

The problems faced by students approaching graduation related to statistics, measurement, and the use of tests in preparing their theses.

(Field study at the Department of Psychology, University of Mohamed El Bachir El IBrahimi Bordj Bou Arreridj, Algeria)

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Abstract: The current study aimed to identify the most significant problems faced by university students related to statistics, measurement, and the use of tests in preparing their graduation theses. Using the descriptive method, and by applying the "University Student Problems Related to Statistics, Measurement, and the Use of Tests in Thesis Preparation" questionnaire — developed by the researcher — to a sample of (156) graduating students (Bachelor's and Master's levels) majoring in School Psychology and Work and Organizational Psychology at the Department of Psychology, Mohamed El Bachir El Ibrahim University, Bordj Bou Arréridj, Algeria, during the 2024–2025 academic year, the results revealed the following:

- The problems faced by graduating students related to statistics, measurement, and the use of tests in preparing their theses were found to be highly prevalent, with a percentage of (81,93 %).

- There were statistically significant differences in the perspectives of Bachelor's and Master's students regarding the problems related to statistics, measurement, and the use of tests in thesis preparation.

- There were no statistically significant differences in the perspectives of students majoring in Psychology and Physical Education regarding the problems related to statistics, measurement, and the use of tests in thesis preparation.

Keywords: Thesis preparation problems (related to statistics, measurement, and the use of tests); university students.

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1. Introduction:

The university is considered the primary institution responsible for preparing the competencies necessary for the development and advancement of societies. In fulfilling this mission, it relies on academic curricula across various fields such as literature, science, medicine, engineering, and others. These academic plans vary in their structure; some universities base their curricula on purely specialized courses, others emphasize practical field internships, while some adopt the system of thesis writing as a means of training students in scientific research.

Scientific research is considered one of the most important functions of the university, ranking second only to academic teaching in terms of significance. It also serves as a key indicator of a university's intellectual and scientific value, given its leading role in society and national advancement. The degree of a country's progress and its integration into the modern world is often measured by its investment in scientific research—reflected in the percentage of GDP allocated to research, the number of scientists and researchers per thousand inhabitants, the volume of published scientific papers, and the number of inventions. On an individual level, this is also evident in the amount spent on purchasing books and scientific journals.

1.1. Research Problem:

Scientific research has witnessed significant growth in modern life, bringing about remarkable transformations in human living patterns—both at the family and societal levels—through its achievements and innovations. It continues to hold a positive reputation across most human societies due to its wide-ranging purposes, which some scholars have summarized as: inventing the unknown, collecting the dispersed, completing the incomplete, detailing the general, refining the extensive, organizing the disordered, specifying the ambiguous, and correcting the mistaken (El-Assaf, 1995, p. 10).

Institutions dedicated to scientific research, such as universities and ministries or research centers, have emerged to support its development. This prosperity has extended across various fields, including medicine, engineering, astronomy, natural sciences, applied sciences, literature, and education. As a result, scientific research has become a central concern for universities of all disciplines. Training students in research has become one of the university's fundamental roles, alongside teaching and community service.

In this context, Algerian universities emphasize concluding academic programs with a graduation thesis, which serves as an applied benchmark for students to implement their theoretical knowledge in the field of scientific research. However, many students encounter significant challenges in completing these theses, despite the abundance of methodological literature available in libraries. This may be due to the fact that most of these books and references address scientific research from a purely theoretical perspective. They offer detailed chapters on research methods but often fail to guide students on how to practically apply these methods, how to collect data accurately, or how to verify its reliability. They discuss research problems, hypotheses, and planning without providing practical application (Es-Seirafi, 2002).

On the other hand, scientific research procedures require students to provide a complete, accurate, and operational description of the tools used for data collection—such as interviews and observations—which must be standardized and scientifically valid to be considered reliable instruments (Bouhouche & Al-Dhneibat, 2007, p. 75). Additionally,

researchers must describe the statistical methods used to analyze the data, justifying their selection. One of the key features of the scientific method is “reliance on precise measurement tools and statistical processing of data and information” (Mohrik, 1996, p. 34).

