

T.R.  
VAN YUZUNCU YIL UNIVERSITY  
INSTITUTE OF NATURAL AND APPLIED SCIENCES  
DEPARTMENT OF STATISTICS

**INVESTIGATION OF THE MOTIVATIONS OF DISABILITY STUDENTS BY  
STEPWISE REGRESSION METHOD**



M.Sc. THESIS

PREPARED BY: Ahmed Hassan ABDULLAH  
SUPERVISOR: Assoc. Prof. Dr. Yener ALTUN  
II. SUPERVISOR: Dr. Nasradeen ALBARWARI

VAN-2022



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## ACCEPTANCE AND APPROVAL PAGE

This thesis entitled “Investigation of The Motivations of Disability Students By Stepwise Regression Method” is presented by Ahmed Hassan ABDULLAH under the supervision of Assoc. Prof. Dr. Yener ALTUN in the department of Statistics has accepted it as an M.Sc. thesis according to Legislations of Graduate Higher Education on 09/06/2022 with unanimity/majority of vote's members of the jury.

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Signature

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Director of Institute



## **THESIS STATEMENT**

All information presented in the thesis obtained in the frame of ethical behavior and academic rules. In addition, all kinds of information that does not belong to me have been cited appropriately in the thesis prepared by the thesis writing rules.

Ahmed Hassan ABDULLAH





## ABSTRACT

### INVESTIGATION OF THE MOTIVATIONS OF DISABILITY STUDENTS BY STEPWISE REGRESSION METHOD

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M.Sc. Thesis, Statistical Department  
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This study investigated the relationship between the demographic variables, teachers' occupational stress, and motivational stimulation (MS) of disabled pupils. The study was conducted with 118 teachers who worked at five institutes for special education in Duhok city in the north of Iraq. To determine the perspective of the study group, the questionnaire of "Occupational Stress" and the "Motivational Stimulation" was used. Analyzes were made using IBM SPSS 25.0 program. The data obtained from the scales were tested for normality. As a result of the normality test, it was decided to conduct parametric tests. To evaluate the effect of independent variables in terms of the dependent variable, parametric tests, which included "*t-test*" and "*One-way Variance Analysis (ANOVA)*", were conducted. Additionally, "*Correlation Analysis*" was conducted to reveal the level and significance of the relationship between the variables. According to the results of the study, it was determined that there were statistically significant differences in the motivational stimulation (MS) according to the variables of years of experience, type of disability the teacher was dealing with, Nature of Job, Relations with Pupils, and the relations with Parent ( $p < 0.01$ ). Furthermore, five multiple linear regression models were found to predict the variance in arousal motivation degrees through the variables studied in the study.

**Keywords:** Disabled pupils, Motivational stimulation, Occupational stress, Special education, Teachers.



## ÖZET

### ENGELLİ ÖĞRENCİLERİN MOTİVASYONLARININ ADIMSAL REGRESYON YÖNTEMİYLE İNCELENMESİ

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Bu çalışmada demografik değişkenler, öğretmenlerin mesleki stresi ve engelli öğrencilerin motivasyonel uyarımı arasındaki ilişki araştırılmıştır. Çalışma Irak'ın kuzeyindeki Duhok şehrinde bulunan beş özel eğitim enstitüsünde görev yapan 118 öğretmen ile gerçekleştirilmiştir. Çalışma grubunun bakış açısını belirlemek için “Mesleki Stres” ve “Motivasyonel Uyarım” anketi kullanılmıştır. Anket formlarından toplanan verilerin analizleri SPSS 25.0 paket programı kullanılarak yapılmıştır. Çalışma grubunun demografik değişkenlere göre dağılımını ortaya çıkarmak için frekans ve yüzde hesaplamaları yapılmıştır. Ölçek ve alt ölçeklerinden elde edilen verilerin normallik dağılımı sağlayıp sağlamadığını belirlemek için normallik testi yapılmıştır. Normallik testi sonucunda parametrik testlerin yapılmasına karar verilmiştir. Bağımsız değişkenlerin bağımlı değişken açısından etkisini değerlendirmek için “t-testi” ve “Tek Yönlü Varyans Analizi (ANOVA)” içeren parametrik testler yapılmıştır. Ayrıca değişkenler arasındaki ilişkinin düzeyini ve anlamlılığını ortaya çıkarmak için “Korelasyon Analizi” yapılmıştır. Araştırmanın sonuçlarına göre, deneyim yılı, uğraştığı engelli öğretmen türü, işe kaygısız, öğrencilerle ilişkiler ve veli ile ilişkiler değişkenlerine göre motivasyonel uyarılda istatistiksel olarak anlamlı farklılıklar olduğu tespit edilmiştir. Ayrıca, çalışmada incelenen değişkenler aracılığıyla uyarılma motivasyon derecelerindeki varyansı tahmin edebilen beş çoklu doğrusal regresyon modeli bulunmuştur.

