random way.
- That the variable to be studied falls under the interval or relative measurement level.
- The population should be normally distributed.
- The number of the sample is more than 30 individuals.
- The standard deviation is not a requirement to be known in the case of using the T test.

However, using the T-test for two independent samples could have further criteria, including:

- The sample should be chosen from the statistical community in a random manner.
- That the variable to be studied falls under the categorical or relative measurement level.
- Moderation of distribution.
- The number of the sample is more than 30.
- Independence of observations, which means that the dependent variable in each of the two samples is independent.
- Homogenization of the variance of each of the two samples. (Allam, S. 2010.p210).

2.2.7.2. The Z-test:

It is very similar to the Student t-test, is the z-test. However, with the z-test, the variance of the standard population, rather than the standard deviation of the study groups, is used to obtain the z-test statistic. The criteria for using the Z test require:

- That the variable to be studied falls under the interval or relative level.
- The sample should be chosen from the statistical community in a random manner.
- That the variable to be studied falls under the interval or relative level.
- Moderation of the statistical community from which the sample is derived, Z test is not affected much if the number of the sample is less than 30 individuals.
- In the case of using the Z-test, the standard deviation of the population should be defined (Afanah, 2010.P44).

2.2.7.3. Chi-Square Test:

According to Kinnear P.R. and C.D. Gray. (1994), the chi-square test is a nominal level non-parametric test of significance that could be used to test the differences or relationship between two variables. It applies only to discrete data that are counted rather than data with measured values. (Subrata.N. and Palash. D. 2018; p. 6). Using Chi-Square Test (X^2) for one sample requires the following criteria:

- The measurement level must be nominal.
- That the frequencies be independent, which means that it is not permissible to perform several measurements on the same individual and to record the results of these measurements as separate frequencies in one cell or in different cells.

- The sample is chosen randomly from the population.
- The sample size should be 25 or more.
- There are some restrictions with respect to the sample size. No cell should have an expected frequency of less than 5 (Champion, 1970, p. 141).
- If cell frequencies are less than 5, the resulting Chi-square value would be grossly inflated and would not reveal a true picture of the ways the variables are distributed. However, categories might be collapsed in order to raise the expected frequencies above 5 (Adeyemi, 2009,P49).
- It is also assumed that the researcher must obtain a sample of independent observations (Adeyemi, 2009,P50).

Additionally, using Chi-Square Test (X^2) for two independent samples requires the following Criteria:

- The measurement level should be nominal.
- Independence of observations, which means that the dependent variable is independent.
- The expected frequency in each cell of the table should not be less than 5.
- The sample is chosen randomly from the population.

2.2.7.4. Mann - Whitney test (U) for two Independent samples:

It is used to test the null hypothesis that two samples have the same median or, alternatively, whether observations in one sample tend to be larger than observations in the other (Ali, Z. and Bhaskar, S.B. 2016, p. 664). According to Affana (2010, p.124), the use of this test should include the following criteria:

- This test is used in categorical, or interval measurements.
- Convert the scores into ranks and then use the Mann-Whitney (U) test.
- It is used when the conditions for using the T-test are not met, especially the moderation of the distribution for the scores of each of the two groups. It is recommended to use this test when the distribution is severely twisted.
- Not checking the condition of homogeneity of variance for the scores of the two groups.
- This test is not used when there are repeated ranks (Ties), which forces the researcher to use additional laws to correct the effect of repeating the ranks of the two variables, which reduces the efficiency of the test.

2.2.7.5. Wilcoxon signed rank sum test:

The Wilcoxon signed rank sum test is the non-parametric version of a paired samples t-test. We use the Wilcoxon signed rank sum test when we do not want to assume that the difference between the two variables is interval and normally distributed (but we do assume the difference is ordinal) (Begum, K.J. and Ahmed, A. 2015, p. 53).

2.2.7.6. Analysis of Variance One-way ANOVA:

The one-way analysis of variance is used when we have a categorical independent variable (with two or more categories) and a normally distributed interval dependent variable and we want to test the differences in the mean of the dependent variable broken down by the levels of the independent variable (Begum, K.J. and Ahmed, A. 2015, P. 54). In order to use the Analysis of Variance One-way ANOVA for independent samples the following criteria should be respected: (Affana, 2010; p. 200)

- The level of measurement should be categorical or relative.

- The number of independent samples should be three
- The independence of the degrees of the dependent variable between and within groups
- Moderation of the distribution of degrees of the dependent variable.
- Homogeneity of variance for the degrees of the dependent variable
- That the sizes of the experimental samples exceed 30 individuals per group, and that the sizes of the samples are equal so that the researcher ensures the homogeneity of variance and the moderation of the distribution of the degrees of the individuals of each sample.

Moreover, to use the Analysis of Variance One-way ANOVA for correlative samples, the following criteria are required (Affana, 2010; p. 288)

- The level of measurement should be categorical or relative.
- Each inspected has a special evaluation in each treatment of the dependent variable.
- The moderation of the distribution of the degrees of the dependent variable at its different levels, and it is preferable that the size of the samples is greater than or equal to 30 individuals for each group or the experimental sample.
- The contribution of the individual differences of the subjects through the different treatments should be an equal contribution.
- Homogeneity of the variance of the degrees of the subjects in the different treatments.

2.2.7.7. Dunnett test:

Is used when we want to compare one group (usually the control treatment) with the other groups.

- This test is considered a pre-test in the case of one-way analysis of variance test

- The level of measurement should be categorical or relative.
- It is used when the experimental groups are not equal.
- This test is used in the case of comparing the average of control groups with the average of one or more experimental groups.

2.2.7.8. Fisher's Least Significant Difference (LSD) Test:

This technique can be used only if the ANOVA (F) omnibus is significant. The main idea of the LSD is to compute the smallest significant difference (i.e., the LSD) between two means as if these means had been the only means to be compared (i.e., with a T test) and to declare significant any difference larger than the LSD. (Lynne J. W and Abdi.H, 2010.P1)

- The level of measurement should be categorical or relative.
- In the event that there are differences between the samples, we resort to using a post-test to identify the reasons of these differences, which is one of the post-tests used in the one-way ANOVA test.
- It is used in cases where the volumes of the samples are equal.
- Identify the significance of the differences between the two averages (test of the least significant difference).

2.2.7.9. Tukey HSD (Honestly Significant Difference) test:

It is a statistical tool used to determine if the relationship between two sets of data is statistically significant – that is, whether there's a strong chance that an observed numerical change in one value is causally related to an observed change in another value. (Abikesh P. K. Bibhuti.B.M. 2021, p. 60). The criteria for using the Tukey HSD test are:

- The level of measurement should be categorical or relative.

- In the case of obtaining a significant value of (F), but if the value of (F) is non-significant, there is no need to use any post-test.
- It is used in cases where the sample sizes are equal.
- Conducting binary comparisons on the distribution of the Studentized Range distribution.
- It is used to find the smallest difference between the averages, so it is called the reliable significant difference test. (Mohammad, A,S.2012,P41).

2.2.7.10. Scheffe test:

It is a statistical post-hoc test used in statistical analysis to make unplanned comparisons, rather than pre-planned comparisons, among group means in an analysis of variance (ANOVA) experiment. Criteria for using the Scheffe test are:

- The level of measurement should be categorical or relative.
- In the case of obtaining a significant value of (F), but if the value of (F) is non-functional, there is no need to use any post-test.
- It is used in cases where the sample sizes are equal and not equal.
- If there are differences between the samples
- It is used to make possible pairwise comparisons, in the sense of making comparisons between at least two averages of the experiment.
- It is not significantly affected by the uniformity of the distribution and the homogeneity of variance required for the use of the One-way ANOVA test (Mohammad, A,S. 2012, p. 42).

2.2.7.11. Duncan's multiple range test (DMRT):

DMRT is one of the most common methods used in comparing treatment means. This test is summarized in finding several significant differences with increasing values which depend on the extent of the distance between the treatment means after being arranged or organized. The DMRT can be used to :

- test whether F-cal for treatment is significant or not.
- make all possible comparisons between treatment means.
- compare the mean of control treatment with the rest of the treatment means (Awadallah.B. 2019, p.7)

2.2.7.12. Kruskal Wallis test:

The Kruskal–Wallis test is a non-parametric test to analyse the variance. It analyses if there is any difference in the median values of three or more independent samples. The data values are ranked in an increasing order, and the rank sums calculated, followed by calculation of the test statistic (Ali, Z. and Bhaskar, S. B. 2016, p. 667).

2.2.7.13. One – way – ANCOVA:

Analysis of Covariance (ANCOVA) an extension of ANOVA that provides a way of statistically controlling the (linear) effect of variables one does not want to examine in a study. These extraneous variables are called covariates, or control variables. (Covariates should be measured on an interval or ratio scale.) ANCOVA allows us to remove covariates from the list of possible explanations of variance in the dependent variable. ANCOVA does this by using statistical techniques (such as regression to partial out the effects of covariates) rather than direct experimental methods to control extraneous variables. This test is used in experimental

studies when researchers want to remove the effects of some antecedent variable. For example, pretest scores are used as covariates in pretest- post test experimental designs. ANCOVA is also used in non-experimental research, such as surveys or nonrandom samples, or in quasi-experiments when subjects cannot be assigned randomly to control and experimental groups. (Subrata.N. and Palash. D. 2018, p. 5).

2.2.7.14. Kolmogorov–Smirnov Goodness of fit test:

The Kolmogorov–Smirnov one-sample test is a procedure to examine the agreement between two sets of values.

Criteria for using the Kolmogorov–Smirnov (for one-sample):

- The level of measurement should be nominal or ordinal.
- This non-parametric test is an alternative to the one-sample T-test.
- The sample is selected randomly.
- It is used in the case of finding a match between two distributions, one of which is visual or experimental, and the other expected or theoretical.

2.2.7.15. Sign test:

It is a non-parametric test that can be used to test either a claim involving matched pairs of sample data, a claim involving nominal data with two categories, or a claim about the population median against a hypothesized value k .

- **Sign test for one sample:** It is used to check the compatibility of the median of a selected sample from a statistical population with the median of that population, and to test the null hypothesis. In this case, the researcher should expect that half of the score obtained will be higher than the median of the statistical population and the other half

will be lower than it, thus increasing the probability of accepting the null hypothesis and rejecting it. Alternative Hypothesis. (Affana, 2010.p62)

- **Sign test for two samples:** Where the scores of the two groups are compared with their common median, scores that are greater than the value of the common median in each of the two groups are given a positive sign, and those that are less than it is given a negative sign, then the data for each group is placed in a harmonic table (2X 2), and the following is to identify Significance of the differences between these two groups. (Afanah, 2010, p.117)

2.2.8. Criteria for using advanced inferential Statistical Measures:

2.2.8.1. Factor Analysis:

This method is used to explain the relationships and simplify the correlations between the various variables included in the analysis, where the idea of factorial analysis is based on summarizing the data into the least number of factors that reflect the basic dimensions in the data subject to analysis (Sami, 2009, p. 41).

- **Applications of Factor Analysis:**

1- Identification of Underlying Factors:

- Clusters variables into homogeneous sets.
- creates new variables (i.e. factors).
- allows us to gain insight to categories.

2- Screening of Variables :

- identifies groupings to allow us to select one variable to represent many.

- useful in regression (recall collinearity).

3- Summary: Allows us to describe many variables using a few factors

4- Sampling of variables: Helps select small group of variables of representative variables from larger set.

5- Clustering of objects: Helps us to put objects (people) into categories depending on their factor scores.

2.2.8.2. Two-way ANOVA:

A two-way ANOVA is an extension of the one-way ANOVA. With one-way ANOVA, we have one independent variable affecting a dependent variable. With a two-way ANOVA, there are two independent variables. Use a two-way ANOVA when we have one measurement variable (i.e. quantitative variable) and two nominal variables. In other words, if our experiment has a quantitative outcome and we have two categorical explanatory variables, a two-way ANOVA is appropriate. (Subrata.N. and Palash. D.2018; p5).

2.2.8.3. Three Way ANOVA :

- It has the same conditions as one-way and two-way Anova .
- It is used to examine more than one factorial variable on the dependent variable. In other words, if we have three factor variables and we want to examine the effect of these factors on the dependent variable, we use the Three Way ANOVA.

2.2.8.4. Two – way – ANCOVA: According to Mourad (2000, p. 374): if the study includes two independent variables with the dependent variable and the accompanying (extraneous) variable, in this case, the analysis of one-way ANOVA is followed.

2.2.8.5. MANCOVA (Multivariate Analysis of Covariance):

In the case of examining the effect of an independent variable (or several independent variables) on several dependent variables, and we want to isolate the effect of an accompanying variable (extraneous or exogenous) (or several accompanying variables) from the effect of the independent variable (or independent variables) on the dependent variables. In this case, the conditions of the one-way analysis of variance and the two-way analysis of variance are followed. (Hassan. 2011, P. P. 369-388)

2.2.8.6. Discriminant Analysis :

According to Al-Rawi, (1987, p.p. 510-509):

- Distinguishing between two or more groups of individuals or observations, based on some criteria (variables) determined by the researcher.
- The variables follow a normal distribution.
- Equality of covariance matrices between groups.
- The variable in this type of analysis is a nominal variable.
- Describe the relationships between the dependent variable and the variables used by means of a linear model

Conclusion

To sum up, this chapter explored and defined key terms and concepts that are integral to the study. This groundwork has allowed us to establish a solid foundation for the subsequent research. Additionally, through an extensive literature review, we have examined previous studies in order to situate our research within a broader theoretical context. Furthermore, it provided a concise overview of the study variables, specifically focusing on the variables: “the dissertation and statistics” of the investigation.

Throughout this chapter, we have placed a significant emphasis on the criteria for utilizing statistical measures. This encompasses both simple inferential statistics, which aid in drawing conclusions about a population based on sample data, as well as advanced inferential statistics, which allow for the examination of complex relationships and patterns within the data.

As we move forward with our research, the knowledge and understanding gained in this chapter will serve as a solid framework for the subsequent chapters. It will enable us to effectively analyze and interpret our data. In the following chapters, we will delve deeper into the research methodology, data collection, analysis, and interpretation, building upon the foundation laid out in this introductory chapter.

Chapter 02: Methodology, data Analysis and findings discussion

Introdcution

2.1 Methodology

2.1.1 The Method

2.1.2 The Pilot Study

2.1.3 The Population and the Sampling procedures

2.1.4 Data Collection Tools

2.1.5 Data Analysis Tools

2.2 Data Analysis and Findings Discussion

2.2.1 Data Analysis of Research Question One

2.2.2 Discussion of the findings obtained from research question one

2.2.3 Data Analysis of research question Two

2.2.4 Discussion of the findings obtained from research question Two

2.2.5 Data Analysis of Research Question Three

2.2.6 Discussion of the findings obtained from research question three

Introduction

This chapter presents the methodological framework of the study in addition to the data analysis and findings' discussion. It starts by defining the method, the instruments, the participants and methodological procedures undertaken in this study, as well as the statistical tools used in the analysis of the collected data. The second section of this chapter involves the presentation of the collected data, its analysis and discussion of the findings. This chapter closes up with pedagogical implications, limitations and recommendations for further research.

2.1. Methodology:

2.1.1 .The Method:

This study is descriptive as it investigates statistical measures and techniques used by Linguistic students in the data analysis section in Linguistics Master Dissertations at M'sila University. The researcher used content analysis method on a collected corpus of linguistics master dissertations. Specifically, the researcher used the deductive content analysis design. Contents analysis enables researchers to understand the content by reducing the quantity of content collected, identifying categories, and grouping the content into the defined categories (Bengtsson, 2016, p.10). In addition, content analysis “provides a systematic and objective means to make valid inferences from verbal, visual, or written data in order to describe and quantify specific phenomena” (Downe-Wamboldt, 1992, p. 314).

2.1.2 .The Pilot Study:

As an initial step before the main study, a pilot study was conducted in order to collect and preview the intended corpus in addition to the piloting of the used data collection instruments. The corpus was collected from the D-space website of the linguistic master dissertations from 2018 to 2022. The pilot study was very important because of the following reasons:

- It enabled the collection of the inventory of all dissertations of Linguistic master students.
- T served in checking the reliability and validity of the used research instruments
- It contributed to gaining a deeper understanding of the subject of study.
- It helped in determining the duration of the study, and prediction of the most important future problems that may arise, and thus avoiding them.

2.1.3 The corpus and the Sampling procedures:

The main corpus of the research is composed of all Algerian Students' master dissertations in the field of linguistic studies. The selected corpus for this study is linguistics master dissertations in the Department of English at M'sila University from 2018 to 2022. The dissertations were evaluated according to type of statistical tools used for data analysis with the utmost aim of identifying the most prevalent statistical tool in data analysis sections and the appropriateness of such tools to address the research interest.

Since the researcher collected all the dissertations submitted in the specified academic year, the number of dissertations was 138 as displayed in Table 2.1.

Table 2.1: The Population and Sample

Year	f	%
2018	25	18.11
2019	21	15.21
2020	32	23.18
2021	33	23.91
2022	27	19.56
Σ	138	100

2.1.4 Data Collection Tools:

In order to analyze and assess the use of statistical tools and techniques used in Linguistics Master Dissertations, the researcher used a grid of statistical methods analysis as a main tool for data collection.

2.1.4.1 Description of the Analysis Grid:

The analysis grid was designed by the researcher based on the insights gained from the related literature and the principles and standards of statistical analysis. The grid is divided into three main sections:

- The data collection tool used and their psychometric characteristics (Validity and reliability).
- The statistical measures used in Linguistics master dissertations and how appropriate they are to the criteria for their use.
- This section involves:
 - The descriptive statistical measures.
 - The simple inferential statistical measures.
 - The Advanced inferential statistical measures.
- The appropriateness of the sample size and sample selection method.

2.1.4.2 Validity of the Content Analysis Grid:

The validity of the content analysis grid was examined by means of the following methods:

- Virtual Validity: the extent to which the tool contents conform to the theoretical framework.
- Experts' validity: the grid was examined by experts in the field of linguistics and statistics who expressed their opinions and suggested a set of modifications and additions (See Appendix 3)

2.1.4.3 Reliability of the Content Analysis Grid:

In order to ensure the reliability of the content analysis grid, the reliability coefficient was measured to examine the level of agreement between the 20 raters that piloted the analysis grid. The consistency of agreement equation of Holsti' coefficient was used. Table 2.2 shows the reliability coefficient values.

Table 2.2: The stability coefficient values.

Field	1st rater	2nd rater	Agreement (M)	disagreement	Stability coefficient
Data collection tools	98	98	98	00	1(100%)
Descriptive Statistics	47	45	45	02	0.9782 (97.82%)
Simple inferential statistics	01	01	01	00	1(100%)
Advanced inferential statistics	00	00	00	00	1(100%)

It is clear from table 3 that the value of the stability coefficient is in the section of descriptive statistics is 0.9782 (i.e 97.82% of agreement) while in the sections of data collection tools, simple inferential statistics, and advanced inferential statistics, the value of the coefficient is 1 (i.e100% agreement). Through these positive results, the reliability of the content analysis card has been confirmed. Thus, this confirms that the tool is ready for use in this study.

