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THE RELATIONSHIP BETWEEN STATISTICS ANXIETY AND THE EFL STUDENTS' AVOIDANCE OF QUANTITATIVE RESEARCH: CASE OF POSTGRADUATE STUDENTS OF ENGLISH, AT THE UNIVERSITY OF BEJAIA

Siha Boughani[1]
University of Bejaia (Algeria)
siha_boughani@univ-bejaia.dz

Abstract

Academic research focuses essentially on empirical processes when investigating educational phenomena because they provide credible and reliable results. On another side, statistics in social sciences and educational research have become the major issue of different research works. Regarding the importance of statistics, different disciplines emphasize the indispensability of integrating it into educational curricula. The majority of EFL students come from non-scientific disciplines and their attitudes towards scientific subjects-and particularly towards mathematics and statistics- are mostly negative. These negative attitudes create a kind of willingness to avoidance quantitative research because of the feelings of uneasiness, stress and anxiety when studying statistics. Therefore in this study, the researcher tries to describe how stress towards statistics pushes students to avoid using quantitative methods and tools. To reach this aim, the procedures of an exploratory design were followed; in order to evaluate students' attitudes towards research, a questionnaire is employed. Furthermore, a modified version of Papanastasiou's Attitudes Toward Research (ATR) scale is used to measure the participants' attitudes towards quantitative research on 5 point scale. Finally, Cruise's et al. (1985) Statistics Anxiety Rating Scale (STARS) is utilized to define the factors leading to statistics anxiety and to check the correlation between quantitative research avoidance and statistics anxiety. The results show that there is a significant positive correlation between statistics' anxiety and students' reluctance towards the use of quantitative research procedures in their research studies.

***Keywords**:* Academic Research, Avoidance, EFL students, Quantitative Research, Statistics Anxiety.)

1. Introduction

Research is one of the most important aspects of EFL students' careers, as it is one of the most important requirements of graduation from university. The importance of quantification in research has emerged increasingly during the recent decade; and numerical data and statistics are demanded in every human activity and throughout a variety of domains including business,

[1] ***Corresponding author :*** Siha Boughani/ https://orcid.org/0000-0003-4112-1864

health, economics, education, management, and others. The researchers collect, analyse, treat, interpret the numerical data for the sake of being able to provide logical and empirical arguments and evidence to their inquiries, ideas, and the activities they perform in their everyday life. In the English as Foreign Language (henceforth EFL) field, learners are engaged in different types of research where they significantly need to use appropriate methods when collecting, analysing, and drawing conclusions. This method should provide reasonable and evidential data to support the interpretation; for this reason, the use of statistics in this field is indispensable.

During the research process, students feel exposed to different types of feelings including fear, anxiety, tiredness, and they start questioning their self-confidence and self-worth when they are under pressure. These different types of emotions might affect to different extents their decisions during the research process.

One of the biggest obstacles students face in the use of quantitative research is that Algerian EFL students usually come from literary fields (mainly: philosophy & literature stream or foreign languages stream), and only a few understand mathematics and statistics. Likewise, different authors and researchers mentioned this in their studies "Statistics anxiety is especially widely spread among students in the field of social sciences such as psychology, education, business, etc" (Onwuegbuzie & Wilson, 2003; Onwuegbuzie, 2004; as cited in Tutkun, 2019). Consequently, their anxiety towards research increases when they are in front of quantitative processes. Except for calculating frequencies and reading them, EFL students find all other quantitative data collection and analysis tools and methods challenging; therefore, their anxiety towards the research activity and, more specifically, towards quantitative research increases. Therefore, in this study, we aim at describing post-graduate students' attitudes towards quantitative research and statistics. In addition, we aim at finding statistical evidence to the relationship between statistics anxiety and quantitative research reluctance or avoidance. Thus, this study tries to provide answers to the following questions:

1. Do EFL postgraduate students feel anxious about quantitative research and statistics?
2. Is there a linear relationship between statistics anxiety and quantitative research avoidance?