Many believe that the methodologies applied in the social and human sciences lack the precision found in the natural sciences. This is due to a number of challenges, including the difficulty of experimental control, the inability to isolate overlapping variables in social and human phenomena, and the challenge of accurately measuring such phenomena due to the occasional lack of precise measurement tools (Ben Seghir, 2013, p. 32).

In light of this, the present study seeks to identify the most significant problems faced by students approaching graduation in the areas of measurement and the use of tests, particularly within psychological and educational research. This objective is pursued by addressing the following research questions:

- To what extent do graduating students face problems related to statistics, measurement, and the use of tests while preparing their graduation theses?
- Are there statistically significant differences in students' perspectives regarding problems related to statistics, measurement, and the use of tests based on the variable of academic level (Bachelor's/Master's)?
- Are there statistically significant differences in students' perspectives regarding problems related to statistics, measurement, and the use of tests based on the variable of specialization (School Psychology / Work and Organizational Psychology)?

1.2. Research Hypotheses:

A hypothesis is considered a provisional solution that is tested through the steps of the scientific method. Accordingly, the hypotheses of this study were formulated as follows:

- There is a high degree of problems faced by students related to statistics, measurement, and the use of tests while preparing their graduation theses, from their own perspectives.
- There are statistically significant differences in students' perspectives regarding problems related to statistics, measurement, and the use of tests based on the academic level variable (Bachelor's/Master's).
- There are statistically significant differences in students' perspectives regarding problems related to statistics, measurement, and the use of tests based on the specialization variable (School Psychology / Work and Organizational Psychology).

1.3. Research Objectives:

This study aims to answer the proposed research questions, verify the validity of the hypotheses, and identify the main research difficulties faced by students approaching graduation in the field of measurement. It also seeks to examine the differences in the average levels of these research-related difficulties among the study sample, in light of two variables: academic level (Bachelor's/Master's) and field of specialization (School Psychology / Work and Organizational Psychology).

1.4. Significance of the Research:

The significance of this study stems from the importance of the topic it addresses—conducting scientific research—particularly at a time when universities worldwide are striving to enhance the quality of scientific research. The findings of this study may provide those responsible for scientific research in Algerian universities with practical insights into the major difficulties students face when conducting various types of research, especially in the field of measurement.

Moreover, the study may open the door for researchers and decision-makers to reconsider how the fundamentals of scientific research are taught during academic training, particularly at the postgraduate level. This could contribute to improving the competence of Algerian university graduates, especially in their ability to effectively use data collection tools, perform statistical analyses, interpret findings, and evaluate the generalizability of results—which is the ultimate aim of scientific research. Ultimately, this can lead to greater knowledge advancement and development.

1.5. Research Terminology:

.1. Operational Definitions of Key Terms:

Research Problems: In the context of this study, this term refers to the difficulties encountered by university students approaching graduation in the areas of statistics, measurement, and the use of tests. These difficulties are quantified by the score obtained by each student on the questionnaire used in the study.

University Students: In this study, this term refers to students from the Faculty of Humanities and Social Sciences, Department of Psychology, at Mohamed El Bachir El Ibrahimi University in Bordj Bou Arréridj, who are in the process of graduating at the end of the 2024–2025 academic year. Specifically, it includes students currently enrolled in the third year of the Bachelor's program and the second year of the Master's program in the specializations of School Psychology and Work and Organizational Psychology.

.2. Definition of Scientific Research:

Scientific research varies in its purposes, which has led to multiple definitions. However, the general agreement on the main steps involved in conducting research has made these definitions revolve around a set of common elements. Accordingly, scientific research can be defined as "a set of organized steps undertaken by a person using the scientific method and its principles in their quest to increase control over their environment, discover its phenomena, and identify the relationships between these phenomena" (El-Assiri, 2012, p. 5).