2.1.5 Data Analysis Tools:

For the purpose of analyzing this study data, the researcher used the following statistical tools:

- Frequency to indicate the number of observations.
- Percentage to express the same data
- Holsti's coefficient, to test the reliability of the content analysis grid, whose formula is the following

$$R=(2M)/(N1+N2),$$

where : M: The criteria agreed upon by the first and second analysis

N1: criteria in the first analysis

N2 : Criteria in the second analysis.

2.2 Data Analysis and Findings Discussion:

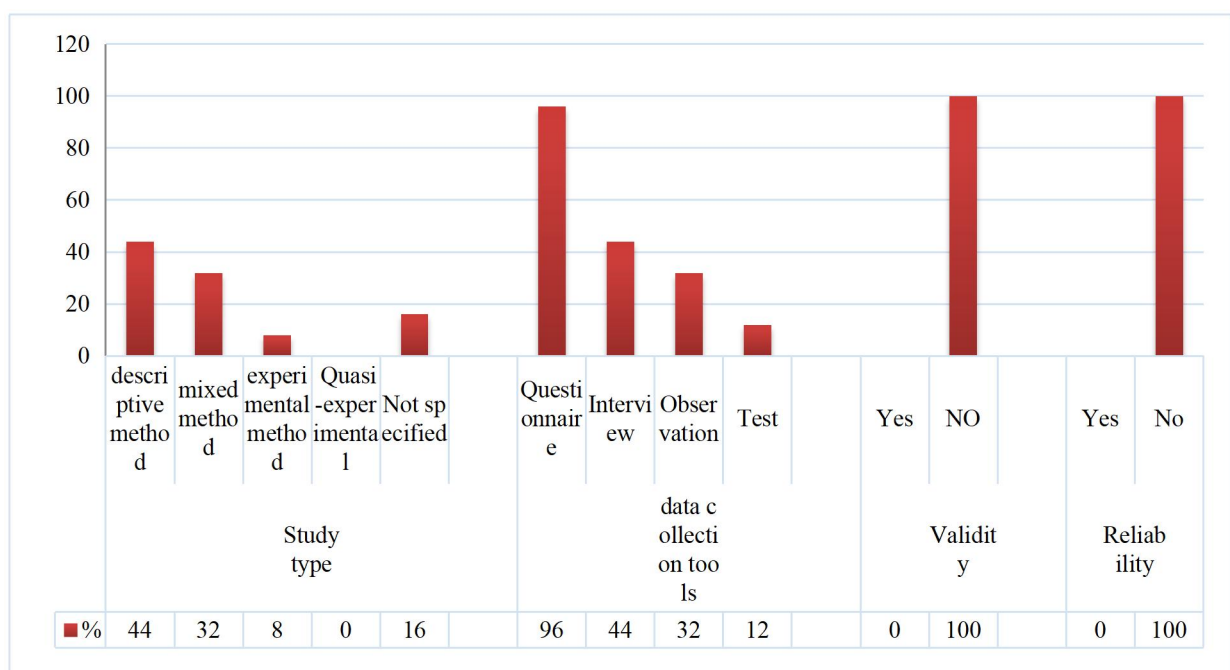
This section of the second chapter includes the data analysis and the findings discussions. It is divided and organized in light of the research questions.

2.2.1 Data Analysis of Research Question One:

To answer question one investigating the study type, data collection tools, and their psychometric qualities (Validity and reliability), the collected data were classified in terms of the academic years selected.

2.2.1.1 The research method, data collection tools and psychometric characteristics used in 2018 dissertations corpus :

The first set of data are related to the year 2018. They were obtained from 25 dissertations. The first graphical representation of data displays the types of data collection methods and tools.



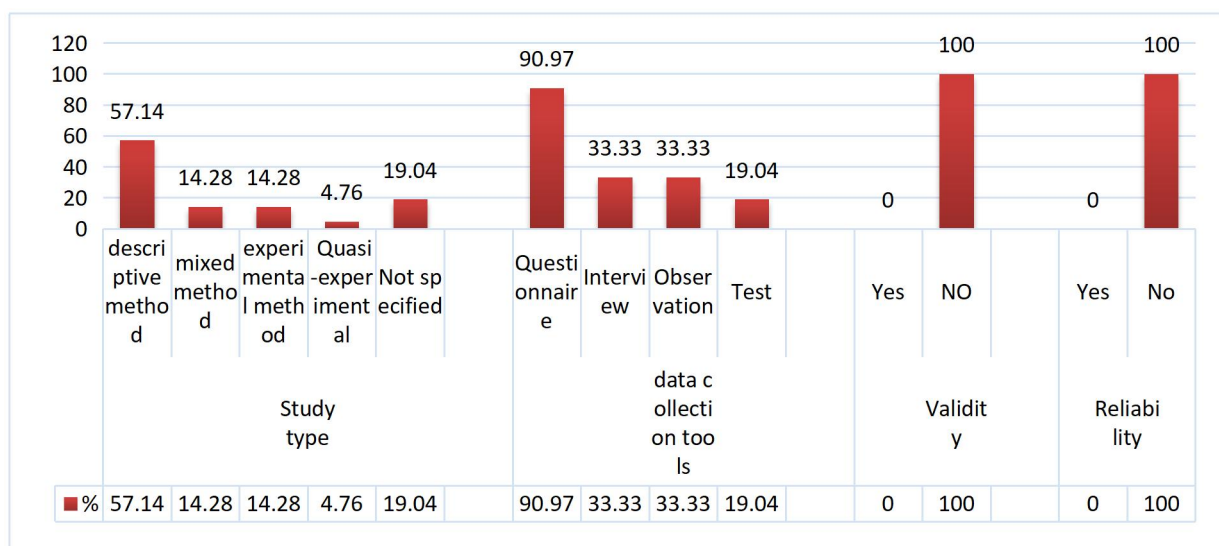
Graph 2.1. Data collection methods and tools used in the corpus of 2018

The above graph (2.1) reveals that the quasi-experimental method is not used at all. It is also noticed that 8% of the dissertations have employed experimental method. The most used methods are the descriptive method 44 % and the mixed methods 32 %. In addition, it should be noted that 32 % of dissertations did not specify the method used.

Concerning the data collection tools, it is clear from graph (2.1) that the majority of dissertations used the questionnaire by a large percentage of 96 %, followed by the interview and the observation with a percentages of 44 % and 32 % respectively. Only 12% used tests as data collection tools. As for the last part relevant to the validity and reliability of data collection tools (questionnaire and test), it is clearly displayed that all dissertation did not examine them.

2.2.1.2 The research method, data collection tools and psychometric characteristics used in 2019 dissertations corpus:

The second set of dissertations is collected from the year 2019. The number of the collected dissertation is 21. Graph 2.2 displays the used research methods and data collection tools as well as the validity and reliability of tools.



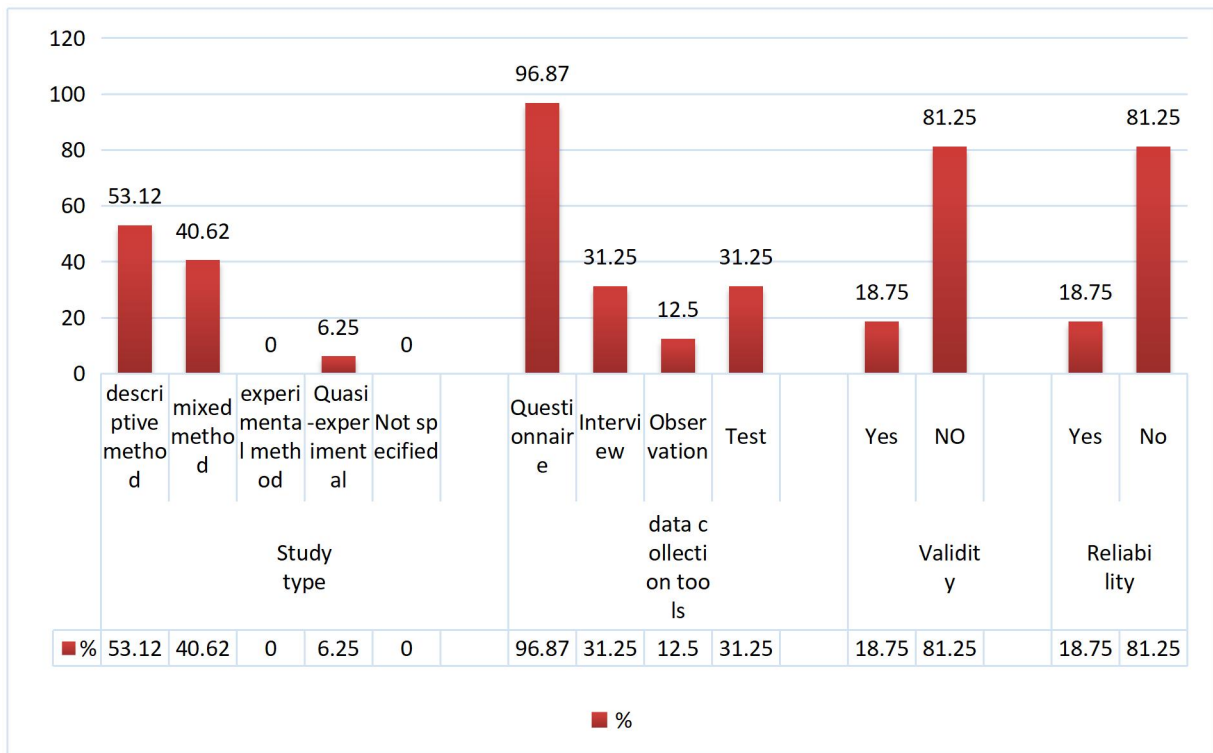
Graph 2.2: Data collection methods and tools used in the corpus of 2019

As it is illustrated in figure (3), the descriptive method is the most method used by students with the percentage of 57.14 %, while mixed and experimental methods are lower 24,28%. It is also noticed that the use of the quasi-experimental method is almost non-existent, with a percentage of use 04.76 %. Also, it should be noted that there is a significant percentage of 19.04 % of dissertations that did not specify the method used.

On the same graph 2.3, it is noticed that findings about the data collection tools used in the dissertations are like the results obtained from 2018 corpus where the most of the them used the questionnaire as a main tool of data collection, by a large percentage of 90.97 %, followed by the interview and Observation of 33.33 %, then the test by a lower percentage, estimated of 19.04 %. Validity and reliability analysis of data collection tools, is absent in this corpus as well.

2.2.1.3 The research method, data collection tools and psychometric characteristics used in 2020 dissertations corpus:

A number of 32 dissertations constituted the corpus of 2020. Similarly, the used methods and the data collections tools, validity and reliability were examined. The obtained data from this corpus is displayed on graph 2.4.

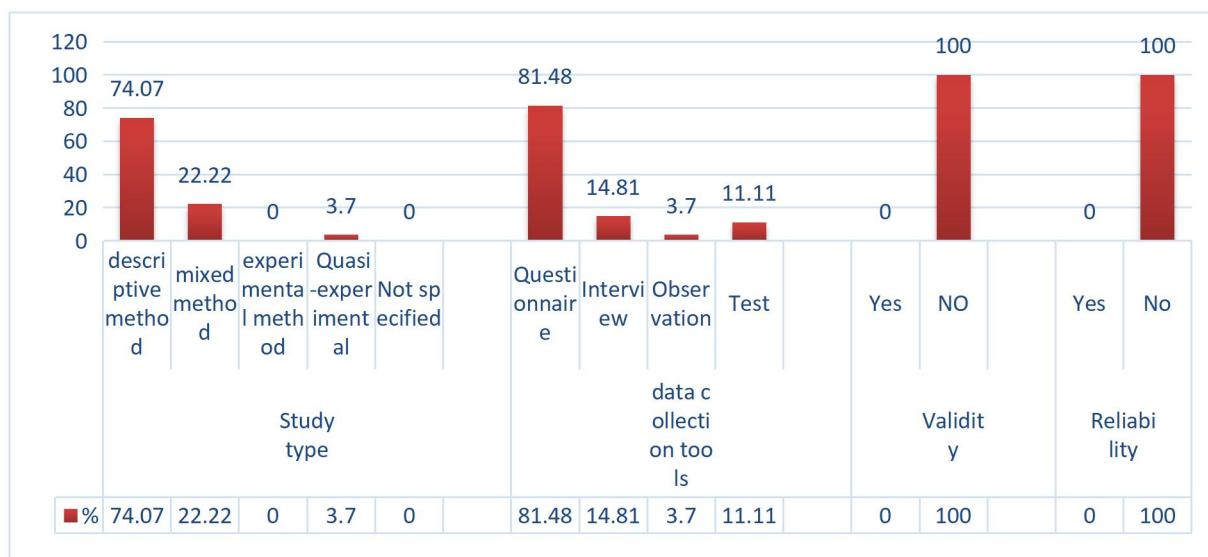


Graph 2.3: Data collection methods and tools used in the corpus of 2020

According to the findings in graph 2.3, the most commonly used methods in dissertations are the descriptive and mixed methods, with 53,12 % and 40.62 % respectively. It is seen that Quasi-experimental Method (06.25%) is ranked the second. Most of the dissertations did not use the Experimental method (00%). Concerning the data collection tools, it is found that the questionnaire remains the most widely used tool among the other used tools, with a percentage of 96.87 %. It is also noticed that students use the interview and Test at a similar percentage estimated at 31.25 %. The observation is not used except by a very small percentage estimated by 12.5 %. The validity and reliability of data collection tools remains absent in the dissertations where the absence percentage reached 81.25 %, however, a percentage of 18.75 % made use of poor validity and reliability analysis.

2.2.1.5 The research method, data collection tools and psychometric characteristics used in 2022 dissertations corpus:

The year 2022 corpus involves 27 dissertations. Data obtained from the analysis of these dissertations is displayed on graph 2.5.

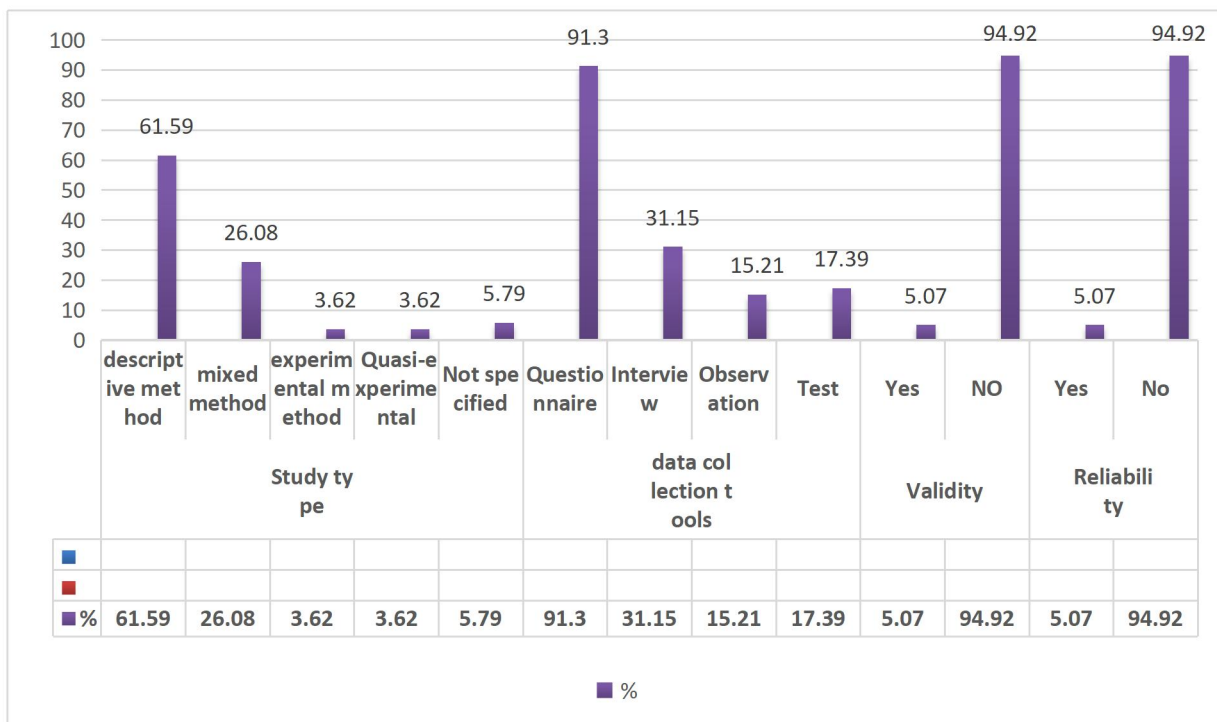


Graph 2.5: Data collection methods and tools used in the corpus of 2019

The above graph shows that out of the total dissertations evaluated in the present investigation, 74.07% have used descriptive method, 22.22% of them used mixed method, and only 03.7% of the dissertations have used the quasi-experimental, while non of them used the experimental method (00%). The questionnaire (81.48%) is the main data collection tool, followed by the interview of 14.81%. In this corpus tests are not largely used except with 11.11%. Similarly the observation was not used except in 03.7%. The lack of verification of validity and reliability is still recorded among students' dissertations.

2.2.1.6 The research method, data collection tools and psychometric characteristics used in the five years dissertations corpora:

Findings from the global analysis of the four years (from 2018-2022) are displayed on graph 2.6. The analysis of the 138 dissertations use of research methods and data collections tools revealed the following findings.



Graph 2.6: Data collection methods and tools used in the corpus from 2018-2022

The result of the analysis presented in graph 2.6 shows that there are four methods used in the selected dissertations; namely; the descriptive method, the mixed method, the experimental method and the quasi-experimental. The data reveal that the prevalent method used in the selected dissertations is the descriptive method with frequency of 85 and of 61.59%. This was followed by mixed method with percentage of 26.08%. Only 03.62% of students used the Experimental and the quasi-experimental method. A percentage of 5.79% of dissertations did not specify the method used. As to the used data collection tools, it is clear that the most prevalent data collection tools used in the selected dissertations sample is the questionnaire with percentage of 91.30% , followed by the interview with percentage of 31.15%, tests with 31.15% , and the last tool is the observation with percentage of 15.21%.

Despite the importance of validity and reliability of data collection tools it was found that most of the students did not verify the validity and reliability of their data collection tools, except only for 05.07%.

2.2.2 Discussion of the findings obtained from research question one:

The high percentage of use of descriptive method across the five years (2018, 2019, 2020, 2021, and 2022), can be interpreted that all dissertations included in the study were qualitative, and that they hold as an objective to accurately and systematically describe a phenomenon or situation. Therefore, it is the appropriate method for it. This is confirmed by Shona. M (2022) when she said: “Descriptive research aims to accurately and systematically describe a population, situation or phenomenon. It can answer what, where, when and how questions, but not why questions”. She add that: “Descriptive research is an appropriate choice when the research aim is to identify characteristics, frequencies, trends, and categories”.

In addition, the descriptive research is easier to use rather than the experimental, this is confirmed by Shona. M (2022) “the descriptive research design can use a wide variety of research methods to investigate one or more variables. Unlike in experimental research, the researcher does not control or manipulate any of the variables, but only observes and measures them”. Furthermore, the use of descriptive method and mixed method, the reason is very obvious, it is easy to employ descriptive method or mixed method in comparison to experimental method or quasi- experimental and it is also easy to use the descriptive statistical measures.