2. Literature Review

2.1 Quantitative Research

Quantitative research originates from the field of psychology that uses statistics in order to make generalizations to the whole population based on results obtained from small samples. This type makes use of the techniques that either test a hypothesis or only gather information about a phenomenon (Perry, 2005, p. 79). It usually aims at describing the phenomena in terms of numbers (Kothari, 2004). Dörnyei (2007) stated that quantitative research employs research tools and procedures that collect numerical data that are analyzed with statistical procedures. This kind of research is called quantitative because it employs quantitative data coming in form of numbers or is used to record the data. This latter is analyzed using statistical procedures

(Dörnyei, 2007 & Walliman, 2011, p.71); it includes for example scores of tests, a frequency of a given behaviour (Dörnyei, 2007).

Students' attitudes towards research and research methodology are usually negative. Research is seen as a complex and hard process that leads the students to produce some negative emotional reactions towards it. Anxiety toward research and research methods is explained by Papanastasiou (2006) as the "complex array of emotional reactions which occur when a student encounters research methods in any form and at any level" (p.2). There are a lot of challenges that researchers face when conducting research; these challenges might affect research avoidance or might be correlated with it. One of these challenges is statistics anxiety.

2.2. Statistics Anxiety

The modern views of statistics are different. Definitions like Horace Secrist's and Croxton and Cowden (as cited in Varalakshmi et al., 2004) maintained that statistics is a systematic and purposive process that starts with gathering numeral data to reach a given purpose or a given conclusion and interpretation. Moreover, Agresti and Finlay (1997) claimed that statistics is more than numbers or tables: "Statistics consists of a body of methods for collecting and analyzing data" (p.3). It is, hence, the whole methodology and design that guides the complete study. It does not only include ways of collecting, analyzing, interpreting, and presenting the data but also makes the study appear as logical as possible because it balances between the theory and its application. In other words, Shafer and Zhang (2012, p.9) defined it as "a collection of methods for collecting, displaying, analyzing, and drawing conclusions from data".

The importance of this field led to its integrations in different fields, including education and social sciences. Garfield (1995) stated: "…regardless of the setting, a major concern of those who teach statistics is how to ensure that the students understand statistical ideas and can apply what they learn to real-world situations" (p. 25); therefore, statistics education aims not only at clarifying the content of statistics field but also at teaching the students how to apply these concepts in the target setting or the target field. However, students who do have not enough background in this field fail in it over and over, and thus, develop a kind of fear and anxiety towards this subject. Therefore, this is what leads to developing statistics anxiety.

According to Vigil-Colet et al. (2008), statistics anxiety is defined as some negative emotional reactions that people have when attending statistical lectures, or those who are in front of statistical problems or examinations. Furthermore, Papanastasiou (2006) reports Zeidner's (1990) definition of statistics anxiety: "a performance characterized by extensive worry, intrusive thoughts, mental disorganization, tensions, and physiological arousal when exposed to statistics content" (p. 319 as cited in Papanastasiou, 2006).

Cruise et al. (1985) concluded through their research that statistics anxiety is caused by different factors including the worth of statistics, interpretation anxiety, test and class anxiety, computational self-concept, fear of asking for help, and fear of statistics teachers (as cited in Baloğlu & Zelhart, 2003). These factors lead to increasing the level of anxiety towards statistics

and thus cause different problems and challenges to the students. There are different consequences of statistics anxiety; like physiological effects which include perspiration, headaches, feeling sick, muscle contractions, tension, etc. Other effects can be behavioural like voice tremors, plaintive voice, use of improper language, fits of anger, irritability, tears and so on. Finally, there can also be emotional effects like frustration, uncertainty, reduction in self-esteem and independence, lack of concentration, feelings of disappointment, hostility, and restlessness (Onwuegbuzie et al., 1997 as cited in Baloğlu & Zelhart, 2003). Psychological effects may also be caused by statistics anxiety; it may include symptoms such as depression, frustration, panic, and worry (Tutkun, 2019).

As we may observe, these feelings and different effects can lead the student to the abandonment of the subject or their studies at once. Therefore, searching for different ways to support the students when facing statistics anxiety ought to be a major concern of the researchers in this research field.

3. Methodology

3.1. Participants

This study's population is post-graduate EFL students who are currently conducting different research works at the department of English, University of Bejaia/ Algeria. Following the voluntary response sampling procedure, twenty-three (23) postgraduate students have taken part in the investigation and responded to the questionnaire and the scales. The participants are second and third-year students (in the doctoral training program).