**Anahtar kelimeler:** Engelli öğrenciler, Mesleki stres, Motivasyonel uyarılma, Öğretmenler, Özel eğitim.



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2022

Ahmed Hassan ABDULLAH



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## SYMBOLS AND ABBREVIATIONS

Some symbols and abbreviations used in this study are presented below, along with descriptions.

| Symbols   | Description                      |
|-----------|----------------------------------|
| $\bar{x}$ | Mean                             |
| SD        | Standard Deviation               |
| F         | Fisher Value                     |
| %         | Percentage                       |
| $r$       | Simple Correlation               |
| $n$       | Number of Samples                |
| $\alpha$  | Constant Value, Intercept        |
| $X_i$     | Represents Independent Variables |
| $Y_i$     | Responsible Variables.           |

| Abbreviations | Description                                 |
|---------------|---------------------------------------------|
| TR            | Turkish Republic                            |
| LR            | Linear Regression                           |
| MLR           | Multiple Linear Regression                  |
| MS            | Motivational Stimulation                    |
| OS            | Occupational Stress                         |
| RM            | Regression Models                           |
| SMR           | Stepwise Multiple Regressions               |
| ANOVA         | Analysis of Variance                        |
| SPSS          | Statistical Package for the Social Sciences |
| VIF           | Variance Inflation Factor                   |



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## 1. INTRODUCTION

Studies and research in various sciences of knowledge, including social, psychological, educational, biological and economic, rely largely on statistical concepts, whether in collecting or analyzing its data, starting from the stage of design and end of the decision-making stage. Furthermore, Allam (2003), believes that the science of statistics is no longer limited to describing the data or making inferences from the samples on the communities, it is no longer a tool only for scientific research but is a systematic way to explain phenomena. Thus, the researcher can find the relationships between the variables included in the phenomenon, determine the degree of association between them, and arrive at honest indicators that benefit in forecasting and analyzing relationships to reach the causative factors for the phenomenon through analytical methods appropriate statistic. In most research and studies, the relationship between variables is analyzed to conclude a formula that describes this relationship. For example, suppose the attention is focused on studying the relationship between two variables. In that case, we use the method of Correlation analysis. However, if it focuses on studying the impact of the contribution of one variable on the other, we use the method of Regression analysis (Al-Shafe'i, 2014).

Multiple linear regression analysis is concerned with the study and analysis of the effect of several independent quantitative variables on the quantitative function. In contrast, the multiple linear regression model is used to predict future values by estimating the model's parameters adopted in the estimated model for prediction purposes (Kadhim, 2009). As a result of the development in methods of estimating parameters, including the least-squares method (OLS), the method of greatest possibility (ML), and other methods of estimation, this allowed researchers to search for other methods (Çerezci and Gökpınar, 2005).

Regression analysis is defined as a mathematical measure of the average relationship between two or more variables, one of which is the dependent variable (the response variable) and one or another variable called the explanatory variable. Relationships of this type are often called regression models (Al-Abadi, 2011).

Regression is one of the most important and powerful statistical methods used in predictive studies conducted to predict a particular phenomenon through a set of factor that contribute to its occurrence. It is considered a Multiple model regression, which measures the effect of more than one variable on the most widely used dependent variable, and it has several methods (Al-Matrafi, 1999). Furthermore, the current study depends on the stepwise multiple regression method, pointing out the importance of its use in educational and psychological research to assess the impact of the independent variables based on the dependent variable. As pointed out (Stamovlsis, 2010) on the explanatory power, a stepwise multiple regression model for the change that occurs to the response variable is attributed to the explanatory variables.