This also indicates that the students prefer descriptive method more than quasi-experimental method because descriptive method is comparatively easier and does not require more time and specifications. This finding agrees with the findings of Govil, Qasem & Gupta (2015), who carried out a study on the statistical methods used in PhD theses of social science in Indian universities and found that 90% of the study employed descriptive statistics. Also, with the findings of Ezel, T. et al. (2010), whose study was about the examination of data analysis methods used for master’s theses in educational sciences, his results showed that descriptive statistics were more prevalent than other research methods.

On the other hand, the use of the questionnaire by the majority of students (96 %), because it is easy to administer and analyse compared to the interview or the observation. According to Fife-Shaw (2006) "Questionnaires remain the single most common means of conducting surveys and are indeed probably one of, if not the, most commonly-used research tools in the social sciences" (p37) . Questionnaires seem particularly appealing to less experienced researchers such as students doing dissertation projects for the following reasons: They are easy to construct, or at least can appear to be so, and the data they gather can be processed and analyzed relatively easily compared to other data collection tools. Moreover, this finding confirms the fact that the questionnaire is the most popular tool of collecting data confirmed by Tiwari (2012) saying that "questionnaires are a popular means of collecting data, and it can cover a large number of people or organizations, wide geographic coverage, relatively cheap, no prior arrangements are needed, and avoids embarrassment on the part of the respondent (p.78)

This result is fully consistent with the findings of Aras et al. (2015) who carried out a study about the research trends in Turkish distance education. His results showed that the most frequently used data collection tools were questionnaire (N=192), interviews (N=118), document analysis (N=59), observations (N=17). Similarly, this study found that the second ranked tool, in terms of use, is the interview. It is a technique that is primarily used to gain an understanding of the underlying reasons and motivations for people's attitudes, preferences or behaviour. But it has "many disadvantages, like time, geographic limitations, being expensive, respondent bias – tendency to please or impress, create false personal image, or end interview quickly, embarrassment possible if personal questions and transcription and analysis can present problems – subjectivity" (Tiwari, 2012, p.88).

On the other hand, it is possible to interpret the weak use of the test as a means to collect data, by the fact that the majority of students believe that this tool is only used in the

experimental or quasi-experimental method. Likewise for the observation, the use of this data collection is very difficult, because there can be researcher bias, this is confirmed by Ratner (2002) “Another consideration and potential limitation of a study using observations is researcher bias”.

As for investigating the validity and reliability of the data collection tools, these results can be explained by the lack of students’ awareness and training on the calculation of validity and reliability. According to Singh (2014) "validity and reliability increase transparency, and decrease opportunities to insert researcher bias in qualitative research" these aspects are important concepts as they are used for enhancing the accuracy of the assessment and evaluation of a research work (Tavakol & Dennick, 2011). Without assessing reliability and validity of the research, it will be difficult to describe for the effects of measurement errors on theoretical relationships that are being measured (Forza, 2002).

2.2.3 Data Analysis of research question Two:

To answer the second question which investigating the statistical measures used in master dissertations in linguistics, and the appropriateness of this use. Similar to the analysis procedures followed in the previous section, the dissertations were analyzed in groups in terms of the academic year.

2.3.2.1 Statistical tools used in 2018 dissertations corpus:

The first corpus analysis holds 25 dissertations of the year 2018. The first type of statistics that is targeted is descriptive statistics. Table 2.4 represents the descriptive statistics use in linguistics master dissertations.

Table 2.4: The descriptive statistics used in master dissertations of the year 2018

The above table (2.4) shows that certain measures like Median, Quartiles, Torsion coefficient, and Flattening coefficient have never been used by the students with a 0% of use. It is clear that the majority of students used frequencies 92% and percentages 96%, divided into appropriate use of 12% and 84 % inappropriately. Also, the table shows that the students did not use the mean properly. Only 16% of the dissertations have employed it, divided into

	Frq	%		Mean		Median		Quartiles		Std deviation		Torsion coefficient		Flattening coefficient		Correlation coefficient		Simple regression	
		app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	/	03	21	02	02	00	00	00	00	03	00	00	00	00	00	01	00	01	00
%	/	12	84	08	08	00	00	00	00	12	00	00	00	00	00	04	00	04	00
Σf	23	24		04		00		00		03		00		00		01		01	
%		92		96		16		00		12		00		00		04		04	

appropriate use of 08% and 08 % inappropriately. We also note that students used the Standard deviation, Correlation coefficient, and Simple regression appropriately but at very low percentages, 12 %, 04 % and 04 % respectively.

Analysis seeking to explore the use of Simple inferential statistics, revealed a number of findings summarized in tables 2.5 and 2.6.

Table 2.5: The inferential statistics used in master dissertations of the year 2018 (part1)

	Z test		T test		Levene's test		Chi - square test		Kolomgrov-Smirnov test		Sign test		Binomial test		Mann Whitney test(U)		Wilcoxon test		One-Way ANOVA		Dunnett test	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	00	00	01	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	04	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

As illustrated in the table 2.5 above, all simple inferential statistical measures specified in this study are not used in the selected sample of master dissertations. Only one dissertation made use of T test and this use was appropriate. Table 2.6 displays another set of inferential statistics measures.

Table 2.6: The inferential statistics used in master dissertations of the year 2018 (pat2)

	Scheffe test		Duncan test		Kruskal - Wallis (H)		Partial Correlation		One-Way (ANCOVA)		Fisher test LSD		Tukey's (HSD) test	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Likewise, from table 2.6, non of the dissertations appropriately or inappropriately involved Scheffe test, Duncan test, Kruskal – Wallis (H), Partial Correlation, One-Way (ANCOVA), Fisher test LSD and the Tukey's (HSB) test.

More advanced inferential statistics were examined to check the appropriateness if their use including; Factor analysis, Two way, Three Way ANOVA, Two – way ANCOVA, MANCOVA, Multivariate Analysis of Covariance, Discriminant Analysis.

Table 2.7: The Advanced inferential statistics used in master dissertations of the year 2018

	Factor Analysis		Two Way ANOVA		Three Way ANOVA		Two – way ANCOVA		MANCOVA (Multivariate Analysis of Covariance)		Discriminant Analysis	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	00	00	00	00	00	00	00	00	00	00

Regarding to the results shown in the table 2.7 above, it is noticed that the advanced inferential statistical measures are not used in the dissertations selected corpus.

2.3.2.2 Statistical tools used in 2019 dissertations corpus:

The second dissertations corpus includes 21 dissertations of the year 2019. The first analysis was about descriptive statistics use. Data obtained at this level are displayed on table 2.8.

Table 2.8: The descriptive statistics used in master dissertations of the year 2019

Frq	Percentage		Mean		Median		Quartiles		Standard deviation		Torsion coefficient		Flattening coefficient		Correlation coefficient		Simple regression	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	18	03	16	06	00	00	00	00	05	01	00	00	00	00	01	00	00	00
%	85.71	14.28	76.19	28.57	00	00	00	00	23.80	04.76	00	00	00	00	04.76	00	00	00
Σf	19		06		00		00		6		00		00		01		00	
%	90.47		28.57		00		00		28.57		00		00		04.76		00	

The results of the analysis presented in table 2.8, shows that there are five descriptive statistical measures used in dissertations of 2019. These are: frequencies (85.71%) percentages (90.47%) with a 14.28 % of appropriate use and 76.19 % inappropriate usage , the Mean (28.57%) with 28.57% of appropriate usage, the Standard deviation (28.57%), with a percentage of 23.80 % of appropriate use and 4,76 of inappropriate use, the Correlation coefficient (4.76%) with appropriate usage of 04.76%. While the other descriptive statistics measures are not used in the dissertations.

Data from inferential statistics appropriate use analysis is summarized in table 2.9

Table 2.9: The simple inferential statistics used in master dissertations of the year 2019

	Z test		T test		Levene's Test		Chi square Test		Kolomgro v-Smirnov Test		Sign Test		Binomial test		Mann - Whitney test (U)		Wilcoxon test		One-Way ANOVA		Dunnnett test	
	ap p	in ap p	app	inapp	app	in ap p	ap p	inap p	ap p	inap p	ap p	inap p	ap p	inap p	ap p	inap p	ap p	inap p	ap p	inap p	ap p	inap p
f	00	00	02	00	01	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	09.52	00	04.76	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

The findings in the table 2.9 above revealed that all simple inferential statistical measures are not in the dissertations. Only 9.52% used the T test with 9.52% of appropriate use and 4.76% used the Levene's Test with 4.76% of appropriate use.

The second set of inferential statistics is summarized in table 2.10

Table 2.10: The simple inferential statistics used in master dissertations of the year 2019

	Scheffe test		Duncan test		Kruskal - Wallis (H)		partial correlation		one-way (ANCOVA)		Fisher test LSD		Tukey's (HSB test)	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	00	00	00	00	00	00	00	00	00	00	00	00

From table 2.10, it is noticed that all indicated tests are not used in the 2019 dissertations corpus.

Advanced statistics appropriate use in master dissertations of the year 2019 is displayed in table 2.11 below.

Tbale 2.11: The advanced inferential statistics used in master dissertations of the year 2019

	Factor Analysis		Two Way ANOVA		Three Way ANOVA		Repeated measures ANOVA		Two – way – ANCOVA		MANCOVA (Multivariate Analysis of Covariance)		Discriminant Analysis	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	00	00	00	00	00	00	00	00	00	00	00	00

The result in table 2.11 above, showed that all advanced inferential statistical measures including Factor Analysis, Two Way ANOVA, Three Way ANOVA, Repeated measures ANOVA, Two – way – ANCOVA, MANCOVA , Multivariate Analysis of Covariance, Discriminant Analysis are not used in dissertations of students during 2019.

2.3.2.3 Statistical tools used in 2020 dissertations corpus:

Dissertations collected from the year 2020 are 32 dissertations. The first set of targeted data is descriptive statistics. Table 2.12 displays the frequencies of use of theses statistical tools in master dissertations.

Table 2.12: The Descriptive statistics used in master dissertations of the year 2020

Freq	Percentage		Mean		Median		Quartiles		Standard deviation		Torsion coefficient		Flattening coefficient		Correlation coefficient		Simple regression	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	31	21	10	00	02	00	00	00	10	00	00	00	00	00	06	00	00	00
%	96.87	65.62	31.25	00	06.25	00	00	00	31.25	00	00	00	00	00	18.75	00	00	00
Σf	/	31	10		02		00		10		00		00		06		00	
%	/	96.87	31.25		06.25		00		31.25		00		00		18.75		00	

As the table 2.12 above illustrated, it is noticed that the frequency and percentage are the most used in dissertations among the other descriptive statistical measures, as the percentage of their use reached 96,87 % for each one of them, but, the large percentage of inappropriate use of percentage was 65,62% , while only 31,25 % is appropriate use. Moreover, students appropriately used the mean with a 31,25%, the median is appropriate used, but of a small percentage reached 06.25%, we note also the use appropriately of both Standard deviation and Correlation coefficient of 31.25 % and 18.75 % respectively. The rest of descriptive statistical measures (Quartiles, Torsion coefficient, Flattening coefficient, Simple regression), are not used by students (00 %).

Simple inferential statistics used in 2020 dissertations sample are displayed in table

2.13.

Table 2.13: The simple inferential statistics used in master dissertations of the year 2020

	Z test		T test		Levene's Test		Chi – square Test		Kolomgr ov-Smirnov Test		Sign Test		Binomi al test		Mann - Whitne y test (U)		Wilcoxon test		One-Way ANOV A		Dunne tt test	
	a p p	ina pp	ap p	in ap p	ap p	in ap p	app	in a p p	app	in a p p	a p p	in ap p	ap p	in ap p	ap p	ina pp	app	ina pp	ap p	in ap p	a p p	in a p p
f	00	00	02	00	00	00	02	00	01	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	06.25	00	00	00	06.25	00	03.12	00	00	00	00	00	00	00	00	00	00	00	00	00

As revealed in the table 2.13 above, three simple inferential statistical measures were use appropriately with a low degree; T test (6.25%), Chi – square test (2.25%) , and Kolmogorov- Smirnov test (3.12%) . While, the rest of the simple inferential statistics are not used in the 2020 dissertations sample. More simple inferential statistics were targeted in table 2.14.

Table 2.14: The simple inferential statistics used in master dissertations of the year 2020 (part2)

	Scheffe test		Duncan test		Kruskal – Wallis (H)		partial correlation		one-way (ANCOVA)		Fisher test LSD		Tukey's (HSB) test	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Similar to the previous dissertations samples, non of the specified inferential statistiscs measures are used in this dissertations sample.

Advanced inferential statistics use is targeted in table 2.15 below. The results show that all advanced inferential statistical measures including; Factor Analysis, Two Way ANOVA, Three Way ANOVA, Repeated measures ANOVA, Two – way – ANCOVA, MANCOVA, Multivariate Analysis of Covariance, Discriminant Analysis are not used in dissertations sample of the year 2020

Table 2.15: The advanced inferential statistics used in master dissertations of the year 2020

	Factor Analysis		Two Way ANOVA		Three Way ANOVA		Repeated measures ANOVA		Two – way – ANCOVA		MANCOVA (Multivariate Analysis of Covariance)		Discriminant Analysis	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inap
f	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	00	00	00	00	00	00	00	00	00	00	00	00

2.3.2.4 Statistical tools used in 2021 dissertations corpus:

Table 2.16: The descriptive statistics used in master dissertations of the year 2021

I	Frequency	Percentage		Mean		Median		Quartiles		Standard deviation		Torsion coefficient		Flattening coefficient		Correlation coefficient		Simple regression	
		app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
F	32	06	26	05	00	00	00	00	00	04	00	00	00	00	00	01	00	00	00
%	96.96	18.18	78.78	15.15	00	00	00	00	00	12.12	00	00	00	00	00	03.03	00	00	00
Σf	/	32		05		00		00		04		00		00		01		00	
%	/	96.96		15.15		00		00		12.12		00		00		03.03		00	

The 2021 master dissertations corpus includes 33 dissertations. The first set of statistics analyzed is simple descriptive statistics measures. Table 2.16 displays findings of descriptive statistics used in 2021 dissertations corpus.

According the results revealed in table 2.16, it is noticed again, that the frequency and percentage are the most descriptive statistical measures used (96.96 %). However, there is the percentage is not appropriately used for 78.78 %. Only 18.18 %, used the percentage appropriately. Also, we notice that there is an appropriate use for each of the Mean, Standard deviation, and Correlation coefficient, but with a small percentages of 15.15 %, 12.12 %, and 03.03 %, respectively. As for the rest descriptive statistical measures including the median, Quartiles, Torsion coefficient, Flattening coefficient, Simple regression, they are not used in the dissertations corpus.

Simple inferential statistics appropriate use was targeted in the second set of data displayed on table 2.17

Table 2.17: The simple inferential statistics used in master dissertations of the year 2021

	Z test		T test		Levene's Test		Chi – square Test		Kolom grov- Smirn ov Test		Sign Test		Binomi al test		Mann - Whitney test (U)		Wilxoxo n test		One-Way ANOVA		Dunnett test	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	00	00	01	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	03.03	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

As shown in Table 2.17, it is noticed that only the T test is used properly, as a simple inferential statistical measure in dissertations, but only in 03.03% which is one dissertation. While, all other simple inferential statistical measures (Z test, Levene's test, Chi – square test, Kolmogorov- Smirnov test, Sign test, Binomial test, Mann -Whitney test (U), Wilcoxon test, One-Way ANOVA, Dunnett tester are not used (00 %).

More simple inferential statistics were examined in table 2.18. As shown in table 2.18, all the specified inferential statistical measures (Scheffe test, Duncan test, Kruskal – Wallis (H), Partial Correlation, One-Way (ANCOVA), Fisher test LSD, Tukey's (HSB) test) are not used in the 2021 dissertations sample.

Table 2.18: The simple inferential statistics used in master dissertations of the year 2021
(part2)

	Scheffe test		Duncan test		Kruskal – Wallis (H)		partial correlation		one-way (ANCOVA)		Fisher test LSD		Tukey's (HSB) test	
	ap p	inap p	app	inap p	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Advanced statistics use in 2021 dissertations corpus is summarized in table 2.19.

Table 2.19: The Advanced inferential statistics used in master dissertations of the year 2021

	Factor Analysis		Two Way ANOVA		Three Way ANOVA		Repeated measures ANOVA		Two – way – ANCOVA		MANCOVA (Multivariate Analysis of Covariance)		Discriminant Analysis	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inap p	app	inapp	app	inapp
f	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	00	00	00	00	00	00	00	00	00	00	00	00

The findings on table 2.19 reveals that all advanced inferential statistical measures (Factor Analysis, Two Way ANOVA, Three Way ANOVA, Repeated measures ANOVA, Two – way – ANCOVA, MANCOVA (Multivariate Analysis of Covariance), Discriminant Analysis) are not used in dissertations sample of the year 2021.

2.3.2.4 Statistical tools used in 2022 dissertations corpus:

A number of 27 dissertations constituted the sample of 2022 corpus. The first set of statistics to be analyzed is the descriptive statistics as displayed on table 2.20

Table 2.20: The descriptive statistics used in master dissertations of the year 2022

I	Frequency	Percentage		Mean		Median		Quartiles		Standard deviation		Torsion coefficient		Flattening coefficient		Correlation coefficient		Simple regression	
		app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	27	07	20	04	00	00	00	00	00	05	00	00	00	00	00	02	00	00	00
%	100	25.92	74.07	14.81	00	00	00	00	00	18.51	00	00	00	00	00	07.40	00	00	00
$\sum f$	/	27		04		00		00		05		00		00		02		00	
%	/	100		14.81		00		00		18.51		00		00		07.40		00	

As shown in table 2.20 it is noted that the most used descriptive statistical measures are the frequency and percentage (100 %). A large percentage properly used the percentage (74.07 %), and a 25.92% does not use appropriately. There exists an appropriate use of the Mean, the Standard deviation, and the Correlation coefficient, but with a small percentages of 14.81%, 18.51 %, and 07.40 %, respectively. As for the rest descriptive statistical measures (Median , Quartiles, Torsion coefficient, Flattening coefficient, Simple regression), non of them (00%) is used in the 2022 corpus.

The second set of analysis in this corpus is devoted to simple inferential statistics as displayed in table 2.21, which hold the frequencies and the percentages of the specified descriptive statistics.

Table 2.21: The simple inferential statistics used in master dissertations of the year 2022 (part1)

	Z test		T test		Levene's Test		Chi square Test		Kolomgro v-Smirnov Test		Sign Test		Binomial test		Mann - Whitney test (U)		Wilxoxo n test		One-Way ANOVA		Dunnett test	
	app	inap	app	inap	ap	ina	app	ina	app	inap	app	ina	ap	inap	app	ina	ap	ina	app	ina	app	ina
f	00	00	01	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	03.70	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00	00

Is is noticed from table 2.21 that the T test is the only simple inferential statistics measure used with a 3.70% of appropriate use. The rest of the specified statistics on the table are not used in the 2022 master dissertations sample.