3.2. Research Aim and Hypothesis

This study aims to investigate the type of correlation (relationship) between statistics anxiety and quantitative research avoidance. On this concern, it is hypothesized- in this study- that there is a positive relationship between the two variables. That is to say, when EFL students have high statistics anxiety, they try at maximum avoid using quantitative research in their research works and tend to reformulate their topics to be able to use qualitative research instead.

3.3. *Data collection and Analysis Procedures*

In order to achieve the aim and check the hypothesis, an overall questionnaire consisting of semi-closed questions and two attached scales was opted for:

- The questionnaire explores the students' attitudes towards research, quantitative research and statistics.
- The modified version of Papanastasiou's Attitudes Toward Research (ATR) scale measures the students' attitudes towards quantitative research.
- The Statistics Anxiety Rating Scale (STARS) was developed by Cruise et al. (1985). It includes 6 sub-scales: Statistics worth, Interpretation anxiety, Test and Class Anxiety, Computational Self Concept, Fear of Asking for Help, Fear of Statistics Teachers.

The data are analysed descriptively, and to check the relationship that was hypothesized in this study, a Spearman's Rank-Order Correlation was run. The results are shown in the following section.

4. Results

4.1. *Students attitudes towards Quantitative Research and statistics Anxiety*

Table 1.

S*tudents' Responses about whether the participants are preparing a research work*

	F	%
Yes	23	100%
No	0	0%
Total	23	100%

One can see that all the students (100%) are preparing research projects and making research. The types of research they are recently preparing are done for different purposes, the second table summarizes the types of the research works.

Table 2.

Types of Research the Correspondents are Currently Conducting

	F	%
A conference presentation	3	18.8%
A research article for publication	1	6.3%
A dissertation/ thesis	11	68.8%
A research proposal	1	6.3%

From the above table, one can see that the majority (68.8%) of the respondents are in the process of conducting research and writing down their dissertations. On another side, 18.8% are conducting research to participate in conferences against 6.3% are writing a research article for publication.

Section One: Students' attitudes towards research and quantitative research

b) Participants' opinion towards research

Attitudes towards research are very important in research as they can positively and negatively affect their motivation to accomplish research works. The respondents' attitudes towards research are summarized in the following points:

- It requires hard work as well as having some basic knowledge
- It is a good chance to explore new things and a good experience as well which will be needed in the future, but it is difficult at the same time.
- Research is the crucial part of knowledge, and we can find much information about any topic

- It helps students to evaluate their knowledge and develop it
- Research is very difficult
- It needs improvement and it lacks the fun aspect.
- It is very demanding
- It is interesting but difficult
- It helps to discover new things but it is difficult
- It is important in learning because through research we learn. Moreover, research proves that learning is a lifelong process
- It is important in life and studies because it allows one to answer questions, confirm or reject an idea, understand phenomena as well as to graduate and enter professional life.
- It permits us to find solutions to problems and get new data
- Research refers to the process of collecting, analyzing, reporting and publishing information in a specific shape, it is full of limitations may be time, place, materials...
- It is a complex and hard process

c) What is your preferred research method (s)

Table 3.

Participants' Favoured Research Method

	F	**%**
Qualitative Method	4	17.4%
Quantitative method	8	34.8%
Both	11	47.8%

The table demonstrates that (47.8%) of the post-graduate students prefer to use both qualitative and methods; however, 34.8% of the respondents claim that the quantitative method is more preferable than the qualitative one; against 17.4% who favoured qualitative methods over the quantitative one. In order to understand better the reasons behind their choices, the respondents were asked for justifications.

Respondents' Justification

1. *Quantitative Method:* the students favour this method because:
   - It is the best because it is objective as it has to do with numerical data and statistics.
   - The results are valid, reliable and generalizable to a larger population
   - Easy to be conducted.