In this research, an applied example of the study was adopted that includes the most important influences that affect the teacher's stimulation of motivation of pupils with disabilities. Furthermore, the multiple regression model was used as a means to predict the stimulation of motivation. Finally, the model's parameters adopted in the predictive arousal model have been estimated.

Linear regression analysis is considered an advanced statistical method that includes inference accuracy to improve research results through optimal use of data in all applied fields. British scientist Galton Francis was the first to use the concept of regression in biological applications in 1886 to explore some relationships between certain biological variables. It is usually defined as a mathematical measure of the average relationship between two or more variables, in the units of measure adopted in the relationship. This type of relationship is often referred to as a regression model (Osman, 2016).

The multiple regression method is commonly used in educational and psychological sciences. It aims to reduce the number of the many independent variables that affect the phenomenon to the smallest number possible. So that it has a large percentage of explanation for the variation in the values of the dependent variable, thus increasing the predictive power of the dependent variable through a regression model that contains a few independent variables (Assas, 2019). The overall significance of the regression can be tested by testing the null hypothesis, which states that there is no relationship between each of the independent variables and the dependent variable. The alternative hypothesis states that there is significance between the independent variables

and the dependent variable, meaning at least one independent variable affects the dependent variable (Osman, 2016). In general, the importance of the current research can be clarified through the following:

1. Theoretical importance:

The study dealt with a statistical method commonly used in educational and psychological research. The theoretical aspect contributes to indicating the efficiency of the progressive multiple regression model in determining the proportion of the explained variance and the effect of the sample size on the proportion of the explained variance of the progressive regression model.

2. Practical importance:

The study also dealt with an application aspect, where data for the dependent variable and data for the independent variables were used, and statistical application was conducted to reach the coefficient of determination R (the proportion of the variance explained by the multiple regression model). Through the applied side, the factors affecting the variance of the dependent variable were determined when using the multiple linear regression model.

This study attempts to employ a statistical method in predicting the factors that can affect the variation of the teacher's motivational stimulation (MS) for pupils with disabilities. This means employing statistical tools to study special education educational and psychological variables. Furthermore, the study aimed to determine the percentage of the explained variance of the teacher's motivational stimulation of pupils with disabilities according to the multiple linear regression model in the light of several independent variables (demographic and occupational pressures). Accordingly, the research objectives are summarized by answering the following questions:

A. To what extent do demographic factors, as independent variables, affect the variance of the dependent variable, the stimulation of the motivation for pupils with disabilities in special education institutions?

B. To what extent does occupational stress as an independent variable affects the dependent variable's variance, the stimulation of the motivation for pupils with disabilities in special education institutions?

C. Is it possible to predict the teacher's stimulus to the motivation of pupils with disabilities as a dependent variable in the light of demographic variables and occupational stress as independent variables from the teachers' point of view?



## 2. LITERATURE REVIEW

Wiens (1989), they address some problems in the theory of mini max designs for multiple linear regression. made apparent the problems which can arise from too strict an adherence to the assumed form of a regression function, by analyzing the relative importance of errors due to bias and to variance. They found that very small deviations from the model form can eliminate any supposed gains arising from the use of a design which minimizes variance alone.

Al-Kholi (2003), aims to reveal the relations between the employee satisfaction and the marital satisfaction of the working people with special needs and the ability of the human resources, the revealing of the relation between the case and the educational background of the people with special needs and their ability to towards human resources, and lastly marking the difference in ability towards human resources of the people with special needs, according to ( satisfaction of employment, social status, educational and cultural background) and the most important conclusion was using multilinear regression analysis, by using the stepwise regression form, the variables indicated that the people with special needs that are employed, is the number of years these people have studied, and the variables of the age and the income do not have a large impact on the prediction of abilities, therefore the formula of the regression was excluded.