The second set of simple inferential statistics analyzed in the 2022 dissertations corpus is represented in table 2.22.

Table 2.22: The simple inferential statistics used in master dissertations of the year 2022 (part2)

	Scheffe test		Duncan test		Kruskal – Wallis (H)		partial correlation		one-way (ANCOVA)		Fisher test LSD		Tukey's (HSB) test	
	+	-	+	-	+	-	+	-	+	-	+	-	+	-
f	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	00	00	00	00	00	00	00	00	00	00	00	00

It's clear from the table 2.22, that all the remaining simple inferential statistical measures (Scheffe test, Duncan test, Kruskal – Wallis (H), Partial Correlation, One-Way (ANCOVA), Fisher test LSD, Tukey's (HSD) test) are not used in the 2022 corpus.

Advanced inferential statistics targeted in the anamysis of the 2022 dissertations sample are displayed in table 2.23.

Table 2.23: The simple inferential statistics used in master dissertations of the year 2022
(part2)

	Factor Analysis		Two Way ANOVA		Three Way ANOVA		Repeated measures ANOVA		Two – way – ANCOVA		MANCOVA (Multivariate Analysis of Covariance)		Discriminant Analysis	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	00	00	00	00	00	00	00	00	00	00	00	00

The results shown in the table 2.23 above reveals that all advanced inferential statistical measures (Factor Analysis, Two Way ANOVA, Three Way ANOVA, Repeated measures ANOVA, Two – way – ANCOVA, MANCOVA (Multivariate Analysis of Covariance), Discriminant Analysis) are not used in master dissertations during 2022 (00 %).

2.3.2.6 Comparison of the five years corpus use of statistical measures:

Global analysis of the five years corpora from 2018/2022 is summarized in the following tables. The first set of statistics targeted by the analysis is displayed in table 2.24.

Table 2.24: The descriptive statistics used in master dissertations of the five years corpora

	Frequency	Percentage		Mean		Median		Quartiles		Standard deviation		Torsion coefficient		Flattening coefficient		Correlation coefficient		Simple regression	
		app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	131	29	104	27	02	02	00	00	00	27	01	00	00	00	00	11	00	01	00
%	94.92	21.01	75.36	19.56	01.44	01.44	00	00	00	19.56	00.72	00	00	00	00	07.94	00	00.72	00
Σf	/	133		29		02		00		28		00		00		11		01	
%	/	96.37		21.04		01.44		00		20.28		00		00		07.94		00.72	

Table 2.24 shows that the most employed descriptive statistics are the frequencies, in a 94.92% of use. The same observation is about the percentage with a very large percentage of 96.37 %. Percentages use is divided into appropriate use of 21.01 % and inappropriate 75.36 % inappropriately. It is clearly noticed that Quartiles, Torsion coefficient, and Flattening coefficient have never been used by the students are not used at all. The table shows that the students did not use the mean significantly, where only 21.04% of the dissertations have employed it, divided into appropriate use of 19.56% and 01.44% inappropriately. We also note that students used the Median, Standard deviation, Correlation coefficient, and Simple regression appropriately but in at very low percentages, 01.44%, 20.28 % , 07.94 % and 00.72 % respectively.

The simple inferential statistics used in master dissertations is the concern of table 2.25 displaying the frequencies of use of these statistical measures in the five years corpora.

Table 2.25: The simple inferential statistics used in master dissertations of the five years corpora

	Z test		T test		Levene's Test		Chi-square Test		Kolomgrov-Smirnov Test		Sign Test		Bino mial test		Mann - Whitne y test (U)		Wilxo xon test		One-Way ANOV A		Dunnet t test	
	app	inap p	app	inap p	app	inap p	app	ina pp	app	in ap p	a p p	in a p p	ap p	ina pp	ap p	ina pp	ap p	in ap p	ap p	in ap p	ap p	in ap p
f	00	00	06	00	01	00	02	00	01	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	04.34	00	00.72	00	01.44	00	00.72	00	00	00	00	00	00	00	00	00	00	00	00	00

The data presented in table 2.25 indicates that 06 (04.34%) of the dissertations, used appropriately the T test, while a small percentage of it (00.72 %) used both Levene's test and Kolomgrov- Smirnov, as used the Chi–square test of 01.44 %. It is noticed that the rest of simple inferential statistical measures (Z test, Sign test, Binomial test, Mann-Whitney test (U), Wilxon test, One-Way ANOVA, Dunnett test) are not used in the dissertations (00 %) along the five years.

The second set of inferential statistics is summarized in table 2.26 below. From table 2.26, it can be noticed that all dissertations through five years (2018- 2022), does not use the remaining simple inferential statistical measures (Scheffe test, Duncan test, Kruskal – Wallis (H), Partial Correlation, One-Way (ANCOVA), Fisher test LSD, Tukey's (HSB) test), where the percentage of use if 00%.

Table 2.26: The simple inferential statistics used in master dissertations of the five years corpora

	Scheffe test		Duncan test		Kruskal – Wallis (H)		partial correlation		one-way (ANCOVA)		Fisher test LSD		Tukey's (HSB) test	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	00	00	00	00	00	00	00	00	00	00	00	00

The advance inferential statistics used along the five years dissertations are summarized in the table 2.27.

Table 2.27: The advance inferential statistics used in master dissertations of the five years corpora

	Factor Analysis		Two Way ANOVA		Three Way ANOVA		Repeated measures ANOVA		Two – way – ANCOVA		MANCOVA (Multivariate Analysis of Covariance)		Discriminant Analysis	
	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp	app	inapp
f	00	00	00	00	00	00	00	00	00	00	00	00	00	00
%	00	00	00	00	00	00	00	00	00	00	00	00	00	00

From the observation of the findings on table 2.27 above, it is confirmed that all advanced inferential statistical measures (Factor Analysis, Two Way ANOVA, Three Way ANOVA, Repeated measures ANOVA, Two – way – ANCOVA, MANCOVA (Multivariate Analysis of Covariance), Discriminant Analysis) are not used through the five years 2018-2022.

2.2.4 Discussion of the findings obtained from research question Two:

The obtained findings from the second research question showed that the most used descriptive statistics are frequencies and percentages by the students. It is also assumed that most of master dissertations are descriptive researches, and all of them used the descriptive statistics, which is according to Douglas S. Shafer, Zhiyi Zhang (2014, p09):“ the branch of statistics that involves organizing, displaying, and describing data”.

Moreover, the use of frequencies and percentages is essential in this type of research. Therefore, descriptive research is not devoid of frequencies and percentage in results analysis. This finding agrees with the findings of Al-Shafi'i et al. (2010), who carried out a study on the reality of statistical analyzes in theses (Majisters and PhD) in Educational Psychology and Mental Health. Their analysis revealed that: 88 % of the studies employed percentages and frequencies. Also with the study of Said (2009), who carried out a study on the use of statistical methods in university theses in the field of information and libraries, the analysis of the study revealed that: 96.1 % of the studies employed percentages in analyzing the data contained in university theses.

As for the inappropriate use of percentages, this is due to the fact that percentages are not suitable for many studies that look at relationships between variables, as well as those that look at trends or attitudes. That is what Subrata, N, and Palash, D. (2018), confirmed stating that “ the skill of selecting appropriate statistical test is very essential for making good and specific conclusion”.

Despite the importance of the mean in research it is not largely used in the master linguistics dissertations since the percentage of its use is only 31 %, this result can interpret, that all students relied on the percentage as a descriptive statistical measure. According to Prem S. Mann (2010, p80), the mean is “the most frequently used measure of central Tendency”. Moreover, Douglas and Zhang (2012, p.9) confirmed the use of the mean stating that “The first measure of central location is the usual “average” that is familiar to everyone”.

This study's findings showed that there is an inappropriate use of many descriptive statistic measures. This conclusion is in agreement with the results of the study Afana (2011), which addressed the common errors in educational research designs among postgraduate students in Palestinian universities. His study showed that students have a difficulty of defining or making research tools, and to determine the appropriate type of

statistical method, and most students do not know the inferential statistical types. It should also be noted that the lack of appropriate use of statistical measures greatly affects the credibility of the study, this was confirmed by Ercan et al (2007, p128) stating that “using inappropriate statistical tools can be a waste of time and financial resources”. This finding can be explained by students’ lack of knowledge of how to use them. This was confirmed by Falelli (2009) explaining the misuse of statistical tools by lack of basic knowledge of statistics among the researchers.

Concerning the use of advanced inferential statistical measures (Factor Analysis, Two Way ANOVA, Three Way ANOVA, Repeated measures ANOVA, Two – way – ANCOVA, MANCOVA (Multivariate Analysis of Covariance), Discriminant Analysis), it is found that all dissertations through all years, from 2018 to 2022, did not use it, either appropriately or inappropriately. This finding agrees with the results of Al-Tarawneh (2018), whose study was about assessing and surveying the statistical methods used in the Master Theses in the Faculty of Educational Sciences at Muatah University". His study revealed that many advanced statistical methods were not used. Similarly, Al-Nabhan (1998) confirmed, in his study about the reality of majister's theses in education and psychology during the years 19971-1988", that most of the studies did not use advanced statistical methods. In addition, our results agrees with the results of the study of Atallah and Al-Sheikh (2009) which was about the statistical analysis methods used in analyzing data in majister's and doctoral theses at the University of Khartoum". The results showed a lack of use of advanced statistical methods such as factor analysis and discriminant analysis. It also showed the great use of descriptive statistics. These findings can be examined by the inability of students to conduct such advanced inferential statistical measures, and the use of simple statistical measures is much easier. This can also be interpreted by the lack of use of these advanced measures in the linguistics research area, as well as to the nature of the objectives of the master’s dissertations

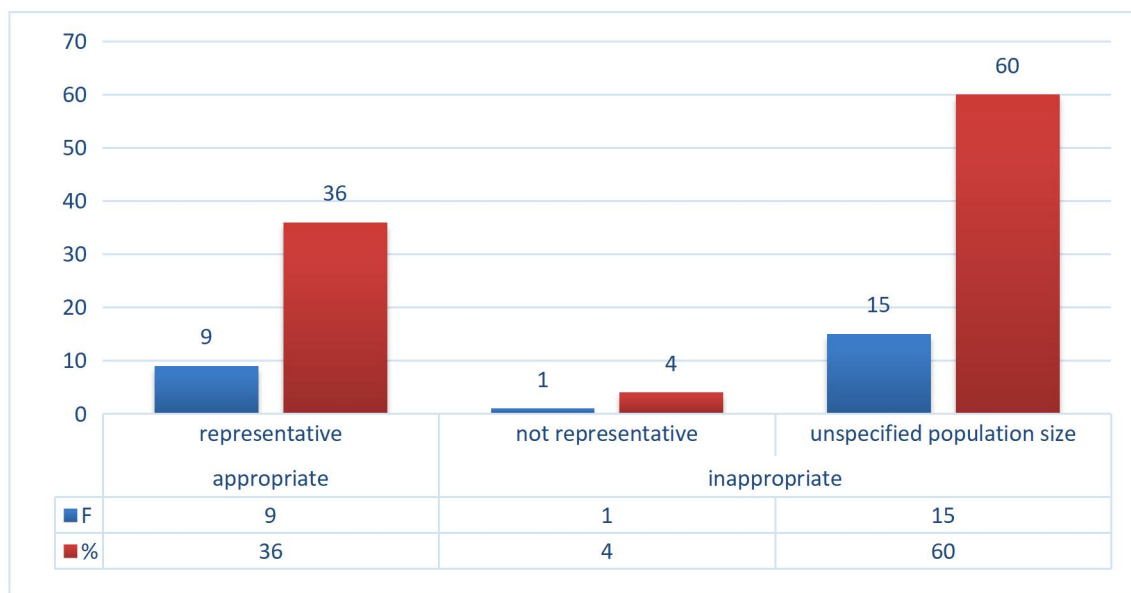
topics. In addition, most of the study questions were about investigation, evaluation, the degree of presence or trends, or the relationship between two variables, and these questions are usually answered using descriptive statistics.

2.2.5 Data Analysis of Research Question Three:

The third research question explores the appropriateness of sample size and sample selection method in linguistics master dissertations.

2.2.5.1 Sampling size and method in 2018 dissertation corpus:

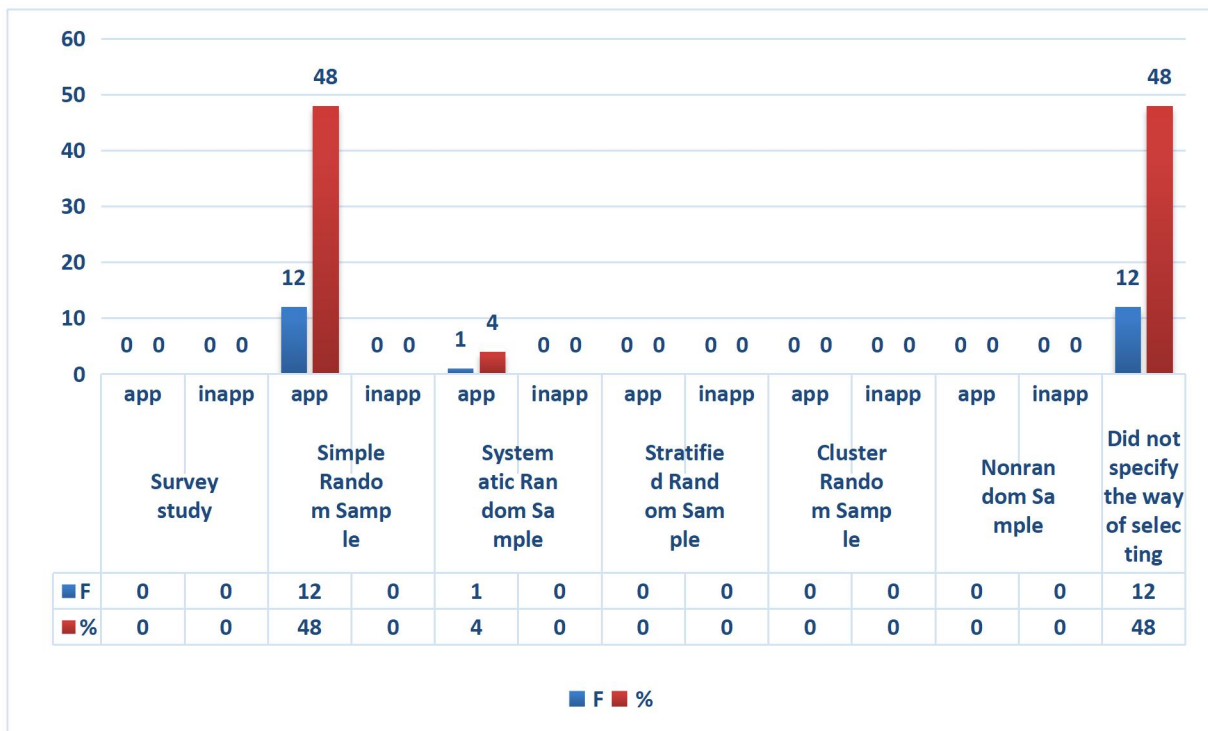
The year 2018 involves 25 dissertations. The sample size and sample selection methods used are summarized in the figures of this section. The first graph 2.7 displays the extent of appropriate sample size used in the 2018 dissertations.



Graph 2.7: The appropriateness of sample size in the 2018 dissertations corpus

Graph 2.7 reveals that 36 % of the dissertations use an appropriate sample size, While we find most of it used inappropriate sample size, where the percentage was 64 %, divided into: 04 % was not representative population, and 60% of it, was unspecified population size.

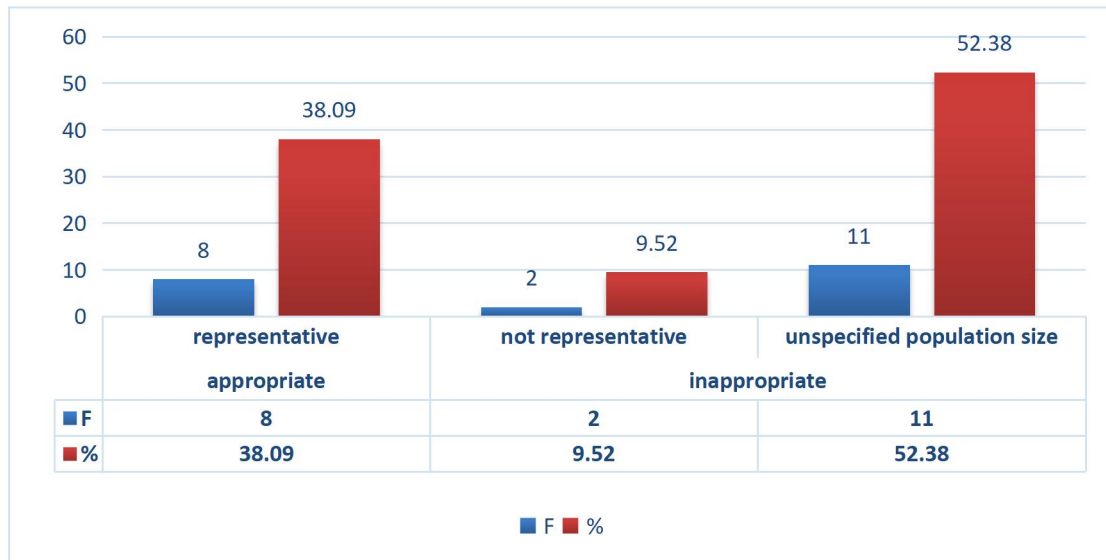
Sample selection method appropriateness was analyzed in the second graph in this section. Graph 2.8 displays the frequency and appropriate use of sample selection method.



Graph 2.8: The appropriateness of sample selection method in the 2018 dissertations corpus. Examining graph 2.8, it is noticed that the most of students chose appropriately the simple random sample as a selection method, where the percentage was 48 %, and we have 04% of them chose appropriately the systematic random sample, while, the other large percentage of 48 %, did not specify the method of sample selection. It was found that students did not chose the survey study, stratified random sample, and cluster random sample, in addition to the non-random sample.