2. *Qualitative method:* the students prefer this method because:
   - Easy to be analysed
   - The qualitative research method has more true data

- They find the description of qualitative research more difficult; needs much time; and more experience!
- They like qualitative research because they are interested in the field of human science and not numbers and statistics.
- They prefer this method because of time; as it helps them gain more time.
- The respondents claim that they are preparing a research dissertation; they feel stressed about how to make the statistic results; so they are trying to find a theme that doesn't need any statistics.

3. *Both:* the respondents who claimed they prefer using both methods because:
   - They believe that the choice of the method depends on the research topic. Yet, they prefer both qualitative and quantitative because they are both useful
   - Both lead to effective data
   - When using both, their results may be more strong and valid.
   - They prefer using interviews and questionnaires
   - Mixed method because the strength of one method resolves the weaknesses of the other, this means that they are complementary
   - Quantitative and qualitative methods attempt to reveal the truth by means of different approaches. Since the truth is relative and complex, both methods can help in understanding different facets of reality. This is why they believe they are both significant and should be adopted according to the purpose and nature of study rather than preference.

1. What are the challenges you meet when conducting quantitative research?

Table 4.

Challenges Faced by the Respondents When Conducting a Quantitative Research

	F	%
Lack of quantitative research background	0	0%
Lack of knowledge about statistics and statistical data analysis procedures	12	52.2%
Lack of knowledge about the quantitative data collection procedures	2	8.7%
Lack of knowledge about how to interpret quantitative data	9	39.9%

The above table reports the most important challenges postgraduate students face when conducting quantitative research. As one can observe, 52.2% of the respondents have a lack of knowledge concerning statistics and statistical data analysis procedures. Moreover, 39.9% have a lack of knowledge about quantitative data interpretation procedures; against 8.7% of the respondents claimed that they have a lack of knowledge about quantitative data collection procedures.

d) What makes you feel anxious about quantitative research?

Table 5.

Factors Leading to Quantitative Research Anxiety

	F	%
Lack of knowledge about it	7	31.8%
Your negative attitudes towards statistics	15	68.2%
Total	23	100%

Table 5 shows that 68.2% of the respondents think that their anxiety toward quantitative research is caused mainly by their attitudes towards statistics, while 31.8% think that their anxiety is caused by their lack of knowledge about quantitative research.

e) What are the factors that make you more anxious about statistics?

Table 6.

Factors Leading to Statistics Anxiety

	F	%
prior knowledge	4	17.4%
course grade	0	0%
attitudes towards calculators	4	17.4%
instructor evaluation	1	4.3%
negative prior experiences and poor achievement in mathematics	10	43.5%
fear of statistics examination	3	13%
The fear is only related to the interpretation, they like math and statistics	1	4.3%

The above table reports the respondents' opinions about the factors that lead to statistics education. The results demonstrate that (43.5%) of the respondents think that negative prior experiences and poor achievement in mathematics are the leading factors, whereas 17. 4% think that prior knowledge is what affects statistics anxiety, and another (17.4%) of them responded by attitudes towards calculators; against, 13% of the respondents who reported fear of statistics examination; and finally the respondents reported that their fear is only related to the interpretation and that they like math and statistics (4.3%). Likewise, with the same percentage (4.3%), the respondents maintained that instructor evaluation affects statistics anxiety. None (0%) of the respondents expressed their fear of the course grades.

Section Two: Statistics Anxiety and QR Reluctance

f) Do you think there is a relationship between your anxiety towards statistics and your reluctance to use quantitative research?

Table 7.

Students' Attitudes towards the Relationship between Statistics' Anxiety and Students' Quantitative Research Reluctance

	F	%
Yes	15	71.4%
No	6	28.6%
Total	21	100%

The above table demonstrates that (71.4%) of respondents think there is a relationship between their statistics anxiety and their reluctance to use quantitative research; 28.6% do not think that there is no relationship between statistics anxiety and the students' reluctance to use quantitative research. For more details about their opinion, the participants were asked to clarify their points of view concerning the relationship between them. The attitudes are categorized into these main points:

- The negative attitudes about calculators and calculation make them fear using quantitative methods.
- For them Quantitative research equals statistics
- The less they know the more frustrated they get about quantitative research. They feel they do not have enough knowledge about statistics.
- Some of the quantitative research methods require complex statistical equations, this stressing in their opinion.
- Statistics are merely difficult
- In quantitative research, they deal with numbers, this is stressful
- They fear statistics, and that's why they avoided all that has relation to them
- They are not confident to do quantitative research because of their lack of knowledge of statistics
- The only way to analyse quantitative data is through statistics; however, this latter scares them.

g) Express your level agreement towards these statements: (Strongly agree to strongly disagree)

Table 8.