.3. Types of Social Research:

Scientific research in general, and social research in particular, takes several forms, which can be summarized as follows:

.3.1. Theoretical or Academic Research: This type aims to develop fundamental knowledge available across various scientific fields and human knowledge by conceptualizing social phenomena. The university education system is the primary source of this type of research. However, such research is often not utilized to address existing social problems, possibly due to the weakness of scientific studies prepared as theses or dissertations within the university (Ben Hindi, 2011, p. 2).

.3.2. Applied or Scientific Research: This type aims to address existing problems faced by an institution, whether social, economic, or otherwise. Researchers conducting this type of study seek to identify the problems within the institution under investigation and verify the accuracy and validity of their causes in the field by "following a scientific methodology with sequential steps to reach a set of relatively actual causes that led to the occurrence of these problems, and to propose a set of recommendations" (El-Assiri, 2012, p. 10).

.4. Difficulties of Social Research:

This type of research is influenced by the complexity of the phenomena it addresses, the difficulty of experimental control, and the challenge of isolating overlapping variables. As a result, researchers in this field face a number of obstacles and challenges, the most important of which are:

.4.1. Ethical Considerations: Social research involves human subjects, and therefore the researcher is "ethically obligated to respect the rights and interests of the individuals participating in the study" (Abou Allam, 2004, p. 36).

.4.2. Instability and Complexity of the Study Population: The community under study is often unstable and its problems complex.

.4.3. Questionable Reliability of Existing Research: Some studies are based on questionable or unreliable foundations, which may undermine the results of other research that relies on them.

.4.4. Lack of Training in Social Research: Many practitioners in this field lack sufficient experience and knowledge of the skills required for this type of research. Morsi (1986) notes that the limited university courses offered do not adequately equip students with the fundamentals and principles of research (Ben Seghir, 2013, p. 11).

.4.5. Difficulty of Measurement: Social research involves measuring many variables such as human traits, thinking, problem-solving, achievement, intelligence, and interaction. Measuring these and other variables requires building instruments that are both valid and reliable. Conducting research without good measurement tools is not feasible (Abou Allam, 2004, p. 37).

Stevens defines measurement as "the tool used to observe behavioral phenomena in an operational manner."

Meanwhile, Eddossari defines it as "the processes that involve assigning or using numbers according to a specific system in order to quantitatively assess a particular trait or variable."

.5. Factors Affecting Measurement in the Social Sciences:

Measurement in the social sciences is influenced by various factors. El-Kabissi (2007), as cited in (El-Amir, 2010, p. 13), identified several of these factors, including:

- The nature of the trait or characteristic being measured. Some traits can be measured directly, while others require indirect methods.
- The purpose of the measurement.
- The experience of the person conducting the measurement.
- The precision of the measurement instrument used.

In addition to these difficulties and challenges, there is the issue of limited financial allocations for research in the Arab world. Harb (1999) reported that spending on scientific research does not exceed (0,116 %) of the total income of Arab countries. As a result, the number of research studies conducted across the entire Arab world is reportedly fewer than those carried out by Harvard University alone (Ben Seghir, 2013, p. 12).

- Factors affecting measurement in the social sciences:

The measurement is affected by various factors, including Al-Kubaisi 2007 mentioned the following (Al-Amir, 1432 AH, 13): the nature of the attribute or characteristic to be measured, there is what can be measured directly while others are measured indirectly.

- The objective of the measurement.
- The experience of the measurer.

- The accuracy of the instrument used in the measurement.

Hareb (1999) **states** that the percentage of spending on scientific research does not exceed (0.116%) of the income of Arab countries, which led to the fact that the number of research conducted in the Arab world as a whole is less than that conducted at Harvard University alone (**Ben Saghir, 2013, 12**).

2- Method and Tools:

2.1. Scope of the Study: The fieldwork for this study was conducted on a sample of students from the Faculty of Humanities and Social Sciences, Department of Psychology, at **Mohamed El Bachir El Ibrahimi University**, Bordj Bou Arréridj, during the second semester of the 2024/2025 academic year.