Park et al (2018), applied multiple regression analyses through A ground source heat pump system (GSHP) with 450 RT capacity composed of ten heat pump units provides the heating and cooling energy to an entire hospital building. The seasonal heating performance of 3.21 and system operation properties of the system were analyzed using in situ monitoring data from Nov. 2016 to Mar. 2017. On this basis, hourly GSHP system performance prediction models applying a multiple linear regression (MLR) and an artificial neural network (ANN) were developed. The quantitative effects of influencing variables on the system performance, including the entering source and load water temperatures (EST, ELT) were analyzed by elaborated MLR model with statistical significance. The prediction accuracy was 3.56% by the MLR, and 1.75% by the ANN, based on the coefficient of variation of root mean squared error (CVRMSE) without

overall bias. These prediction models can be used as a baseline for the measurement and verification (M&V) of possible future energy conservation measures and real-time performance monitoring to check malfunction of the system.

Roundy and Frank (2004), applied multiple linear regression with nonlinear regression through using multiple linear regression models with nonlinear power terms may be applied to find relationships between interacting wave modes that may be characterized by different frequencies. Such regression techniques have been explored in other disciplines, but they have not been used in the analysis of atmospheric circulations. In this study, such a model is developed to predict anomalies of westward-moving intrapersonal precipitable water by utilizing the first through fourth powers of a time series of outgoing longwave radiation that is filtered for eastward propagation and for the temporal and spatial scales of the tropical intraseasonal oscillations. An independent and simpler compositing method is applied to show that the results of this multiple linear regression model provide a better description of the actual relationships between eastward- and westward-moving intra- seasonal modes than a regression model that includes only the linear predictor. A statistical significance test is applied to the coefficients of the multiple linear regression model, and they are found to be significant over broad regions of the Tropics. Correlations between the predictors are shown to not significantly influence results for this case. Results show that this regression model reveals physical relationships between eastward- and westward-moving intraseasonal modes. The physical interpretation of these regression relationships is given in a companion paper.

Al-Abasi (2013), multi linear regression is the oldest and most famous statistics method, that is well known for and it'sing, it's also an prediction example analyzer rely on for evaluating the causation of the qualitative several a number of other variables or the predictions of the future value and it has dependent expeller variable which symbolized with the symbol of  $y_i$ . As the other variables are called independent variables, predictions, characteric take the symbol  $X_{ij}$ , where the  $i = 1,2,3 \dots n$  which indicates the Individuals and the value  $j = 1,2,3 \dots p$  which indicates the variables. Taking the sample multi linear regression (in matrix formula) as below:

$$Y = XB + \varepsilon$$

and its analyzing shape is reached by estimating the parameter  $\beta$  with a way of estimation, and the least squares method is one of the most famous method, which chooses a level that minimizes the summation of the remaining  $e$ , and the test of the quality is double by the success of the sample through diagnose tools for drawing the remaining of linear regression measured values,  $\hat{y}_i$  then having a look at the final results, then if the linear regression was correct the nondependent variable values must distribute around the randomly measured line without forming any clear general directions, also the quality of the success of the model regression can be tested depending on summarizing indicators known as  $R^2$  coefficient of determination which take the value between zero to one, and whenever the value is neared to one, means the possibility of prediction of the value  $y_i$  in a more realistic depending on the relation that connects the value  $X_{i,s}$  and finally the overall significance of the sample can be tested by using F test, and the test of the independent partial significance variables can be tested by using the T test.

Al-Kukhan (1997), aimed to find the sources of occupational pressures facing teachers of special education institutions in the West Bank and find whether occupational pressures as a dependent variable are affected by some independent variables such as gender, age, educational experience, educational level, gender, the disability that the teacher means, and the authority supervising the school. The results indicated that income occupied the first source of pressure, followed by the learner's characteristics, parents' relationships with the administration, the curriculum, professional growth, social status, working conditions, workload, and relationships with colleagues. The results also showed that there is a difference in the level of sources of total stress due to the gender variable for male teachers, the age variable for teachers aged between (41-50), the educational level variable for bachelor's teachers, and the educational experience variable for teachers who worked for a period of (5-10) years. Furthermore, the type of disability variable is meant by teachers of hearing disabilities and teachers of mental disabilities.