2.2.5.2 Sampling size and method in 2019 dissertation corpus:

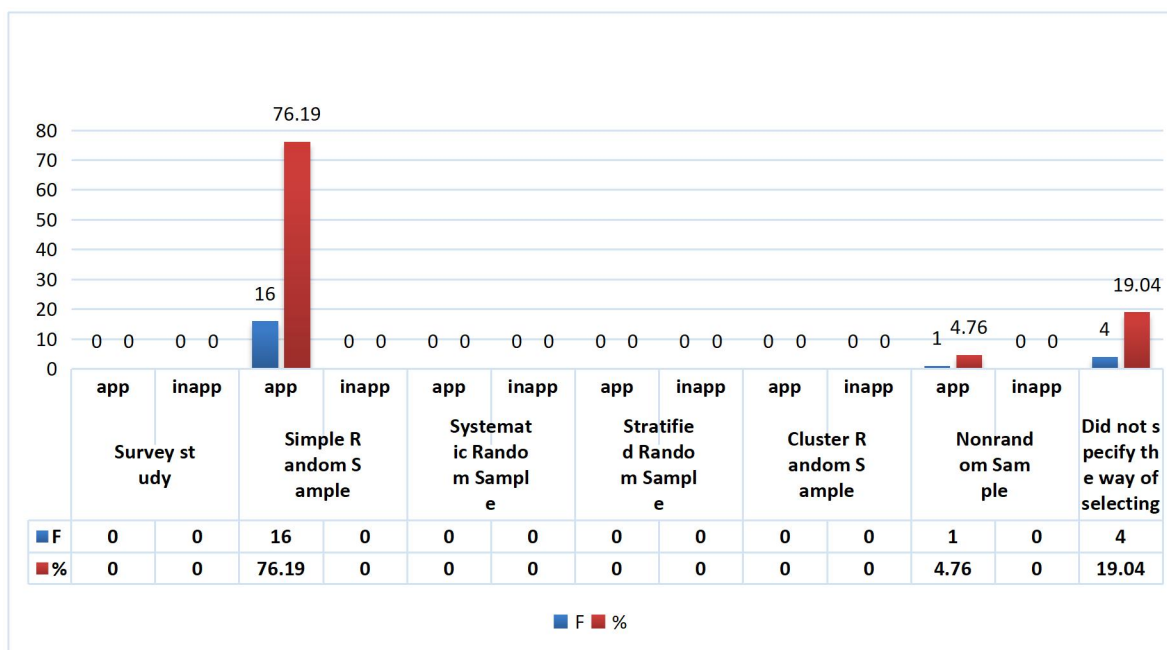
The 21 dissertations of the year 2019 were analyzed to examine the use of sample size and sample selection method. Graph 2.9 displays the sample size selected in the dissertations of the year 2019.



Graph 2.9: The appropriateness of sample size in the 2019 dissertations corpus

As it is illustrated in graph 2.9 , it is noticed that 38.09% used an appropriate sample size, but the majority of students (61.90%) used inappropriate sample size, including 9.52% that is not representative. Most dissertations 52.38% did not specify the population size.

As to sample selection, graph 2.10 displays the frequency and appropriateness of sample selection methods in the 2019 dissertations corpus.

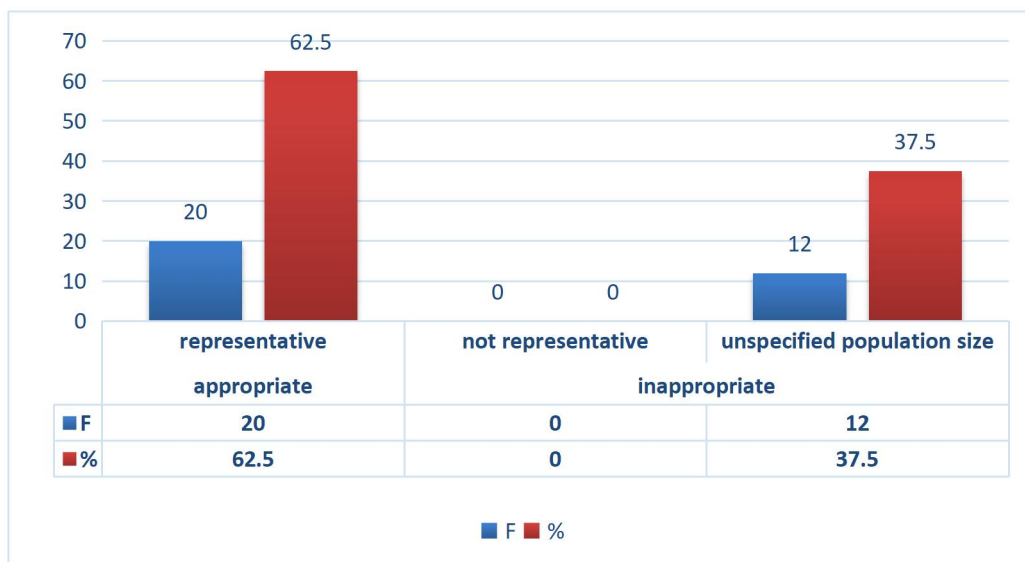


Graph 2.10: The appropriateness of sample selection method in the 2019 dissertations corpus

From the findings displayed in graph 2.11, the majority of students chose the simple random sample inappropriately with the percentage was 76,19% a percentage of 04,76% of them chose appropriately the non random sample. While 19,04% , did not specify the way of method selection. We also note that students did not chose the survey study, systematic random sample, stratified random sample , and cluster random sample.

2.2.5.3 Sampling size and method in 2020 dissertation corpus:

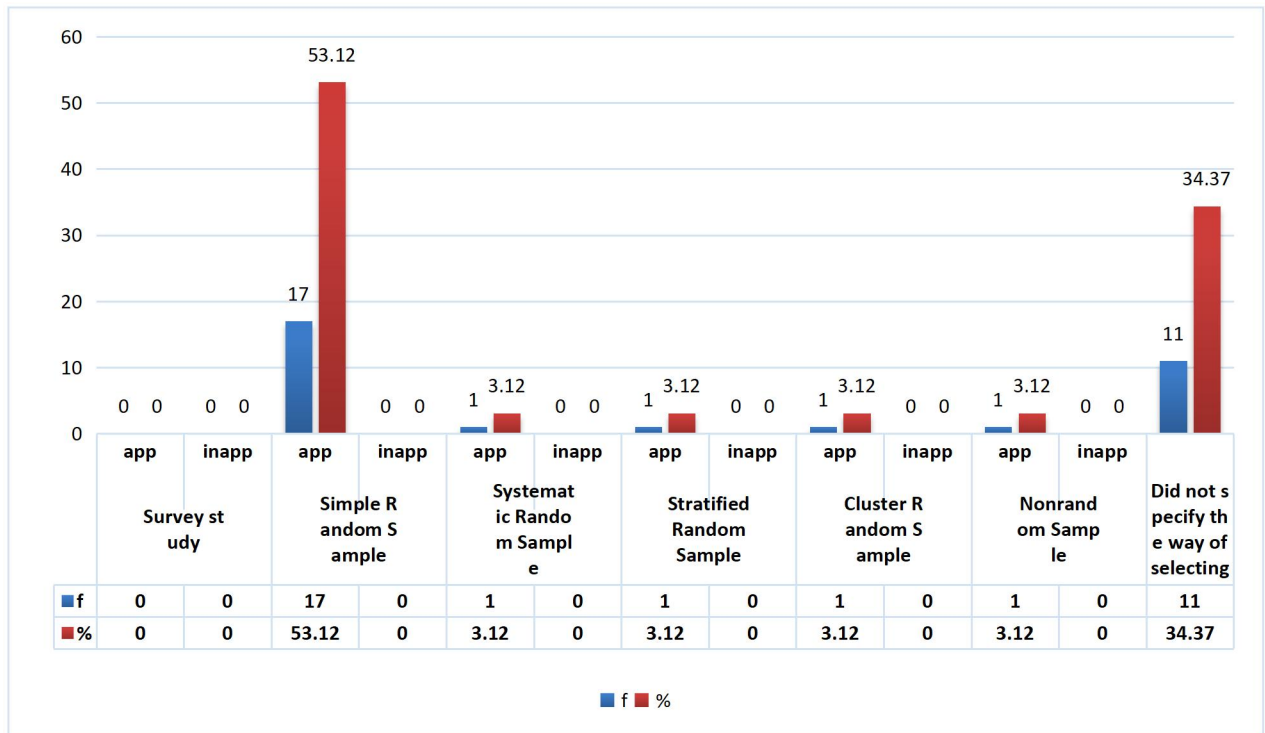
A number of 32 dissertations of the year 2020 were analyzed to check the appropriateness of use of sample size and sample section method. Graph 2.11 displays the use of sample size among 2020 dissertations.



Graph 2.11: The appropriateness of sample size in the 2020 dissertations corpus

Graph 2.12 displays that there is a large percentage of students properly used a representative sample, where the percentage was 62.5%. A percentage of 37.5% of the dissertations did not specify the population size.

The used sample selection methods in the 2020 master dissertations sample are displayed in graph 2.12.

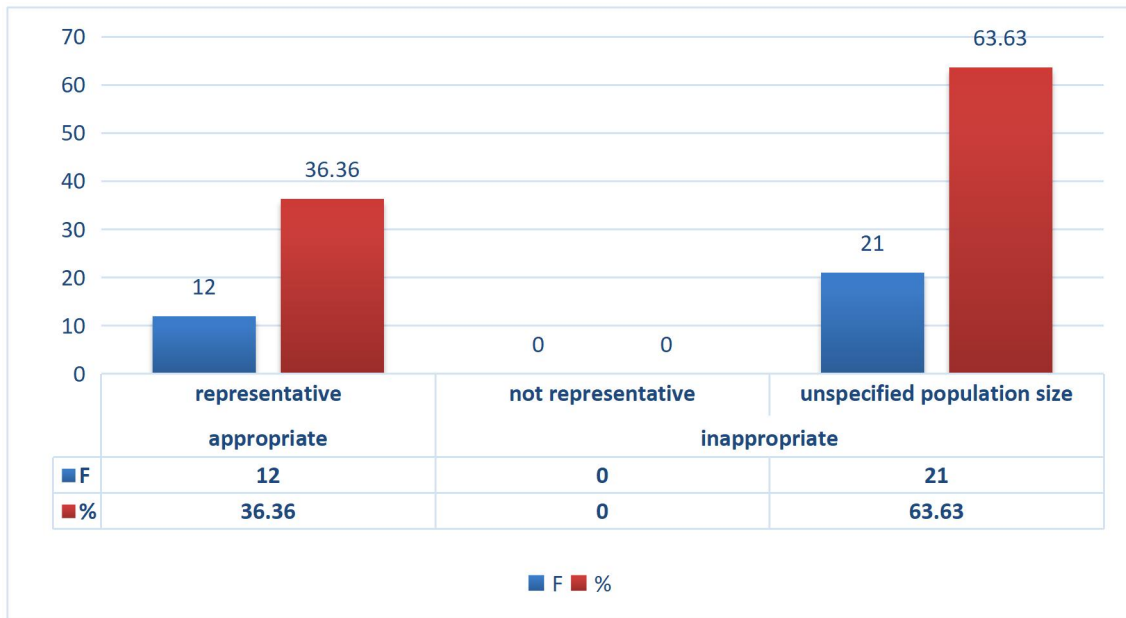


Graph 2.12: The appropriateness of sample selection method in the 2020 dissertations corpus

As observed in graph 2,12, there is a variety in the sample selection method, 53,12% chose the simple random sample, 03,12% chose appropriately the systematic , stratified, and cluster random sample, and the same percentage for the non-random sample. A percentage of 34.37% did not specify the way of selection. It is also noticed that students did not choose the survey method. (census)

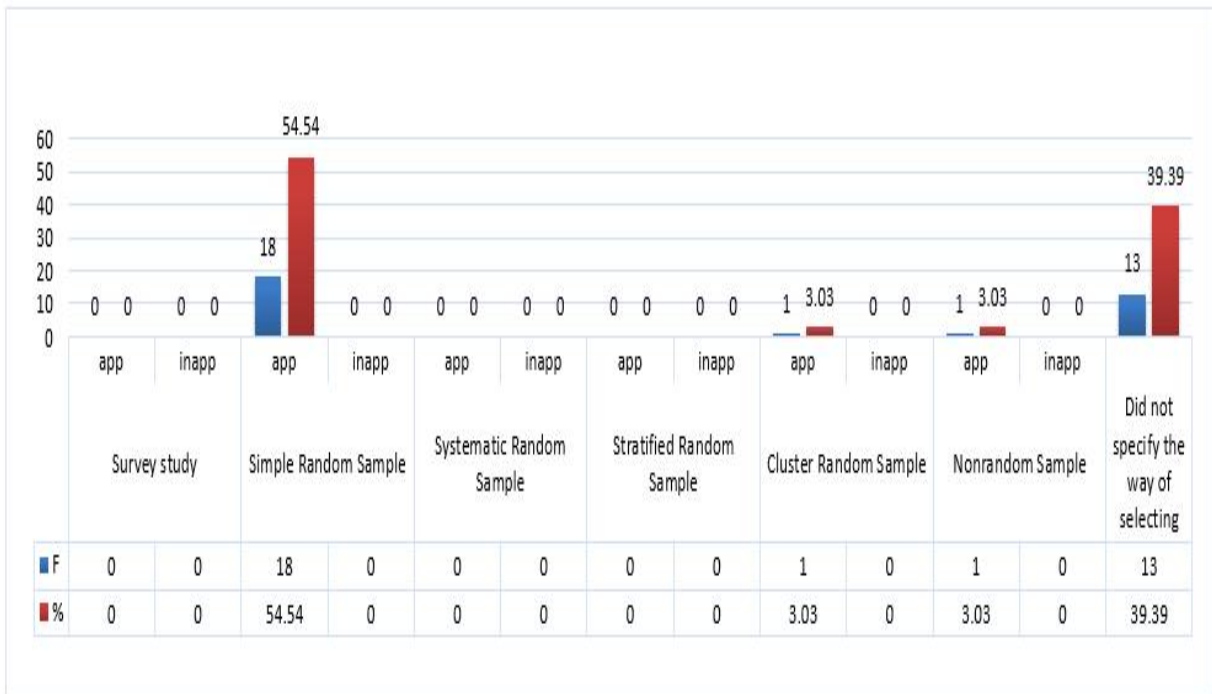
2.2.5.4 Sampling size and method in 2021 dissertation corpus:

Sample size and sample selection method in the 33 dissertations of the year 2021 are displayed in this section. The sample size selection data are displayed in graph 2.13



Graph 2.13: The appropriateness of sample size in the 2021 dissertations corpus

The result of the analysis presented in graph 2.13 show that there is 36,36% of students appropriately used the sample size, while the majority of them 63.63% inappropriately used the sample size, because they did not specify the population size. Sample selection method used in the 2021 dissertations is represented in graph 2.14

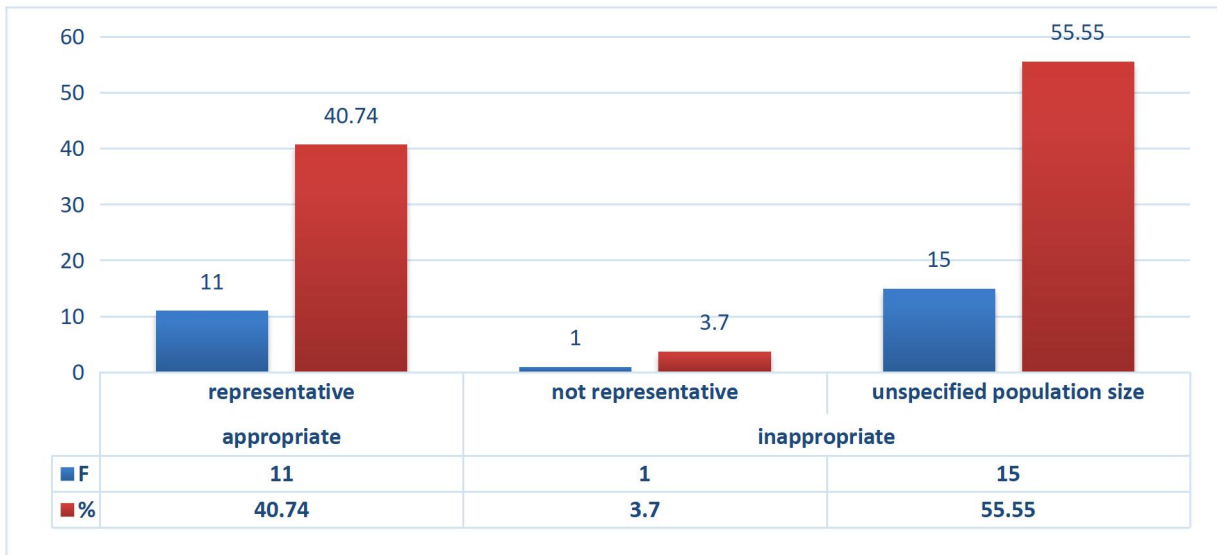


Graph 2.14: The appropriateness of sample selection method in the 2021 dissertations corpus

As illustrated in the graph 2.14, a large percentage of 54.54% of dissertations appropriately used the simple random sample, 03.03% used the cluster random sample, and the nonrandom sample, 39.39% of dissertations did not specify the method of selection. It is also noticed that students did not choose the census, the systematic random sample, and stratified random sample.

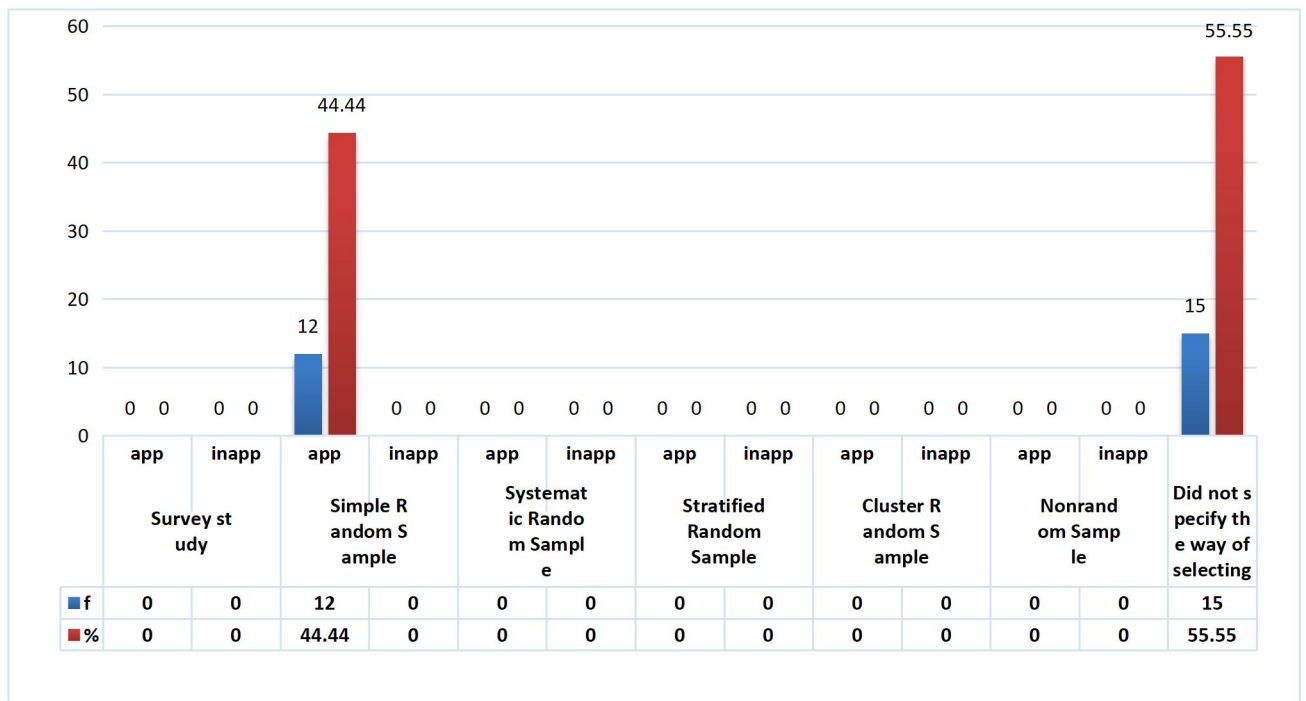
2.2.5.5 Sampling size and method in 2022 dissertation corpus:

The analysis of the 27 dissertations of the year 2022 revealed important findings about sample size and sample selection method. Graph 2.15 displays findings related to small size selection among 2022 dissertations small .