Papanastasiou's Attitudes Toward Research (ATR) Scale's Results

	N	Mean	Std. Deviation
Quantitative Research Usefulness	23	2.27	.49
Quantitative Research Anxiety	23	2.50	.99
Positive research predisposition	23	2.60	1.07
Valid N	**23**		

The ATR scale is made to measure attitudes towards research. The version distributed on our sample is meant specifically to measure their attitudes towards quantitative research. Therefore, the table shows that they have positive attitudes towards the quantitative research usefulness (between agree and neutral: M=2.27, SD=.49). Moreover, their attitudes towards having quantitative research anxiety range from agree and neutral (M=2.72, SD=.99). Finally, their attitudes towards positive research predispositions range between agreeing and neutral (M=2.60, SD=1.07).

h) Statistics Anxiety Rating Scale (STARS)

Table 9.

Statistics Anxiety Rating Scale (STARS) Results

	N	Mean	Std. Deviation
Statistics worth	23	2.60	.98
Interpretation anxiety	23	2.30	.89
Test and Class Anxiety	23	2.26	1.00
Computational Self Concept	23	2.45	.94
Fear of Asking for Help	23	2.61	.91
Fear of Statistics Teachers	23	2.98	.97
Valid N	**23**		

The above table presents the results of the Statistics Anxiety Rating Scale (STARS). As we can see, the students' attitudes towards statistics' worth range between agreeing and neutral (M=2.60, SD=1.07). Furthermore, their attitudes towards interpretation range also between agree and neutral. The same results (between agree and neutral) are marked for all statistics anxiety aspects, namely: Statistics worth- (M= 2.60, SD= .98), Interpretation anxiety (M= 2.30, SD= .89), Test and Class Anxiety (M= 2.26, SD= 1.00), Computational Self Concept (M= 2.45, SD=.94), Fear of Asking for Help (M= 2.61, SD= .91) and finally, Fear of Statistics Teachers (M= 2.98, SD= .97).

4.2. *Testing the Relationship between Statistics' Anxiety and Quantitative Research Avoidance:*

Table 10.

The Relationship between Quantitative Research Avoidance and Statistics Anxiety

		Interpretation anxiety	Test and Class Anxiety	Computational Self Concept	Fear of Asking for Help	Fear of Statistics Teachers
Quantitative Research Avoidance	Correlation Coefficient	,995**	,980**	,946**	,979**	,967**
	Sig. (2-tailed)	,000	,000	,000	,000	,000
	N	23	23	23	23	23

** The correlation is significant at the level of .01 (2tailed).

A Spearman's rank-order correlation was run to determine the relationship between 23 students' statistics Anxiety and their Quantitative Research attitudes and avoidance. As one can see, there is a strong positive correlation which was statistically significant. More specifically, one can observe that there is a positive and a strong relationship between Quantitative research anxiety and statistics' anxiety aspects mainly: interpretation anxiety, class and test anxiety, Computational Self Concept, fear of asking help and fear of statistics teachers.

- QRA and Interpretation Anxiety: $r_s(21) = .995$, $p = .000$).
- QRA and Test and Class Anxiety: $r_s(21) = .995$, $p = .000$).
- QRA and Computational Self-concept: $r_s(21) = .946$, $p = .000$).
- QRA and Fear of Asking for Help: $r_s(21) = .979$, $p = .000$).
- QRA and Fear of Statistics Teachers: $r_s(21) = .967$, $p = .000$).