Matalqa (1995), prepared by entitled the motives that motivate workers in Arab private schools in the Emirate of Sharjah to choose to work in them, the results showed that the motives are material motives such as wages, salaries, housing benefits or children's education. However, the choice did not affect the nature of work, marital status, age group,

educational qualification and gender, on the types, arrangement and relative importance of motives.

Al-Imam (2002), aimed to evaluate teachers' perceptions of motivating students with special needs towards learning. The study found a lack of some methods that teachers use to motivate students with special needs. Special needs towards learning: It was evident in teachers' lack of skills for students with special needs.

Yahya (1994), Furthermore, on job satisfaction among female teachers working in mental disabilities centers in the city of Amman the study results indicated that 49% of the study sample showed their job satisfaction with work. Furthermore, there were no significant differences due to marital status, age, experience or educational level.

Ramadan (1991), aimed at knowing the level of stress among male and female teachers and its impact on their degree of job satisfaction, it was carried out by The study results showed that the majority of male and female teachers were satisfied with their work. The teachers were more satisfied with intrinsic reinforcements such as moral values, community service, independence, use of abilities and achievement. At the same time, they were dissatisfied with external reinforcements such as salary, advancement, promotion, working conditions, and management policy.

Al-Faouri (1990), Another study conducted by on the occupational stress facing special education teachers in Jordan and its results indicated that the sources of stress facing teachers with mental disabilities were: Relationships with parents, characteristics of the learner, working conditions with persons with disabilities, and the relationship with management, colleagues, curricula, tools and teaching aids.

### **3. MATERIALS AND METHODS**

The population of this research is the teachers working at five Public Centers for Special Education, all located in Duhok Province in the North of Iraq. Therefore, the population of this research consisted of 172 teachers.

The sample group of the research consists of 130 teachers. The research participant group was determined by the "simple random sampling method". A simple random sampling method means that the units in a sample have an equal probability of selection (Özen and Gül, 2007). Accordingly, it aimed to collect data by reaching all (172 individuals) from 5 different special education institutes. Based on the sample size in the survey studies Salant and Dillman (2000) and Cohen et al (2002) stated, it could be stated that the number of participants in the study is within the range, and it was pretty sufficient compared to the universe of the study.

Furthermore, it is suggested Chatfield (1995), in the regression analysis that the number of observations  $n$  is at least equal to four times the number of independent variables. It is suggested Li and Others (2005) that the number of cases is at least it is between six to ten times the number of independent variables. It is suggested Fidell and Tabachnick (2013), that the sample size required to build a linear regression model is greater than 50 sightings or eight times the number of independent variables.

Therefore, 130 teachers from five institutes for disabled pupils were reached. However, since 12 scale forms were not filled correctly, they were excluded from the research, and the scale forms obtained from 118 teachers were evaluated.

#### **3.1. Occupational Stress (OS)**

Man faces many challenges and situations in daily life, and the work of a teacher is considered a physical and mental challenge. So, the teacher needs to use much energy in his daily work in class and his efforts and family commitments. This tendency, which is routine for the teacher, significantly advances the pressure on the teacher. As a result, work is not seen as the root of infinite contentment and fulfilment but rather as a source of

tension, resentment and humiliation (Kaur, 2011). Stress is one of the most prevalent phenomena in professional work in modern societies, as all aspects of human activities generate stress (Aremu and Adenegan, 2013; Ismail and et al, 2014).

In the educational and administrative literature, many researchers agree that we live in an environmental system in which many stimuli, various stimuli, and multiple causes thrill the individual in his life. Such stimuli start from home to school, to the labor market, to the society in which he or she lives. This can lead to an individual living in a state of anxiety, tension, and emotion. Furthermore, this affects the individual's duties, family and functional duties, and the individual's relationship with the close society, which may affect his/her health and body (Mohamed, 2018).