2.2. Research method: The nature of the topic determines the appropriate research method. Accordingly, the **descriptive method** was selected as the most suitable approach for this study.

2.3. Study Population and Sample: Given the nature of the topic and the target population, the study adopted a **random sampling technique**, as it was believed to best serve the objectives of the research. Based on the defined scope, the sample included students from the Faculty of Humanities and Social Sciences, Department of Psychology, at Mohamed El Bachir El Ibrahimi University – specifically, those who are expected to graduate at the end of the 2024/2025 academic year. These students were in their third year of the Bachelor's program and the second year of the Master's program.

The total number of students was (74) (male and female). Out of this number, (12) students were randomly selected and excluded for the purpose of **validity and reliability testing**, leaving a final core study sample of (62) students.

- **Sample Characteristics:** The characteristics of the study sample are presented in Tables (01 and 02).

Table (01): Distribution of the Sample According to Field of Specialization.

Variable		Number of Students	Ratio	Excluded	Basic studysample
Specialization	school psychology	38	51,35 %	6	32
	work and organization psychology	36	48,65 %	6	30
	Total	74	100 %	12	62

Source: Prepared by the researcher

Table (02): Distribution of the Sample According to Academic Level.

Variable		Number of Students	Ratio	Excluded	Basic studysample
Level	Thirdyearlicence	40	54,05 %	6	34
	Second year Master	34	45,95 %	6	28
	Total	74	100 %	12	12

Source: Prepared by the researcher

2.4. Data Collection Instrument:

To collect the data for this study, a **questionnaire** was used, specifically designed to assess the **problems faced by university students related to statistics, measurement, and the use of tests in the preparation of their graduation theses**. The questionnaire comprised **20 items**.

The researcher developed this tool by following the methodological procedures for constructing a questionnaire. This included conducting a **conceptual analysis** of the study's hypotheses, identifying the required information, and reviewing the relevant theoretical literature in areas such as students' training in statistics, research methodology, psychometric

measurement, and common difficulties encountered in preparing graduation theses related to **statistics, measurement, and test use**.

The type of questionnaire, the nature of the intended data analysis, and the characteristics of the target population were also considered. Additionally, the researcher consulted a range of existing instruments, such as:

- **Ben Abdelkarim Al-Maghribi's (2012) questionnaire**, designed to identify the difficulties students face in conducting field research. It covers problems related to research tools, support from academic staff, and issues with statistics, measurement, and data collection instruments.
- **Asiri's (2012) questionnaire**, which explores scientific research difficulties (methodological/statistical) faced by postgraduate students at the College of Education, Umm Al-Qura University. It includes issues related to research design, control over procedures and tools, statistical problems, and result interpretation.
- **Akil's (2005) questionnaire**, which investigates the challenges faced by postgraduate students at the Islamic University and strategies for overcoming them.

Based on these models, an **initial version** of the current study's questionnaire was drafted and then submitted for **expert review** by seven specialists:

- Three professors from the Department of Psychology, University of M'sila (Mohamed Boudhief),
- Two professors from the Department of Social Sciences, Mohamed El Bachir El Ibrahimi University in Bordj Bou Arréridj,
- One professor from the Department of Psychology, University of Algiers 2,
- One professor from the Department of Educational Sciences, Hamma Lakhdar University, El Oued.

This review process resulted in the **deletion, modification, or rephrasing of several items**. The revised version was then **piloted** on a group of **12 students** (third-year Bachelor's and second-year Master's students in the Department of Psychology) to evaluate the **psychometric properties** of the instrument.

The final version of the questionnaire consisted of **two parts**:

- **Part One**: General demographic information, including faculty, department, field of specialization, gender, and academic level.
- **Part Two**: Twenty items reflecting the **reality of problems faced by students** in using statistics, measurement, and tests in their graduation research.