Graph 2.15: The appropriateness of sample size in the 2022 dissertations corpus

The above graph 2.15 reveals that there is 40.74 % of dissertations used an appropriate sample size, while 59.27% of them used inappropriate sample size. A percentage of 03.7% did not use representative sample, and 55.55% did not unspecified population size. Sample selection method frequency and percentage is summarized in graph 2.16.

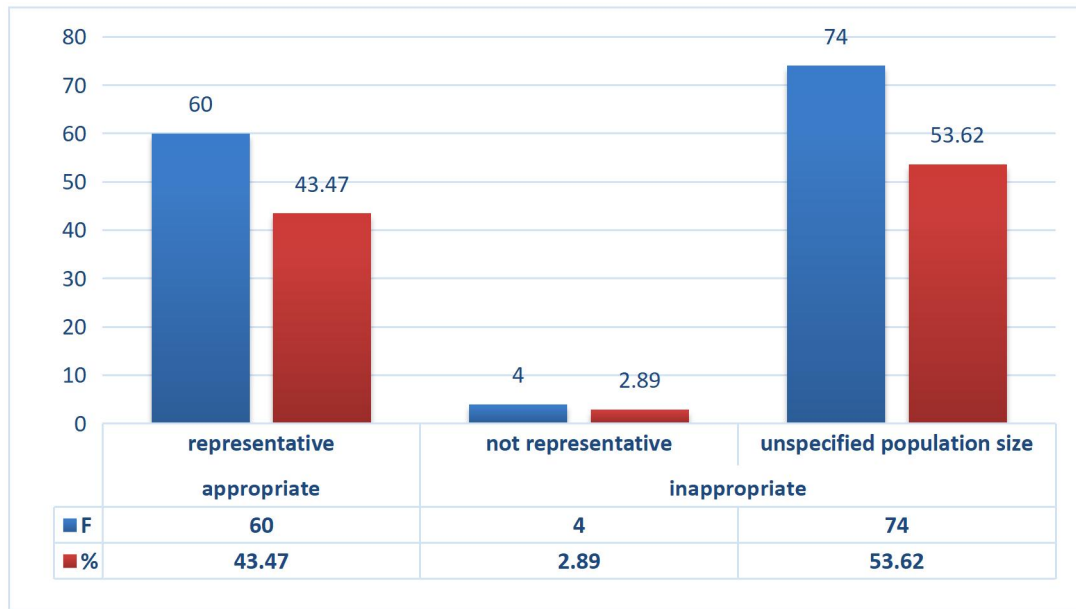


Graph 2.16: The appropriateness of sample selection method in the 2022 dissertations corpus

The above graph 2.16 shows that 44.44% of students chose appropriate simple random sample as a selection method, while, the large percentage of 55.55%, did not specify the method of selection. It is noticed that students did not use the survey study, systematic random sample, stratified random sample, and cluster random sample, in addition to the non-random sample.

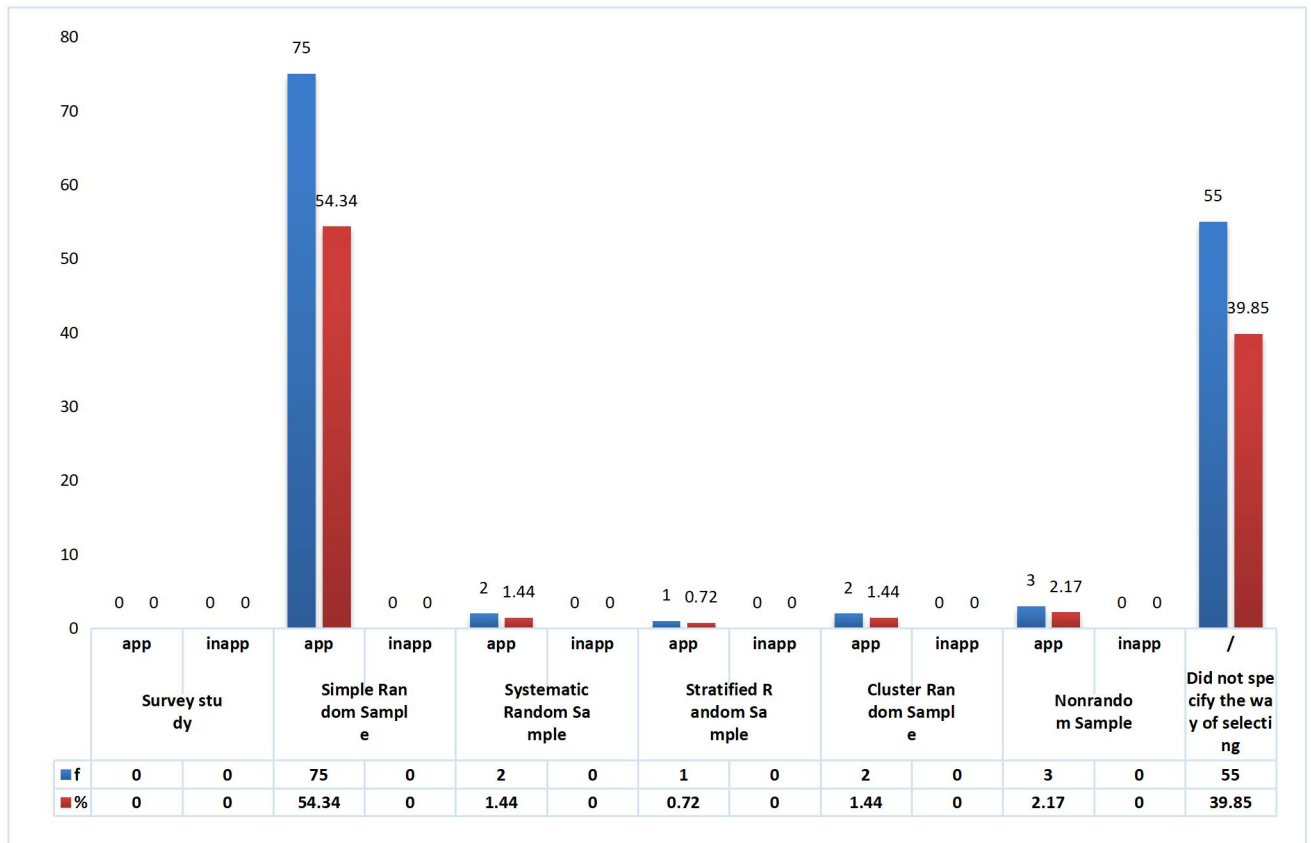
2.2.5.6 Sampling size and method in the five years dissertation corpora:

The 138 dissertations of the five years corpora are analyzed globally and the use of sample size and sample selection methods are compared along the five years. Sample size selection along the five years is displayed in graph 2.17



Graph 2.17: the appropriateness of sample size in the five years dissertations corpora

Regarding to the results shown in the graph 2.17 above, it is noticed that 43.47 % of students used an appropriate sample size, but the majority of students (56.52%) used inappropriate sample size, including 02.89% that are not representative samples. A percentage of 53.62% did not specify the population. Sample selection methods used in the dissertations along the five years are displayed on graph 2.18.



Graph 2.18: The appropriateness of sample selection method in the five years dissertations corpora

As illustrated in graph 2.18 above, it is noticed that there is a large percentage (54.34%) of students who used the simple random sample appropriately, and a few percentage of 01.44% chose both the systematic random sample, and the cluster random sample appropriately, while only 00.72 % of students chose the stratified random sample, and 02.17% chose the nonrandom sample. It is found that a large percentage of students 39.85% did not specify the way of selecting. We also note that students did not chose the survey study

2.2.6 Discussion of the findings obtained from research question three:

According to David (2003, p. 12) “The gathering of all data is not always possible due to barriers such as time, accessibility, or cost. Instead of that, we often gather information from a smaller subset of the population, known as a sample”. A sample is a subset of the

population from which information is actually collected, selected using some sampling technique in such a way that they represent the population. Therefore, sample size is considered an important issue in the field study, there are many conditions to choose the size of sample, the most important of which is to truly represent population. However, the findings show that there are a large percentage of students that did not use an appropriate sample size that is not representative and in most cases they did not specify the population. These findings agree with the study of Afana (2011), who confirmed that there are many mistakes in master dissertations related to research sample.

This study findings agree with the study of Zakri (2006) which concluded that the simple random sample is the most used, and the least is the quota sample, there are majister's theses in which the researchers did not specify the type of sample chosen, and there are a number of dissertations in which the extent to which the sample represents the community was not specified. In addition, it agrees with the study of Disman, Ali, and Barliana (2017) in which they concluded that there are various weaknesses in the students' dissertations, particularly related to the way of thinking and inappropriate use of research method and statistical method. Inappropriate population, bias sampling technique, and inappropriate data analysis process and hypothesis testing are also found in the dissertations corpora off this study.

This study findings can be interpreted with that fact that students make many mistakes when they calculating the sample size without taking into account the target population size. This is confirmed by Kojak (2007, p.80), when she explained that a number of researchers make many common mistakes related to the type and size of the sample and the method of selection. She explained that among the common mistakes in this context are: the mistake in defining or determining the target population, which makes the selection of the sample difficult or inaccurate. The error in determining the appropriate sample size for research

purposes, as it may be too small or unnecessarily large. Where the researcher may resort to using small-sized samples for ease of dealing with them, without giving attention to the possibility that these samples are representative of the statistical community or not. Also, sometimes the researcher is satisfied with the individuals he has and chooses them as a sample for his research, and this sample may not be representative of the research community. Some researchers make a mistake in determining the number of groups needed by the research in proportion to the research design. In addition, the researcher may interfere in a non-objective manner in determining the experimental group and the control group in order to achieve certain results, while this selection must be done randomly. Afana (2011, p. 7) added to these errors the researchers' inability to apply the criteria of randomness in selecting samples, as the researcher is supposed to choose a sample that bears the characteristics of the community from which it was derived, so that there is homogeneity between the sample and the statistical community, whether the samples are selected in a simple random way, organized randomly, or stratified randomly, and the researcher did not clarify the size of the sample when announcing the results of the statistical analyzes, how to choose it, and the motivation of its members to participate, so that the conclusion and generalizations can be judged in light of that.

In the same context Odeh (2013) added that some researchers in trying to determine the sample size they get confused wither to use 10% or 20% of the population size since they do not know the criteria of selection of the appropriate sample size and the specific size determination equations.

General Conclusion

This study sought to understand and assess the appropriateness of the use of statistical measures and tools used in Linguistics master dissertations. Along with this main objective a number of relevant objectives were deemed important in this study including the assessment of the used data collection tools, the psychometric characteristics, the research methods, the sample size and the sampling techniques used in the selected corpus.

The study surveyed 138 dissertations of linguistic Master students, between 2018 and 2022, and adopted the deductive content analysis approach in all dissertations available in the D-Space, institutional repository of Mohamed Boudiaf University of M'sila. This study is significant as it tackles one of the crucial areas in Linguistics master's speciality, which is examination of the use of statistical tools and techniques in Linguistics Master Dissertations. It does not only shed light on the extent of the use of statistical tools and techniques, but also seeks to find out the appropriateness of these methods and techniques, that would definitely contribute to the promotion and revealing the most important errors related to the use of statistical methods, thus contribute to the quality of graduation dissertations. The study concluded the most important results:

- The most prevalent method used by students is the descriptive method.
- The questionnaire is the most used data collection tools compared to the interview, observation, and test.
- Most students did not investigate the validity and reliability of the data collection tools.
- The findings also revealed that the focus and wide use was of frequencies and percentages by the students as statistical tools. In addition, by a few percentages, the average and Correlation coefficient was used.

- The results of the study also indicated that the advanced inferential statistical measures in all dissertations through all years, from 2018 to 2022, were not used.
- Most of students made many mistakes when they calculating the sample size. The solid majority of students did not use an appropriate sample size, whether it is not representative of the population or not specified the population size.

Eventually, the study recommends the need to give significant to statistics as an important educational module, and to train students on how to use appropriate statistical tools in an appropriate and effective manner.

Pedagogical Implications

In light of the findings of this study, a number of pedagogical implications are directed to the promotion of statistical measures use in linguistics master dissertations

- Paying attention to educational statistics as a basic module in the English department.
- The need to teach the topics of parametric inferential statistics and non-parametric.
- Divide the statistics module into lectures and practices (C+ TD).
- Conducting training courses in statistics, its types and conditions of use for students and teachers.
- Evaluation of master's dissertations by experts committee to check the accuracy of the statistical methods used, before the discussion.
- Directing attention towards the importance of using inferential statistics, due to its importance in finding relationships between interrelated variables.
- The students should be careful in choosing the sample size to ensure that it represents all the elements of the statistical community.
- Providing the latest books, references, and scientific journals specialized in the field of statistics, especially educational statistics.

- The Provision of spaces equipped and designated for statistical processing by specialists in the field of statistics, especially educational statistics.

Recommendations

Finally, after obtaining the results of our study, we can suggest the following recommendations:

- Paying attention to educational statistics as a basic module in the English department.
- The need to train and teach the topics of parametric inferential statistics and non-parametric.
- Divide the statistics module into lectures and practices (C+ TD).
- Conducting training courses in statistics, its types and conditions of use for students and teachers.
- Evaluation of master's theses by a specialized committee on the accuracy of the statistical methods used, before the discussion.
- Interest in advanced inferential statistics, due to its importance in finding relationships between interrelated variables.
- The students should be careful in choosing the sample size to ensure that it represents all the elements of the statistical community.
- Providing the latest books, references and scientific journals specialized in the field of statistics, especially educational statistics.

Provision of spaces equipped and designated for statistical processing by specialists in the field of Statistics, especially educational statistics.

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Appendices:

Appendix 1: The list of Dissertations (2018-2022)

N ^o	Year	Title
1	2018	The Effects of Raising Metacognitive Awareness of the Reading Process on Students' Reading Fluency and Comprehension The Case of Third Year at Walli Ben Sawsha Middle School Students in M'sila
2		Students' Perceptions and Attitudes towards the Use of Social Media in Enhancing English Language Learning The Case of Second Year LMD Students at M'sila University Department of English
3		Investigating Teachers to Reduce Anxiety in EFL Case of 1st year students at M Dissertation Submitted to the University of M'sila ' and Students' Strategies Speaking Classes M'sila University.
4		Investigating EFL Learners' Use of Language Learning Strategies Case of 1st year students at M'sila University
5		Investigation of The Reality of Learner-Centered Approach In Algerian EFL Classes. Expectations VS Reality The Case of EFL Second Year Students at Al-Tamimi Secondary School in M'sila.
6		The Use of Translation in TEFL Advantages and Disadvantages Case of: Third Year Pupils and English Teachers of Hamidi Aissa Secondary School – Ouledaradj - M'sila
7		Investigating the Role of Small Sized Classroom in Enhancing EFL Learners' Oral Performance - Case of study: First Year Pupils at Belhadj Dhaimi Middle School.
8		Educational Games as a Means to Promote English Vocabulary Learning Case Study of Second Year Students at Iben Roched Middle School in Magra
9		Exploring Extrovert and Introvert Learners' Attitudes Towards and Preferences for Oral Error Correction : Case of Second Year EFL Students at Mohammed Boudiaf M'sila University
10		Overcoming EFL Learning Hindrances Through the use of Mother Tongue - The Case of Second Year (Algiers Road) Secondary School Students – Bou-Saada
11		An investigation into EFL Students' Difficulties in Speaking Skill. A Case Study of Second Year Students at Mohamed Boudiaf University of M'sila
12		Adopting Partnership in Learning, Teaching, and Assessment as a Strategy to Foster the EFL Learning Process: The Case of Third Year English Language Learners, Mohammed Boudiaf University, M'sila
13		Enhancing Learners' Vocabulary through Reading Comprehension: The Case of First Year Students at Mohammed Boudiaf, M'sila University
14		Investigating the Use of Cooperative Learning Method in the Algerian EFL Classes: Case Of Study: Al'Haj Kheri L'khier Secondary School, Magra, M'sila.
15		Comparison between Fresh and Experienced Teachers' Self-Efficacy and Classroom Management The Case of EFL Secondary School Teachers ,at M'sila
16		EFL Teachers' and Learners' Attitudes towards the Use of ICTs in Speaking Lessons The Case of Second Year Pupils at Baair Mohamed Secondary School Ain El-Melh, M'sila.
17		Investigating EFL Learners' Difficulties in Developing Oral Fluency: the Case of Second Year Students of English Language at Mohamed Boudiaf University
18		An Investigation Into Students' Writing Difficulties. Case of Second Year LMD Classes.
19		Using integrated ICT- based approach to teach culture to EFL students: The Case of First Year Master Students at Mohamed Dabbaghin University, Setif
20		Teachers' and Learners' Perceptions of Using Dynamic and Formative Assessment to Improve Oral Proficiency in EFL Classes The Case of Third Year University

		Students and Teachers of English
21		Investigating Learners' Difficulties in Speaking and Writing Skills: The Case of First Year Students of the Department of English at M'sila University
22		Teachers and Learners' Perspectives on EFL Learners' Hindrances in Turn-Taking in Oral Expression Session :The Case of Third Year LMD Students at M'sila University
23		An Investigation of the Teaching/Learning of the Oral/Aural skills in the Department of English at M'sila University
24		Investigating EFL Students Use of Self- Regulated Learning Strategies and their Effects on their Academic Achievement: the Case of Third Year Students at M'sila University
25		EFL Learners and Teachers' Awareness towards the Role of Extensive Reading in Enhancing the Writing Skill:The Case of Third Year EFL Students at M'sila University
2019		
26		The Impact of Pragmatics Instruction on Students' Grammar Achievement: The Case of Second Year Students at the Department of English at M'sila University
27		The Effects of Teacher's Personality on EFL Learners' Motivation
28		Enhancing EFL Learners' Oral Fluency Through The Use of Formulaic Expressions: The Case of Second Year Students at the Department of English at M'sila University
29		Investigating EFL Learners' and Teachers' Attitudes towards the Use of Authentic Texts in Teaching Writing
30		ASSESSING THE COLLOCATIONAL COMPETENCE OF ENGLISH EFL LEARNERS :A Case study of Third Year LMD Students of English at M'sila University
31		Investigating the Problems Facing EFL Learners in Translating Idioms. the case of: Third Year Students at the Department of English University of M'sila.
32		EFL Teaching and Learners' Perception about the effect of English TV series on EFL Learners' Conversational Competence: The case of third year students at Mohamed Boudiaf M'sila University
33		Improving EFL Learners' Essay Writing Through Teaching Syntax: The case of Second Year Students at the Department of English–M'sila University
34		The Effect of Social Media Language on EFL Learners' Academic Writing Performance. Case of Master One Linguistics Students at M'sila University
35		Baccalaureate Exam Scores as Predictor of First Year EFL Students' Achievement The Case of First Year Students at M'sila University
36		Developing EFL Students' Reading Strategies through the implementation of Meta-cognitive Activities The Case of 2nd year M'sila University
37		Investigating the Relationship between Metacognitive Learning Strategy Use and EFL Learners' Writing Achievement: The Case of Second Year EFL Learners at M' sila University
38		Investigating the Impact of the Integration of Error Analysis Instruction on Learners' Grammar Accuracy Performance. The Case Study of Third Year Malek Bnou Anes High School Learners. Sidi Aissa
39		The Influence of Mother Tongue on EFL learners' Written Productions The Case of Third Year EFL Students at Mohammed Boudiaf M'sila University
40		Investigating the Imp 'The Case of Third Year the Importance of Telling Short Stories in Promoting Creativity 'The Case of Third Year EFL Students in the University of M'sila'
41		The Impact of Facebook Language Use on EFL Students ' Vocabulary Learning : The Case of Third Year Students at the Department of English at M'sila University
42		Students Attitudes and Perceptions towards Intercultural Communicative Competence The Case of Third Year Students at the University of Mohamed El Bachir El Ibrahim-BBA
43		An Investigation into the Effects of PowerPoint Presentation Use on EFL Student's Effective Note Taking Skill and Attitudes. The case of EFL Master one students at M'sila university
44		Difficulties Facing EFL Pupils in Writing a Composition at Secondary Schools in M'sila. The Case of Third Year classes at Abdelmadjid Allahoum High School
45	2019	EFL Learners and Teachers' Awareness towards the Role of Extensive Reading in Enhancing the Writing Skill: The Case of Third Year EFL Students at M'sila University