5. Discussion

Research is an important process that each student at university should go through. Different studies have reported a variety of benefits and advantages students can grasp and achieve throughout the process of research. They can develop skills like collaborative and individual work skills, passion, investigative skills, exploring career fields… and so on (Madan & Teitge, 2013). However, researchers, especially novice ones, face many challenges when trying to accomplish their works. One of these challenges is the employment of quantitative research and more specifically the use of statistics in their research. For Algerian students whose major is not scientific, and who had not attended mathematics and statistics lectures in secondary school or at university, quantitative research is considered an obstacle that blocks their advancement in the research process. Therefore, the only way to save themselves is to avoid employing quantitative research in their studies. This situation, thus, leads to reduce students' motivation and self-confidence when making any research work. The developed

feeling towards statistics and subject or statistics tools for data analysis is known as statistics anxiety.

Therefore, through this study, we tried to check whether there is any kind of correlation between statistics anxiety and quantitative research avoidance; yet before, to prove that the post-graduate have statistics anxiety and have the willingness to avoid using quantitative research because of their statistics anxiety. The result of this investigation revealed that all the participants are conducting research; be it a dissertation or paper for a conference presentation or an article to be published or a research proposal. All these types of works require the researchers to decide on the research methods and procedure to use. Therefore, this sample is appropriate for this study.

From a general point of view, students prefer non-quantitative subjects in their studies; as cited in Uttl and Smibert (2017), students preferences in scientific and nonscientific choices affect their evaluation of teachers' performance at the university. Their research disclosed that teachers of quantitative subjects receive lower evaluations comparing other teachers of other modules. Moreover, Uttl, White, and Morin (2013) maintained that although the "quantitative courses such as statistics, research methods, and psychometrics are required or strongly preferred for many of the higher-paying jobs that require only a BA/BSc degrees", the students have minimal interest in the quantitative subjects (mainly statistics courses) and the least interest in the subjects that have a moderate quantitative content; namely: research methods and research-intensive courses. Likewise, the findings of this research at hand disclosed that the participants are aware of the importance and the benefits they can gain when making research; and they are also aware of the difficulties and the obstacles they are going to face. When asked about the preferred research methods, the majority of the participants claimed they prefer using both quantitative and qualitative methods; nevertheless, their justifications for preferring the use of quantitative methods were not rich compared with the reasons given for the qualitative method. Only three reasons were provided (it is objective, results can be generalized and it is easy to be conducted as far as it concerns calculating frequencies and percentages). Preferences in research might lead to biasing the research results. In research, the choice of research methods should be based on scientific bases and research aims. In this study, even when having anxiety towards statistics, the students are aware of this as they claimed that the choice of the methods based on the topic and aims of the research, but still they prefer using both qualitative and qualitative because the mixed method is effective and both methods are complementary to each other. As one can see, despite the fact they know the importance of quantitative research; these students still have fear towards quantitative research.

Moreover, the participants maintained that the challenging stages in conducting research are caused mainly by a lack of knowledge about statistics and statistical data analysis procedures and a lack of knowledge about how to interpret quantitative data. From a broader point of view, Qasem and Zayid (2019) reported problems encountered by undergraduate students. They claimed that the students have a lack of knowledge in research methodology, in the format of the research projects and proposal; they do not know how to select research tools and methods for the collection and analysis of data, and finally have problems in reporting

results. Furthermore, Akyürek and Afacan (2018) classified the problems faced by their participants. They mentioned the lack of scientific knowledge and problems related to methodology (including problems related to methods, planning, research problem, data collection tools, data analysis). These results from the literature support the findings of this study as cited above.

There are no research works that investigated the relationship between statistics anxiety and quantitative research avoidance. However, the literature investigating statistics anxiety and its relationship with performance is rich (Benson, 1989; Feinberg & Halperin, 1978; Lalonde & Gardner, 1993; Onwuegbuzie & Daly, 1996; Onwuegbuzie & Seaman, 1995; Pretorius & Norman, 1992; Tremblay et al., 2000; Zeidner, 1991 as cited in Hanna et al., 2008; Blalock, 1987, as cited in Tutkun, 2019). Some studies found a significant correlation and others found non-significant correlations (Macher et al., 2015).

Moreover, Keeley et al. (2008) found that a quadratic (not linear) relationship between statistics anxiety and performance; and they found that variables like motivations and achievement did not moderate the relationship between performance and statistics anxiety. Furthermore, Ghani and Maat (2018) investigated the relationship between statistics anxiety and statistical achievement; they reported that students suffering from statistics anxiety work hard to learn; however, they are less efficient in organizing their learning environment; and thus, find difficulties in completing assignments.