Five response options were provided to reflect the **severity of the problem**, as follows:

- a. Strongly Present** – Indicates a very high level of difficulty that the student cannot overcome.
- b. Present** – Indicates a significant problem that the student can overcome with assistance.
- c. Somewhat Present** – Indicates a moderate issue the student can manage independently.
- d. Not Present** – Indicates a minor issue that does not prevent the student from completing the thesis while meeting academic standards.
- e. Strongly Not Present** – Indicates that no problem exists at all.

For scoring purposes, responses were assigned **Likert-scale values** ranging from **1 to 5**, in line with the severity of the problem as perceived by the student.

.1. Questionnaire Validity:

.1.1. Expert Validity (Content Validity by Judges): The formula used to calculate expert validity was: **Validity = (Number of Agreements ÷ Number of Judges) × 100**

Applying this formula to the judgment data yielded a validity rate of (69.66 %), which is considered high and acceptable.

.1.2. Internal Consistency Validity: This was assessed by examining the correlation between each item and the total questionnaire score, as presented in **Table (03)**.

Table (03): Correlation Coefficients Between Each Item and the Total Questionnaire Score.

Item Number	Phrases	Correlation coefficient
1	Weakness in using appropriate statistical methods.	** 0,711
2	Lack of supervisor's assistance to students in the statistical aspects of the thesis.	** 0,683
3	Weak critical thinking skills among graduating students.	**0,780
4	Poor mastery of research methodologies in the sciences.	** 0,761
5	Absence of a model or printed guide explaining the nature and requirements of the graduation thesis within university institutions.	** 0,703
6	Lack of experience in analyzing and interpreting results.	**0,640
7	Weakness in selecting the appropriate tool for data collection.	** 0,721
8	Lack of effective follow-up by the supervisor throughout the stages of thesis completion.	** 0,563
9	Insufficient student experience in conducting field research.	*0,490
10	Poor understanding of the characteristics of quality research.	** 0,731
11	Limited creative abilities among graduating students.	** 0,701
12	Lack of logical reasoning skills among students.	*0,42
13	Unavailability of supervisors with sufficient knowledge in statistics and psychometrics.	** 0,689
14	Lack of experience among graduating students in formulating statistical hypotheses.	** 0,655
15	Limited expertise in constructing data collection tools.	**0,599
16	Inability to relate research findings to previous studies.	** 0,710
17	Frequent absence of the supervisor from meetings with students.	** 0,706
18	Significant discrepancies among references on research methodology and psychometrics.	**0,580
19	Insufficient knowledge in verifying the psychometric properties of data collection tools.	** 0,666
20	Weak understanding of the relationship between the formulation of research hypotheses and the statistical methods required to test them.	**0,684

(**) Correlation coefficient D at significance level (0.01), (*) Correlation coefficient D at significance level (0.05).

Source: Prepared by the researcher

It can thus be concluded that the questionnaire items are valid and truly measure what they were designed to measure.

.2. Questionnaire Reliability:

.2.1. Cronbach's Alpha Reliability Coefficient: The reliability was estimated at (0,72), which is a high and significant reliability coefficient.

.2.2. Reliability Coefficients (Split-half and Gutman): Estimated respectively at (0,67) and (0,74), both of which are significant reliability coefficients.

2.5. Statistical Methods:

This study relied on the use of the (T-test) for two independent samples, percentages, and frequency counts during data analysis.

3- Results and Discussion

3.1. Presentation, Analysis, and Discussion of the First Hypothesis Results:

The hypothesis stated that there are significant problems faced by students related to statistics, measurement, and the use of tests during the preparation of their graduation theses from their point of view. To verify the validity of this hypothesis, based on the questionnaire data, after processing the responses and calculating frequencies and percentages for each item, the results shown in Table No. (04) were reached:

Table No. (04): Percentages of the extent of problems faced by students related to statistics, measurement, and the use of tests during the preparation of their graduation theses in the questionnaire.