46		Enhancing EFL Learners' Oral Skills through the Use of BBC Learning English Podcasts as a Home Practice Tool The Case of Second Year Scientific Learners of Abdel Hak Ben Hammouda Secondary School, BBA.
2020		
47		Improving Students' Oral Performance through Classroom Interactive Debates The Case of Second Year LMD Students of English at Mohamed Boudiaf University of M'sila
48		Teacher and Learner's Perceptions on Using Peer Evaluation to Improve EFL Writing .The Case of Second year LMD Students at M'sila University
49		Investigating Research Competence Among EFL Learners: Perceptions and Challenges. The Case of Master Two Linguistic Students at the Department of English at M'sila University.
50		Investigating the Correlation between EFL Learners' Levels of Emotional Intelligence and their Pragmatic Competence of Apology Speech Act Realization. Case of Master Two Students at M'sila University
51		An investigation into the Use of Metacognitive Strategies in Translating Pragmatic Texts The Case of First Year Master Students at University of M'sila
52		An Investigation into the Effect of Conversational ImplicatureBased Instruction on Improving EFL Learners' Illocutionary Competence. The Case of Third year students of English at the University of M'sia
53		Teachers' and Students' Perspectives about Teaching Creative Writing at University Level: Case of Third- Year EFL Students at M'sila University
54		The Relationship Between EFL Students' Learning Style Preferences and their Language Written Achievements: The Case of Second Year EFL Learners at M'sila University
55		Analysis of Factors that Promote EFL Critical Reading –The case of third year M'sila University
56		An Exploratory Study of Gender Differences in Writing Self-Efficacy Beliefs among Third-year Undergraduate Students at M'sila University
57		Exploring the Relationship between Cultural Intelligence and Strategic Competence among Third year EFL Students at M'sila University.
58		EFL Learners' Perceptions towards Using Mobile Language Learning Applications in Improving Vocabulary Acquisition .Case of Master One Students of Linguistics at Mohamed Boudiaf Universiy, M'sila
59		Investigating EFL Students' Listening Comprehension Difficulties
60		Teachers' Corrective Feedback Influence on EFL Learners' Grammatical Accuracy in Oral Class. The Case Study of First Year License Students of English Language at Mohamed Boudiaf University.
61		An Investigation of Identity and Intercultural Awareness in English as a Foreign Language Textbook The case of: The Algerian Third Year Secondary School English Textbook
62		Investigating the Usefulness of Cognitive Strategies in Enhancing Critical Reading. Case Study : Master One Civilization and Literature Students at M'sila University
63		Investigating EFL Learners' Erroneous Use of Phrasal Verbs: The Case of First Year Students' at Mohamed Boudiaf M'Sila University
64		Exploring the Relationship Between Grammar Learning Strategies Use and Grammar Competence. Case of Second Year Students at M'sila University
65		A Causal Comparative Study into the Effects of Cognitive style and Academic Streams on EFL Students' Academic Achievement. Case of EFL Master 2 Students
66		Investigating the Role of the Teacher in Promoting Language Learning Autonomy: Perceptions and Practices. The Case of Second Year Students and EFL Teachers at M'sila University
67		Teachers' and Learners' Views about the use of Mind Mapping Technique in Writing : The Case of Third Year Students at the Department of English at M'sila University
68	2020	Investigating the Role of Motivation in Enhancing Learners' Reading Self-Improvement The Case of First Year EFL Learners at Msila University

69		Investigating Student' Perception Towards Using Aspects of Connected Speech to Develop Phonological Accuracy: the Case of Third Year Students at the Department of English University of M'sila.
70		Students' Response to Teachers' Feedback on Writing The Case of Third Year Students at Ghuettouche Khalifa Secondary School
71		Investigating Psychological barriers to Oral Fluency-The case of second year EFL student Mohamed Boudiaf M'sila University
72		Using YouTube Videos in Class To develop EFL Learners' Vocabulary . A Case of First Year Students at M'sila University
73		The Impact of Pedagogical Peer-Tutorship on First-Year EFL Students' Academic Motivation and Autonomy.
74		Using YouTube Videos in Class To develop EFL Learners' Vocabulary A Case of First Year Students at M'sila University
75		The Perceptions of English as a Foreign Language (EFL) Teachers and Teacher Trainees at the High Training School for Teachers of Bouzareah about The Impact of Continuing Professional Development on Their Training.
76		Developing Writing Skills in Young Learners through Teachers' Perception and Reflection-The case of third year Middle schools- Msila
77		EFL learners' Misuse of The Semicolon and Comma in Paragraph Writing. Case of EFL Second Year Students at M'sila University
78		Perceptions on the Use of Authentic Materials for the Development of EFL Reading Comprehension: A case study of third year pupils and teachers of Dr. Ahmed Oroua Secondary School –Magra-
2021		
79		Enhancing EFL Learners' Grammar Competence through the Use of Authentic Materials: The Case of Second Year Students at the Department of English M'sila University
80		Investigating the impact of mother tongue on learners' achievement while learning English.
81		Authorial Stance in EFL Master Dissertations Discussions: A Corpus-Based Study. Case of Master Two Students at M'sila University
82		Exploring Linguistic Intelligence and Translation Mastery Relationships The case of second year EFL students at M'sila University
83		The impact of individual differences on EFL English language learning --The case of Second Year University of Msila
84		Investigating EFL Master Students' Hindrances in Writing their Dissertations. Case of master two EFL students at M'sila University
85		A close-up study to EFL Learners 'Examination Anxiety –the case of second year University of M'sila
86		EFL Learners' Beliefs about Distance Learning The case of Master One Students of English at The University of M'sila
87		Self-directed learning – an effective distance learning strategy during pandemic Covid 19. The case of Master 1 University of Msila
88		Exploring EFL Critical Readers' Implements-Strategies and FulfillmentThe Case of Master Students at M'sila University
89		Teachers' and Students' Perceptions and Practices towards Blended Learning. The Case study of Bentoumi Moussa Secondary School, Setif.
90	2021	EFL Teachers and Students Perceptions and Attitudes towards Virtual Teaching and Learning . The Case of Second Year License Students of English At Mohammed Boudiaf University
91		EFL TEACHERS' PERCEPTIONS REGARDING THE USE OF PORTFOLIO ASSESSMENT IN MIDDLE SCHOOL EFL CONTEXT: The Case of EFL Middle School Teachers at M'sila.
92		Exploring the Effects of Textese on EFL students' Quality Writing. A Case Study of Second-Year LMD Students of English at Mohamed Boudiaf University of M'sila
93		Teachers and Students Perceptions on the role of Pragmatics in improving EFL writing performance Case Study Mohamed Boudiaf University

94	Investigating EFL learners' beliefs about The use of academic writing strategies. Case study: third year students at the Department of English–M'sila University
95	The Impact of Online Teaching on Learners' Motivation The Case of Third-Year EFL Students at the University of Msila
96	Probing EFL Students and Teachers Perceptions of contrastive Rhetoric in the cross-cultural communication of E- mail writing (requestives). The case of teachers and Master 2 students of English at M'sila University
97	Probing the Effectiveness of E-Learning/Teaching during Covid-19 The Case of EFL Tutors and Students at the English Language Department of M'sila University, Algeria
98	The Impact of Using Social Networks on EFL Learners Speaking Skill. Case of Fifth year Students of English at Messaoud Zeghar Teacher Education College
99	Teachers' Perceptions on the Use of Literature in EFL Classes and its Effectiveness on Vocabulary Acquisition. The Case Study of Second Year License Students of EnglishAt Mohammed Boudiaf University
100	Investigating the impact of code switching on English writing performance Case study of 3rd year at secondary school "Foreign languages stream"
101	Teachers' Perceptions Towards L1 Use In EFL Classroom The case of Secondary School Teachers at M'sila
102	Exploring EFL Students' Attitudes and Perceptions towards Distance Learning of Productive Skills: The case of Third-year Students at the Department of English at M'sila University
103	Using Humor as an Effective Strategy to Reduce Anxiety In EFL Classes. The Case of Third year Middle School Pupils
104	Problematic Students' Behavior and its Effect on the EFL Learning Process -the case study of third year
105	Investigating Levels of Citizenship Values among EFL Students: The Case of Third Year Students at M'sila University
106	Students' Perspectives towards Cultural Representation in EFL Textbook Case of third-year students at Tamimi high school, M'sila
107	Investigating the Role of culture in fostering EFL Classroom cultural competence. The case of second-year University of Msila
108	Teachers and Students Perceptions on The Significance of Emotional Intelligence to Language achievement: The case of master one students of English at M'sila University
109	TEACHER'S PERCEPTION TOWARDS THE IMPORTANCE OF EXTROVERSION IN IMPROVING EFL LEARNER'S INTERLANGUAGE
110	Teachers' Use of Written Feedback in E-learning. Case of EFL Teachers at Mohammed Boudiaf, M'sila Univarsity
111	The Role of the Teachers' Oral Feedback onRaising EFL Learners' Interaction The Case Study of 3rd Year Pupils at HassaniAbdelkarim Middle School, BBA
2022	
112	Rewards as a Motivational Strategy for Enhancing EFL Learning: Case Study of First year at M'sila University
113	The effect of Note-taking Techniques on students' linguistic development Case study: first year license students at Mohamed Boudiaf , M'sila University
114	The Role of Discipline and its Impact on EFL Learners Learning Process.The Case of the First Year Students at University of M'sila
115	Investigating the Correlation between EFL Learners Levels of Emotional Intelligence and their Speaking Performance: The Case of Secondary School Pupils in Ouled Dahmane
116	THE PLACE OF PRAGMATICS-BASED INSTRUCTION IN SECONDARY SCHOOL EFL EDUCATION (THE CASE OF ALGERIAN SECONDARY SCHOOL TEACHERS)
117	INVESTIGATING EFL LEARNER'S COLLOCATIONAL COMPETENCE . CASE STUDY: MASTER ONE LINGUISTICS STUDENTS AT M'SILA UNIVERSITY.
118	Developing EFL Learners' speaking skill using ICTs (YouTube Videos) A Case of Third Year Students at M'sila University

119	2022	EFL Teachers' and Learners' Attitudes and Beliefs towards the Use of CALL in Teaching Listening and Speaking Skills. The Case of Third Year Students, University Of M'sila
120		The Use of Error Analysis to Assess EFL Learners' Writing Performance The Case of Third Year Pupils at Abdaoui Middle School (Ain el Hadjel / M'sila)
121		Enhancing EFL Learners' Vocabulary Learning Through The Use of Visual Aids The Case of First Year Pupils at Abderrahmane Kahouadji Middle School, Algiers
122		Exploring Teaching Writing Techniques Contributing to the enhancement of EFL students' writing performance. The case of third year secondary school students and teachers
123		The Use of Project Based Learning and Its Effects on Student's Critical Thinking The Case of EFL Third Year Students at MOHEMED BOUDIAF University department of English language
124		THE USE OF L1 IN L2 CLASSROOM AND ITS IMPACT ON LEARNING PROCESS
125		The Fear of stage -Causes and Effects- The case of First Year BA EFL Students University of M'sila
126		Investigating the Language Learning Strategies Employed by EFL Learners to Promote Learning Autonomy. The Case of: Third Year EFL students at M'sila University.
127		Investigating EFL Students' Realization Strategies Of, And Responses To, Disagreements. Case Of Master One EFL Learners At M'sila University.
128		Investigating EFL Teachers and Students' Attitudes and Perceptions towards Blended Learning of Writing Skill: The Case of Third-year students at The Department of English at M'sila University
129		Investigating Gender Differences in Pronunciation Performance Among EFL Learners. The Case of Third Year Students at the Department of English at M'sila University.
130		Investigating the factors that enhance EFL creative writing
131		Investigating Master One EFL learners' Oral Presentation and Its Impact on Peers
132		TEACHERS ATTITUDE TOWARDS ACCOMMODATING STUDENTS LEARNING STYLES CASE OF 2ND YEAR EFL STUDENTS AT MSILA UNIVERSITY
133		A Corpus- based Analysis of the use of Discourse Markers in Master Two (Linguistics) Dissertations
134		The Role of Foreign Language Learners' Self Esteem in Enhancing their Oral Performance The Case of First year students at M'sila University
135		EFL Learners' Perceptions and Practices towards the Use of Dictionaries Inside and Outside the Classroom The Case of Second Year EFL Students at Mohamed Boudiaf University of M'Sila
136		The Effect of Anxiety on EFL learners' Self Efficacy Writing Performance " The Case of Second Year Students at M'sila University"
137	The Impact of Using YouTube Videos And Audio Podcasts Imitation on EFL Learners' Oral Proficiency . The Case of Master One Linguistics Students At M'sila University	
138	The Impact of External and Internal Factors on EFL Learners' Handwriting Legibility The Case of First Year Pupils at Saad Ibn Ouakas Middle School (Ain el Khadra / M'sila)	

Appendix 2: List of the names of the gentlemen arbitrators:

N ⁰	Full Name	Speciality:	Affiliation :
1	Pr.Brakhlia A Ghani	Social Psychology	Department of Psychology. M'sila University
2	Pr. Saoudi Ahmed	Education Sciences	Department of Psychology.
3	Pr. Baali Mostafa	Clinical Psychology	M'sila University
4	Pr. Djellab Mosbah	Psychology of work and Organization	Department of Psychology.
5	Dr.Cheriet Imene	Linguistics	Department of English. M'sila University.
6	Dr. Hammodi Boubaker	Linguistics	Department of English. M'sila University.

Appendix 3: The used statistical methods analysis card

1-Data collection tools and their psychometric characteristics calculated (Validity and reliability).

1-	Study type	data collection tools	Validity		reliability	
			Yes	NO	Yes	No

Descriptive Statistics:

N ⁰	Statistical Methods	method used	appropriate	inappropriate	Observations
1	Frequency				
2	Persentage				
3	Mean				
4	Median				
5	Quartiles				
6	Standard deviation				
7	Torsion coefficient				
8	Flattening coefficient				
9	Correlation coefficient				
10	Simple regression				

2- Simple inferential statistics:

N ⁰	Statistical Methods	method used	appropriate	inappropriate	Observations
1	Z test				
2	T test				
3	Chi – square Test				
4	Kolomgrov- Smirnov test				
5	Sign Test				
6	Binomial test				
7	Mann - Whitney test (U)				
8	Wilcoxon test				
9	Fisher test LSD				
10	Dunnett test				
11	One-Way ANOVA				
12	Tukey's (HSD) test				
13	one-way (ANCOVA)				

14	partial correlation				
15	Kruskal – Wallis (H)				
16	Duncan test				
17	Scheffe test				

3- Advanced inferential statistics:

N ⁰	Statistical Methods	method used	appropriate	inappropriate	Observations
1	Factor Analysis				
2	Two Way ANOVA				
3	Three Way ANOVA				
4	Repeated measures ANOVA				
5	Two – way – ANCOVA				
6	MANCOVA (Multivariate Analysis of Covariance)				
7	Discriminant Analysis				

4- Sample size:

population size	Sample size	percentage	Result (appropriate, inappropriate)

2- sample selection method:

N ⁰	sample types	sample selection method	appropriate	inappropriate
1	Survey study			
2	Simple Random Sample			
3	Systematic Random Sample			
4	Stratified Random Sample			
5	Cluster Random Sample			
6	Nonrandom Sample			
7	Others			

Appendix 4: The used statistical methods analysis card:

1-Data collection tool used:

N ^o	Study type	data collection tools	Validity		reliability	
			Yes	NO	Yes	No
2018 (25 Dissertations)						
1	Experimental	- Test- Post Test -Questionnaire		x		x
2	mixed method	-Questionnaire		x		x
3	mixed method	-Questionnaire -interviews		x		x
4	descriptive research method	-Questionnaire -interview		x		x
5	descriptive method	-Questionnaire -interview -observation checklist		x		x
6	descriptive method	Questionnaires		x		x
7	Not indicated	Questionnaire		x		x
8	mixed method	-Questionnaire -interview -observation		x		x
9	mixed method	- Eysenck Personality Test - semi-structured interview		x		x
10	Not indicated	-Questionnaire -interview -observation -Test "pre-test and post-test"		x		x
11	descriptive method	-Questionnaire		x		x
12	Mixed Method	-Questionnaire -observation checklist		x		x
13	Not indicated	-Questionnaire -interview		x		x
14	descriptive method	-Questionnaire		x		x
15	mixed method	-Questionnaire --observation		x		x
16	descriptive method	-Questionnaire -interview		x		x
17	descriptive analytical method	-Questionnaire -interview - classroom observation		x		x
18	descriptive method	-Questionnaire		x		x
19	descriptive and experimental method	- classroom observation		x		x
20	descriptive method	-Questionnaire		x		x
21	mixed method	-Questionnaire		x		x
22	mixed method	-Questionnaire		x		x

		-interview - classroom observation				
23	descriptive method	-Questionnaire		x		x
24	Not indicated	-Questionnaire		x		x
25	descriptive method	-Questionnaire -interview		x		x
2019 (21 Dissertations)						
26	-descriptive method- experimental method	-Questionnaire -interview -Test "pre-test and post- test"		x		x
27	descriptive method	- Questionnaire - classroom observation		x		x
28	- descriptive method -experimental method	- Questionnaire -Pretest/ Post test/ Delayed test		x		x
29	- descriptive method	- Questionnaire - Classroom Observation		x		x
30	Not indicated	Special tests		x		x
31	Not indicated	- Questionnaire -interview		x		x
32	- descriptive method	- Questionnaire		x		x
33	- descriptive method experimental method	-Questionnaire -Test "pre-test and post- test"		x		x
34	- descriptive method	-Questionnaire -observation		x		x
35	Correlational Research	-Questionnaire		x		x
36	mixed method	-Questionnaires		x		x
37	- descriptive method	-Questionnaire		x		x
38	Not indicated	-Questionnaire		x		x
39	descriptive and analytic methods	-Questionnaire		x		x
40	mixed method	-Questionnaire -classroom observation - Checklist		x		x
41	- descriptive method	-Questionnaire -Interview		x		x
42	triangulation method	-Questionnaire -interview - classroom observation		x		x
43	descriptive exploratory method.	-Questionnaire -interview - classroom observation		x		x
44	- descriptive method	-Questionnaire		x		x
45	Mixed method	-Questionnaire -interview		x		x