In this study, when the participants were asked about the factors that lead to feeling anxious towards quantitative research, they claimed that their negative attitudes towards statistics are the major reason. This is supported by the finding of Spearman correlation which revealed a significant positive correlation between all statistics anxiety's aspects and quantitative research avoidance [QRA and Interpretation anxiety: $rs(21) = .995$, $p = .000$), QRA and test and class anxiety: $rs(21) = .995$, $p = .000$), QRA and Computational Self Concept: $rs(21) = .946$, $p = .000$), QRA and Fear of Asking for Help: $rs(21) = .979$, $p = .000$), QRA and Fear of Statistics Teachers: $rs(21) = .967$, $p = .000$)]. This relationship between the two variables is explained by the respondents by claiming that some of the quantitative research methods require complex statistical equations, and this stressing in their opinion. Besides, they are not confident to do quantitative research because of their lack of knowledge in statistics; and because they find statistics- on which quantitative research bases- scary and challenging.

The findings also show that although the students have good quantitative research predispositions and know the quantitative research usefulness in their field of interest, they still have quantitative research anxiety and still want to avoid using it at any chance. The major factor that leads the students to develop statistics anxiety, as mentioned by the respondents, is negative prior experiences and poor achievement in mathematics, in addition to attitudes towards calculators and prior knowledge. In our study, the students agreed on statements which concern Interpretation anxiety, Test and Class Anxiety, Computational Self-concept, Fear of Asking for Help and Fear of Statistics Teachers.

In the literature, the different components leading to statistics anxiety are statistics teachers; the nature of statistics, lack of feedback from statistics instructors, the pace of statistics instruction courses, statistical notation/terminology, and complexity of statistics textbooks (Onwuegbuzie et al., 1997; Zeidner, 1991; Fenster, 1992a; Kaiser, 1992; as cited in Baloğlu &

Zelhart, 2003). Moreover, Benson (1989) and Benson and Bendalos (1989) did not find a significant difference between graduate and undergraduate statistics' anxiety which supports the results of Tomazic and Katz (1988) who concluded that "one's academic major, academic status, perception of previous success in mathematics courses, and the time elapsed since last mathematics course were predictors of statistics anxiety (as cited in Baloğlu & Zelhart, 2003).

Subsequently, what one can assume from the above results and findings is that since statistics anxiety is correlated negatively with performance and achievement as it is reported in different studies, and since the students find statistics scary, challenging and difficult; and in view of the fact that it affects the students' behaviours and ways of thinking, one can conclude that the students decide to abandon anything related to statistics, including the choice of quantitative research or any research problem that require the employment of the quantitative methods.

6. Implication and Suggestions

Since Quantitative research is based on numbers and statistics, students who have not studied mathematics for a long period seem to raise their statistics anxiety and thus raise quantitative research avoidance. In order to prevent this relationship to affect negatively the students' research applications, we suggest a number of procedures to be applied when teaching quantitative research:

- The students should be aware of the importance of conducting research and the importance of quantitative research mainly. Teachers should work on refining the students' attitudes towards research and quantitative research.
- Most students fear calculators and calculations, therefore, we emphasize the importance of using technological software and programs to facilitate the calculation processes.
- Statistics, in general, may be related to mathematics, but we focus on the importance of elaborating the worthiness of statistics in the field of EFL research. That is to say, the focus is not on statistical calculation but the interpretation of the numbers.
- The students fear of interpretation can be reduced through practical activities, we mainly refer to the analysis of research articles in order to familiarise the students with reading and interpretation of statistical results in their field of study.
- Focusing on practice may reduce examination and class stress. Students may work in pairs and groups to reduce their anxiety.

The classroom environment should help students feel at ease and push them to ask for help and should create a motivating and enjoyable environment.

7. Conclusion

The importance of quantitative research in the field of education requires students to take risks and put their effort into the development of the NEEDED statistical skills in their domain. Moreover, teachers and educational curricula should provide the students with a helpful, motivating and enjoyable environment to reduce statistics anxiety. The needed material and sufficient time should be programmed for quantitative research.

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