Item No.	Undergraduate Students' Problems Related to Statistics, Measurement, and the Tests Used in Preparing the Graduation Thesis											Total occurrence s of the line	Total ratio s Each item 100 %
	There is strongly		There is		There is to some extent		There isn't any		Strongly none				
	Iteration n	Rate %	Iteration n	Rate %	Iteration n	Rate %	Iteration n	Rate %	Iteration n	Rate %			
1	9	14,5	22	35,5	15	24,2	16	25,8	0	0	62	100 %	
2	42	67,7	16	25,8	4	6,5	0	0	0	0	62	100 %	
3	14	22,6	36	58,1	12	19,4	0	0	0	0	62	100 %	
4	8	12,9	13	21	11	17,7	30	48,4	0	0	62	100 %	
5	0	0	7	11,3	16	25,8	34	54,8	5	8,1	62	100 %	
6	4	6,5	41	66,1	6	9,7	11	17,7	0	0	62	100 %	
7	17	27,4	25	40,3	5	8,1	15	24,2	0	0	62	100 %	
8	24	38,7	19	30,6	10	16,1	9	14,5	0	0	62	100 %	
9	22	35,5	36	58,1	4	6,5	0	0	0	0	62	100 %	
10	10	16,1	47	75,8	4	6,5	1	1,6	0	0	62	100 %	
11	15	24,2	32	51,6	7	11,3	8	12,9	0	0	62	100 %	
12	0	0	17	27,4	16	25,8	29	46,8	0	0	62	100 %	
13	11	17,7	31	50	9	14,5	11	17,7	0	0	62	100 %	
14	29	46,8	21	33,9	1	1,6	11	17,7	0	0	62	100 %	
15	16	25,8	37	59,7	1	1,6	8	12,9	0	0	62	100 %	
16	15	24,2	39	62,9	8	12,9	0	0	0	0	62	100 %	
17	25	40,3	19	30,6	12	19,4	1	1,6	5	8,1	62	100 %	
18	3	4,8	5	8,1	22	35,5	17	27,4	15	24,2	62	100 %	
19	0	0	21	33,9	39	62,9	2	3,2	0	0	62	100 %	
20	5	8,1	15	24,2	18	29	24	38,7	0	0	62	100 %	
sum	269	21,69 %	499	40,24 %	220	17,74 %	227	18,3 %	25	2,0 %	1240	100 %	

Source: Prepared by the researcher

The results in Table No. (04) show that the perspective of the study sample regarding the existence of problems faced by students related to statistics, measurement, and the use of tests during the preparation of their graduation theses was that most of the responses were in the alternative answer (Yes), which recorded the highest percentage and frequency in this option. This suggests the presence of a significant problem that the student cannot overcome without assistance. The total frequency for this alternative was (499), and the total percentage was (40,24 %). Based on this alternative, the highest percentages were recorded in the following items: (01, 03, 06, 07, 09, 10, 11, 12, 13, 15). It is noticeable that the percentages indicating the existence of problems during the preparation of their graduation theses are high and widespread among students, which aligns with the reality.

Meanwhile, the responses of the sample members in items (02, 08, 14, 17) indicated that the problems students face related to statistics, measurement, and the use of tests during their graduation thesis preparation (exist strongly). Responses towards this alternative came second in rank, with a total frequency of (269), and a total percentage of (21,69 %). This alternative indicates the presence of a highly significant problem that the student cannot overcome. This was clearly observed during the application with bachelor's students. According to this alternative, responses in items (05, 12, 17) showed no problems at all for students in both specializations and levels, with percentages of (00 %), which was particularly evident among master's level students.

Responses to the alternative (No) came in third place, indicating that the problems exist to a weak extent, and that students can prepare their thesis while adhering to the standards, conditions, and deadlines and are able to manage them. This was recorded in the

following items: (04, 05, 12, 20), with a total frequency of (227) and a total percentage of (18,30 %).