46	Not indicated	-Interview - classroom observation		x		x
2020 (32 Dissertations)						
47	descriptive method	-Questionnaires		x		x
48	mixed method	-Questionnaire -interview -observation		x		x
49	mixed method	- Test (RCT) -Questionnaire	x		x	
50	Mixed method and (correlational and descriptive methods)	- Test (SSEIT) - ODCT -Questionnaire		x		x
51	descriptive method	-Questionnaires -Text Translating Test	x		x	
52	mixed method	-Questionnaire - DCT -interview	x		x	
53	descriptive method	- Questionnaire - Interview		x	x	
54	mixed method	-Questionnaire -classroom observation -written test		x		x
55	mixed method	-Questionnaire		x		x
56	-Correlational research	- written exam test -Questionnaire		x		x
57	- Correlational method	- Cultural intelligence scale (CQS) - Self- Report Questionnaire on Strategy Use (SRQSU)	x		x	
58	Exploratory Descriptive method,	-Questionnaire		x		x
59	descriptive method	- Questionnaire		x		x
60	descriptive method	- Questionnaire		x		x
61	- descriptive method - Content analysis	- Questionnaire		x		x
62	descriptive method	- Questionnaire		x		x
63	Mixed method	-Questionnaire - Test		x		x
64	descriptive method	- Questionnaire - .Oxford Practice Grammar Diagnostic Test (OPGDT)		x		x
65	Causal-comparative research	-Questionnaire - Interview		x		x
66	descriptive method	-Questionnaire - Interview		x		x
67	Mixed method	-Questionnaire		x		x

		- Interview				
68	Mixed method	-Questionnaire		x		x
69	descriptive method	-Questionnaire - Test - Observation Checklist	x		x	
70	Mixed method	-Questionnaire - Interview		x		x
71	Mixed method	-Questionnaire -interview - classroom observation		x		x
72	descriptive method	-Questionnaire		x		x
73	Quasi-experimental	- Academic Motivation test (AMT) - Learner Autonomy Test (LAT)	x		x	
74	descriptive method	-Questionnaire		x		x
75	descriptive method	-Questionnaire		x		x
76	Mixed method	-Questionnaire -Interview		x		x
77	Mixed method	-Questionnaire - Test		x		x
78	descriptive method	-Questionnaire -Interview		x		x
2021 (33 Dissertations)						
79	descriptive method	-Questionnaire - Interview		x		x
80	descriptive method	-Questionnaire		x		x
81	descriptive method	-Questionnaire		x		x
82	Mixed Method	- Linguistic Intelligence Test - Translation Test (Task)		x		x
83	descriptive method	-Questionnaire		x		x
84	descriptive method	-Questionnaire -Interview	x		x	
85	descriptive method	-Questionnaire		x		x
86	Mixed method	-Questionnaire		x		x
87	descriptive method	-Questionnaire		x		x
88	descriptive method	-Questionnaire		x		x
89	descriptive-interpretive method	-Questionnaire		x		x
90	descriptive method	-Questionnaire -Interview		x		x
91	descriptive method	-Questionnaire - -Interview		x		x
92	descriptive method	-Questionnaire		x		x
93	descriptive method	-Questionnaire		x		x
94	Mixed method	-Questionnaire		x		x
95	descriptive method	-Questionnaire		x		x

96	Mixed method	-Questionnaire - Interview - Text corpus analysis		x		x
97	descriptive method	-Questionnaire		x		x
98	descriptive method	-Questionnaire		x		x
99	descriptive method	-Questionnaire -Interview		x		x
100	Mixed method	- Interview - Content analysis		x		x
101	descriptive analytic method	-Questionnaire -Interview		x		x
102	Exploratory method	-Questionnaire		x		x
103	Quasi-experimental method	- 7-GAD Scale -Questionnaire - Observation		x		x
104	descriptive method	-Questionnaire		x		x
105	Mixed method	-Questionnaire - Interview - Citizenship Values Levels Scale		x	x	
106	descriptive method	-Questionnaire - Content Analysis		x		x
107	descriptive method	-Questionnaire		x		x
108	descriptive method	-Questionnaire -interview - Emotional Intelligence Test (EIT)		x		x
109	descriptive method	-interview				
110	descriptive method	-Questionnaire		x		x
111	descriptive method	-Questionnaire		x		x
2022 (27 Dissertations)						
112	descriptive method	-Questionnaire		x		x
113	descriptive method	-Questionnaire		x		x
114	descriptive method	-Questionnaire		x		x
115	Correlational method.	- EQ Test - The Speaking Performance Test		x		x
116	Mixed method	-Questionnaire		x		x
117	descriptive method	-Questionnaire		x		x
118	descriptive method	-Questionnaire		x		x
119	Mixed method	-Questionnaire -Interview		x	x	
120	descriptive method	-Questionnaire The writing Task		x		x
121	Quasi-experimental	Pre-Test - Post-Test		x		x
122	descriptive method	-Questionnaire		x		x
123	Mixed method	-Questionnaire		x		x

		-Interview				
124	descriptive method	-Questionnaire		x		x
125	Mixed method	-Questionnaire -Interview		x		x
126	descriptive method	-Questionnaire		x		x
127	Mixed method	-Discourse Completion Test (DCT) -Written discourse completion test (WDCT)		x		x
128	descriptive method	-Questionnaire		x		x
129	Causal comparative method	- Test		x		x
130	Mixed method	-Questionnaire		x		x
131	Exploratory method	-Questionnaire		x		x
132	descriptive method	-Questionnaire		x		x
133	descriptive method	-Corpus based study		x		x
134	Exploratory method	-Questionnaire -Interview		x		x
135	descriptive method	-Questionnaire		x		x
136	descriptive method	-Questionnaire		x		x
137	descriptive method	-Questionnaire		x		x
138	descriptive method	-Questionnaire - Classroom observation		x		x

2- Descriptive Statistics:

N ^o	Frequency	Percentage		Mean		Median		Quartiles		Standard deviation		Torsion coefficient		Flattening coefficient		Correlation coefficient		Simple regression		
		app	Inapp	ap	Inap	app	Inapp	ap	Inapp	ap	Inapp	ap	Inapp	ap	Inapp	ap	Inapp	ap	Inapp	
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3- Advanced inferential statistics:

Nº	Factor Analysis		Two Way ANOVA		Three Way ANOVA		Repeated measures ANOVA		Two – way – ANCOVA		MANCOVA (Multivariate Analysis of Covariance)		Discriminant Analysis	
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4- Sample size:

N ⁰	population size	Sample size	percentage	Result (Suitable, not Suitable)
2018 (25 Dissertations)				
1	NO mentioned	98	NO	We can not judge
2	NO mentioned	60	no	We can not judge
3	No(first year LMD of English)	30(Students) 10 (Teachers)	no	not Suitable
4	No first year EFL students	40(Students) 12 (Teachers)	36,4 18,2	Suitable
5	100	60(Pupils) 07 (Teachers)	60%	Suitable We can not judge
6	no	48(Pupils) 10 (Teachers)	no	We can not judge
7	no	20(Teachers)	no	We can not judge
8	no	50(Pupils)	no	We can not judge
9	147	100	no	Suitable
10	no	22(Pupils) 10 (Teachers)	no	We can not judge
11	120	40(Students) 05(Teachers)	33.33	Suitable We can not judge
12	250	60(Students) 13(Teachers)	24	Suitable We can not judge
13	167	50	29.94	Suitable
14	No	40(Students) 05(Teachers)	No	We can not judge
15	No	70(Students) 10(Teachers)	No	We can not judge
16	60 08	30(Students) 05(Teachers)	no	Suitable Suitable
17	148 no	44(Students) 07(Teachers)	30 no	Suitable We can not judge
18	No	40(Students)	No	We can not judge
19	No	38(Students) 02(Teachers)	no	We can not judge
20	No	60(Students) 30(Teachers)	no	We can not judge
21	No	40(Students)	no	We can not judge
22	148	44(Students) 06(Teachers)	30	Suitable We can not judge
23	No	60(Students) 06(Teachers)	no	We can not judge
24	no	60	no	We can not judge
25	No	60(Students) 08(Teachers)	No	We can not judge

2019 (21 Dissertations)				
26	No	52(Students) 04(Teachers)	No	We can not judge
27	282	30(Students)	NO	Suitable
28	110 no	28(Students) 10(Teachers)	no	Suitable
29	140 13	42(Students) 09(Teachers)	no	Suitable
30	no	50(Students)	no	We can not judge
31	no	45(Students)	no	We can not judge
32	182	44(Students) 06(Teachers)	no	Suitable
33	no	34(Students) 08(Teachers)	no	We can not judge
34	no	75(Students) 25(Teachers)	no	We can not judge
35	no	40(Students)	no	We can not judge
36	70	30(Students) 10(Teachers)	no	Suitable
37	118	30(Students)	no	Suitable
38	no	30(pupils)	no	We can not judge
39	140 30	25(Students) 10(Teachers)	18 33	not Suitable Suitable
40	no	61(Students) 11(Teachers)	no	We can not judge
41	120	30(Students) 04(Teachers)	no	Suitable
42	no	58(Students) 07(Teachers)	no	We can not judge
43	no	43(Students) 10(Teachers)	no	We can not judge
44	no	60(Students) 20(Teachers)	no	We can not judge
45	240	60(Students) 08(Teachers)	no	Suitable
46	442 42	34(Students) 06(Teachers)	no	not Suitable
2020 (32 Dissertations)				
47	no	25(Students) 40(Teachers)	no	We can not judge
48	120	35(Students) 06(Teachers)	no	Suitable
49	70	30(Students)	no	Suitable
50	144	30(Students) 06(Teachers)	no	Suitable
51	130 (Two specialities)	32(Students) 30(Students)	24.6% 23.7%	Suitable

52	150	35(Students) 05(Teachers)	no	Suitable
53	240	60(Students) 05(Teachers)	25%	Suitable
54	no	36(Students)	25%	Suitable
55	80	25(Students) 05(Teachers)	no	Suitable
56	105	52(Students)	no	Suitable
57	107	40(Students)	no	Suitable
58	72	30(Students)	no	Suitable
59	N0	52(Students)	no	We can not judge
60	238	50(Students) 03(Teachers)	no	Suitable
61	no	60(Students)	no	We can not judge
62	80	30(Students) 04(Teachers)	no	Suitable
63	100	55(Students)	no	Suitable
64	no	62(Students)	no	We can not judge
65	No	40(Students) 05(Teachers)	no	We can not judge
66	120 24	30(Students) 05(Teachers)	no	Suitable
67	no	60(Students) 04(Teachers)	no	We can not judge
68	120	48(Students) 10(Teachers)	no	Suitable
69	no	33(Students) 05(Teachers)	no	We can not judge
70	no	30(Students) 04(Teachers)	no	We can not judge
71	no	48(Students) 04(Teachers)	no	We can not judge
72	240	60(Students) 05(Teachers)	no	Suitable
73	no	30(Students)	no	Suitable
74	240	60(Students)	no	Suitable
75	140	80(Students) 12(Teachers)	no	Suitable
76	120	40(Students) 18(Teachers)	33.33%	Suitable
77	no	66(Students) 10(Teachers)	no	We can not judge
78	no	30(Students) 07(Teachers)	no	We can not judge
2021 (33 Dissertations)				
79	137	31(Students) 05(Teachers)	no	Suitable

80	no	45(Students) 06(Teachers)	no	We can not judge
81	no	15(Students) 15(Teachers)	no	We can not judge
82	195	41(Students)	no	Suitable
83	no	27(Students) 10(Teachers)	no	We can not judge
84	70	31(Students) 09(Teachers)	no	Suitable
85	96 25	36(Students) 11(Teachers)	24%	Suitable
86	no	20(Students)	no	We can not judge
87	no	25(Students) 20(Teachers)	no	We can not judge
88	no	20(Students) 10(Teachers)	no	We can not judge
89	no	25(Students) 05(Teachers)	no	We can not judge
90	190	46(Students) 07(Teachers)	no	We can not judge
91	no	50(Teachers)	no	We can not judge
92	96	21(Students) 10(Teachers)	20.16%	Suitable
93	no	48(Students) 13(Teachers)	no	We can not judge
94	no	60(Students)	no	We can not judge
95	no	25(Students) 07(Teachers)	no	We can not judge
96	70	40(Students) 07(Teachers)	no	Suitable
97	no	57(Students) 12(Teachers)	no	We can not judge
98	no	17(Students)	no	We can not judge
99	no	52(Students) 09(Teachers)	no	We can not judge
100	no	40(Students) 10(Teachers)	no	We can not judge
101	no	40(Teachers)	no	We can not judge
102	no	60(Students) 06(Teachers)	no	We can not judge
103	no	14(Students) 06(Teachers)	no	We can not judge
104	no	22(Students) 10(Teachers)	no	We can not judge
105	130	49(Students) 19(Teachers)	no	Suitable
106	280	70(Students)	no	Suitable
107	96	27(Students)	25.92%	Suitable

		11(Teachers)		
108	70	30(Students) 07(Teachers)	no	Suitable
109	40	15(Teachers)	no	Suitable
110	no	24(Teachers)	no	We can not judge
111	80	40(Students)	no	Suitable
2022 (27 Dissertations)				
112	300	35(Students) 10(Teachers)	No	Suitable
113	190	68(Students)	No	Suitable
114	No	64(Students)	No	We can not judge
115	No	30(Students)	No	We can not judge
116	no	70(Teachers)	no	We can not judge
117	No	35(Students)	No	We can not judge
118	No	39(Students) 10(Teachers)	No	We can not judge
119	140 11	57(Students) 05(Teachers)	No	Suitable
120	No	30(Students) 35(Teachers)	No	We can not judge
121	No	40(Students)	No	We can not judge
122	No	70(Students) 20(Teachers)	No	We can not judge
123	No	46(Students) 06(Teachers)	No	We can not judge
124	No	07(Teachers)	No	We can not judge
125	305	70(Students) 09(Teachers)	No	Suitable
126	No	60(Students)	No	We can not judge
127	206	34(Students) 04(Teachers)	No	Suitable
128	No	60(Students) 03(Teachers)	No	We can not judge
129	No	40(Students)	No	We can not judge
130	No	20(Students)	No	We can not judge
131	120	41(Students)	40%	Suitable
132	No	33(Students) 11(Teachers)	No	We can not judge
133	116	30(Dissertations)	NO	Suitable
134	500	40(Students) 04(Teachers)	No	Not Suitable
135	220	86(Students)	NO	Suitable
136	NO	54(Students)	50%	Suitable
137	128	71(Students)	no	Suitable
138	272	27(Students) 13(Teachers)	no	Suitable

5- sample selection method:

N ^o	Survey study		Simple Random Sample		Systematic Random Sample		Stratified Random Sample		Cluster Random Sample		Nonrandom Sample		Not indicated for the way of selecting
	app	Inapp	app	Inapp	app	Inapp	app	Inapp	app	Inapp	app	Inapp	
2018 (25 Dissertations)													
1			X										
2			X										
3			X										
4			X										
5													X
6													X
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8			X										
9			X										
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11			X										
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13			X										
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17			X										
18													X
19													X
20			X										
21			X										
22			X										
23													X
24													X
25													X
2019 (21 Dissertations)													
26			X										
27			X										
28			X										
29			X										
30			X										

31													X	
32			X											
33			X											
34			X											
35			X											
36			X											
37			X											
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40			X											
41														X
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43			X											
44			X											
45			X											
46			X											
2020 (32 Dissertations)														
47			X											
48			X											
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66			X											
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71												X	
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76												X	
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78												X	
2021 (33 Dissertations)													
79			X										
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102			X										
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104			X										
105			X										
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107			X										
108			X										
109												X	
110												X	
111												X	
2022 (27 Dissertations)													
112			X										
113												X	
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115			X										
116			X										
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134			X										
135			X										
136			X										
137			X										
138												X	

الملخص: تناولت الدراسة الحالية تقييم الأدوات والتقنيات الإحصائية التي يستخدمها طلاب اللغويات في تحليل بيانات مذكرات الماجستير بقسم اللغة الانجليزية، بجامعة المسيلة. مع تحديد مدى ملائمة الأدوات الإحصائية لمواضيع تلك المذكرات التي أجريت. الدراسة كانت مسحية لجميع مذكرات طلبة الماجستير تخصص لغويات، والتي كانت من: 2018 الى غاية: 2022، واعتمدت الدراسة تحليل المحتوى الاستنتاجي لجميع الأطروحات المتوفرة بالمستودع المؤسسي لجامعة محمد بوضياف بالمسيلة، حيث تكونت من 138 مذكرة، تم تقييمها وفقاً لنوع الأدوات الإحصائية المستخدمة في تحليل البيانات لتقييم الأداة الإحصائية الأكثر انتشاراً في تحليل بيانات المذكرات ومدى ملائمة هذه الأدوات وفقاً لمعايير الاستخدام. كما تم استخدام التكرارات والنسب المئوية لتحليل البيانات.

أوضحت النتائج أن المنهج الأكثر شيوعاً التي يستخدمها الطلاب هو المنهج الوصفي، وأن الاستبيان هو أكثر أدوات جمع البيانات استخداماً، مقارنة بالمقابلة والملاحظة والاختبار. كما وجدت الدراسة أن معظم الطلبة لم يتحققوا من صحة وموثوقية أدوات جمع البيانات.

كشفت النتائج أيضاً أن تركيز الطلبة كان حول استخدام كل من التكرارات والنسب المئوية كأدوات إحصائية. وبنسبة قليلة تم استخدام المتوسط ومعامل الارتباط. أشارت نتائج الدراسة أيضاً إلى أن المقاييس الإحصائية الاستنتاجية المتقدمة (التحليل العاملي، ANOVA (تحليل التباين أحادي الاتجاه، ثنائي الاتجاه وثلاثي الاتجاه)، ANCOVA، M ANCOVA، التحليل التمييزي) لم يتم استخدامها في جميع الأطروحات خلال جميع السنوات، من 2018 إلى 2022. كما أشارت نتائج الدراسة إلى أن الطلبة يرتكبون العديد من الأخطاء عند حساب حجم العينة، فهناك نسبة كبيرة من الطلبة لم يستخدموا حجم عينة مناسب، سواء يمثل المجتمع أم لم يحدد حجم المجتمع. وأوصت الدراسة بضرورة إيلاء أهمية كبيرة للإحصاء كوحدة تعليمية مهمة في أبحاث الطلبة، وتدريب الطلبة على كيفية استخدام الأدوات الإحصائية المناسبة بطريقة مناسبة وفعالة.