Responses to the alternative (To some extent) came fourth, indicating that the problems exist to a moderate extent, and that students can overcome them by broadening their knowledge and research. This was recorded in items (18, 19), with a total frequency of (220) and a total percentage of (17,74 %). It is noticeable that the alternatives (To some extent) and (No) have very similar percentages and frequencies, which indicates that a large portion of the study sample shares similar views about the problems students face related to statistics, measurement, and the use of tests during the preparation of their graduation theses at a moderate level.

Responses to the alternative (Not at all) came last, indicating that the problem does not exist at all, with a total frequency of (25) and a total percentage of (2,01 %), which is a very low percentage. According to this alternative, no responses were recorded in the two specializations and levels in any of the questionnaire items, except for item (05), which shows that the study sample acknowledges the existence of the problems being studied. This confirms the validity of the responses from the sample members for the alternatives (Yes) and (Yes, strongly), which were estimated at (40,24 %) for the "Yes" option and (21,69 %) for the "Yes, strongly" option.

Thus, it can be concluded that the perspective of the study sample regarding the problems they face during the preparation of their graduation theses related to statistics, measurement, and the use of tests is that these problems exist to a significant degree, with a percentage of (81,93 %). Therefore, the first hypothesis is confirmed.

3.2. Presentation, Analysis, and Discussion of the Second Hypothesis Results:

The second hypothesis stated that there are statistically significant differences in students' perspectives on problems related to statistics, measurement, and the use of tests depending on the academic level (Bachelor's/Master's). To verify the validity of this hypothesis, an independent samples **T-test** was used. The results are as shown in Table No. (05):

Table No. (05): T-value for the significance of the differences in students' perspectives on problems related to statistics, measurement, and the use of tests based on the academic level variable (Bachelor's/Master's).

variable	level of study	Sample "N"	Arithmetic mean	Standard deviation	"T" test	Scheduled "T"	Degree of freedom	Sig Value	Resolution
Problems	Master	28	70,61	7,69	2,97	1,67	60	0,016	Function**
	licence	34	63,06	18,96					

Source: Prepared by the researcher

The results in Table No. (05) show that the calculated T-value (2,97) is greater than the tabulated value (1,67), with 60 degrees of freedom and a significance level of (0,05). This indicates that there are significant differences between the mean scores of Master's students (70,61) and Bachelor's students (63,06) regarding problems related to statistics, measurement, and the use of tests during the preparation of their graduation theses. In other words, higher-level students tend to report facing these problems to a greater extent.

This result contrasts with the findings of El-Assiri's (2012) study, which was conducted on graduate students at the Master's and Doctoral levels. El-Assiri found that such problems are more pronounced among Master's students, as reported by the students themselves. The difference in the results can be explained by the fact that the current study's

sample includes students at both the Bachelor's and Master's levels, which are pre-graduation stages, whereas El-Assiri's study targeted postgraduate students. Each system has its own set of courses and teaching methodology. Several studies, including Turkistani's (2001), confirm this relationship. Turkistani found that the most significant general issues with scientific research in Saudi universities were related to "weak educational programs associated with scientific research" (El-Assiri, 2012, p. 16).

From this, we conclude: There are statistically significant differences between the perspectives of Bachelor's students and Master's students regarding problems related to statistics, measurement, and the use of tests during the preparation of their graduation theses. The calculated T-value was (2,97), with a significance of (Sig = 0,016), while the tabulated T-value was (1,96) at an alpha value of ($\alpha = 0,05$). Therefore, the second hypothesis is confirmed.

3.3. Presentation, Analysis, and Discussion of the Third Hypothesis Results:

The third hypothesis stated that there are statistically significant differences in students' perspectives on problems related to statistics, measurement, and the use of tests depending on the specialization variable (School Psychology / Organizational and Work Psychology). To verify the validity of this hypothesis, an independent samples **T-test** was used. The results are shown in Table No. (06):

Table No. (06): T-value for the significance of the differences in students' perspectives on problems related to statistics, measurement, and the use of tests based on the academic specialization variable.

Variable	Specialization	Sample "N"	Arithmetic mean	Standard deviation	"T" test	Schedule d "T"	Degree of freedom	Sig Value	Resolution
Problems	School psychology	32	69,44	14,53	1,27	1,67	60	0,314	non Function **
	work and organization psychology	30	64,43	16,31					

Source: Prepared by the researcher

The results in Table No. (06) show that the calculated T-value (1.27) is smaller than the tabulated value (1.67) with (60) degrees of freedom and a significance level of (0,05). This indicates that the difference between the mean scores of students in the School Psychology specialization (69,44) and those in the Organizational and Work Psychology specialization (64,43) is not statistically significant. However, both values indicate that students in both specializations acknowledge the presence of problems that make it difficult for them to complete their graduation theses in the fields of statistics and measurement.

This result aligns with the findings of El-Harbi (1979), who investigated the main educational problems faced by graduate students from the perspective of their supervisors. El-Harbi's study found that the most significant problem was "weak academic performance of some students" (Akil, 2005, p. 22). This is further supported by El-Bassam's (1983) study, where students ($n = 101$) reported that the primary issue they faced during their field research was their lack of sufficient background in scientific research methods (El-Maghribi, 2011, p. 30). Additionally, specialists emphasize that research in the social and human sciences is more challenging due to the lack of precision in its methodologies compared to natural sciences. This is due to various difficulties and obstacles, such as the difficulty of experimental control, isolating overlapping variables in social and human phenomena, and the "difficulty in accurately measuring social and human phenomena due to the absence of precise measurement tools" (Ben Seghir, 2013, p. 32). This may explain the similar mean

scores of students in both the School Psychology and Organizational and Work Psychology specializations on the study scale, as both fields are human-centered.

From this, we conclude: There are no statistically significant differences in the perspectives of students in the School Psychology and Organizational and Work Psychology specializations regarding problems related to statistics, measurement, and the use of tests during the preparation of their graduation theses. The calculated T-value (1.27) is smaller than the tabulated value (1,67) with (60) degrees of freedom and a significance level of (0,05). Therefore, the third hypothesis is not confirmed.

4- Conclusion

Based on the theoretical and field aspects of this study, it can be concluded that the problems faced by university students related to statistics, measurement, and the tests used in preparing their graduation theses are primarily as follows: Weak knowledge of students about the characteristics of good research and lack of experience in conducting field research; Weak control over scientific research methodologies; Weak critical thinking and creative abilities, and a lack of logical reasoning skills among students; Lack of experience in formulating statistical hypotheses; Difficulty in selecting appropriate tools for data collection, insufficient experience in constructing these tools, and ensuring their psychometric properties; Weak ability to determine the appropriate statistical methods for data analysis and difficulty understanding the relationship between formulating study hypotheses and the statistical methods needed to test them; Lack of experience in analyzing and interpreting results, and inability to relate the research findings to previous studies; A lack of a model or printed material clarifying the nature of the graduation thesis and its requirements within university institutions.

Furthermore, the task is made even more challenging by the lack of support from thesis supervisors in the statistical aspects of the thesis, the absence of supervisors knowledgeable in statistics and psychometrics, insufficient actual monitoring of thesis progress by supervisors, and the frequent absenteeism of supervisors during student meetings. In light of this, a number of suggestions can be made that may help prevent and address the problems faced by university students related to statistics, measurement, and the tests used in preparing their graduation theses:

- Conduct similar studies in various academic disciplines to provide researchers in Algerian universities with realistic information about the main difficulties students face when conducting scientific research, especially in areas related to statistics, measurement, and methodology.
- Introduce courses that equip students with research skills, including mastery of statistics and measurement units, as well as building and using data collection tools.
- Place greater emphasis on practical sessions to train students in the application of statistics, measurement, and the use of tests.
- Create mechanisms for monitoring and updating the academic competencies of faculty members in the areas of measurement and statistics.
- Enhance the quality of field research and encourage it.

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