Stress is a term that is rarely clearly understood, and there is no agreement among scientists on the concept of professional stress. This is because it has different means for different people (Stranks, 2005). Occupational stress has become increasingly common in the teaching profession mainly because of increased occupational complexities and increased economic pressure on individuals. A major source of distress among teachers is the result of the failure of the school to meet the social needs and jobs demands of the teachers. Teaching has been identified as one of the most stressful professions today. The reasons for that are pretty similar to other stressful occupations in the world. In a survey assessing the stress levels of various jobs by the Health and Safety Executive, teaching came on top. The report, *The Scale of Occupational Stress: further analysis of the impact of demographic factors and type of job*, published in 2000, found that 41.5% of teachers reported themselves 'highly stressed', while 58.5% came into a 'low stress' category, while 36% of teachers felt the effects of stress all or most of the time. This is an alarming state and is visibly the most prominent reason school teachers quit at a very high percentage or seek professional help to fight back stress (Kaur, 2011).

Robbins and Judge (2012) stated that "Stress is an unpleasant psychological process that responds to environmental pressures". Thus, Robbins et al (2013), similarly define professional stress as an adverse reaction of employees due to the extraordinary demands, opportunities, and constraints at the workplace. Also, professional stress is defined as an individual's mental state that faces a demanding condition or any constraint in the organization that he/she feels harmful or threatening to her/ himself (Nagra, 2013).

The organizations carry the considerable economic cost of some \$2.5 trillion annually in the world economy. However, when it comes to the work environment, the most common mental disorders include depression, anxiety and stress, as they are massive in terms of sickness, absenteeism and low productive value (Dewe and Cooper, 2017).

In the relevant literature, it can be realized that several scholars believe that professional stress has a significant effect on employees' lives and is linked to both physical and mental health (Hopkins, 2014). According to Schwab and Iwanicki (1982), professional stress in teachers can lead to various negative outcomes such as emotional exhaustion, feelings of depersonalization, and a sense of failure condition the authors refer to as "burned out." Burnout is one of the main reasons teachers leave the teaching profession, a loss that leads to additional costs in training and employment in education (Niles and Anderson, 1993). In other words, the negative consequences of professional pressures on teachers can be both internal and external. Because of the negative consequences associated with occupational stress, many Studies have attempted to understand the phenomenon of occupational stress better related to education. These studies found that the degree of stress can vary as a function of several variables. For example, (Chong and Chan) saw professional stress as an unpleasant feeling that grows when individuals' exertion, overwork, and worry about they cannot deal with excessive stress. Moreover, Ramadan (1991), in a study examining the relationships between secondary school teachers' professional stress levels, personality type, and social support, found that burnout was greater among teachers new to the profession and teachers with more personality (non-job-related) in their lives. Teachers who lack robust social support systems and teachers with type A personality.

Similarly, in his study of occupational stress and teaching, Borg et al (1991), identified four factors that contributed to teachers' level of occupational stress. First, most people never realize how much stress teachers deal with every day. Personal stress manifests itself clearly in feeling tired, bored, and losing sleep. In severe cases, symptoms such as excessive tension, ulcers and rashes follow (Gaziel, 1993). Notably, psychologists define stress as the body's response to a change that requires an adaptive response, mentally, physically, or emotionally (Bauer and Erdogan, 2009).

According to Kyriacou (2001), teacher stress is experienced in teachers with negative emotions such as anger, anxiety, frustration, depression, and nervousness, resulting from some sides of their actions as teachers.

### **3.1.1. Causes of stress**

In general, sources of occupational stress include underload, work overload, role conflict and ambiguity, poor working conditions, job instability, and workload (Rani and Singh, 2012). The sources of occupational stress can be categorized based on their source. According to Manshor (2000), there is a range of variables that lead to the emergence of stress in the workplace, family factors and including individual, socioeconomic states and financial, Psychological and health factors. In addition, some organizational factors can result in occupational stress, such as bad relationships between people, unjust administrative practices, inadequate staffing levels, and long work hours (Newstrom, 1997; Cooper, 1998). So, the causes of stress can be determined as follows:

#### **3.1.1.1. General factors**

Working with the national curriculum, teacher evaluation, lack of authority and penalties for disciplining students, threats to close school, media portrayal of teachers, inability to reconcile different roles such as teacher, mentor, counsellor, social worker, conflict at home and work, attack on pride by rude pupils, financial stress, deteriorating prestige in society. Furthermore, the successive rapid changes in Teaching Methods that teachers must know, such as curriculum changes and Modern teaching methods, school closures and redeployment, are likely to impact professional stress in teaching environments for teachers (Borg, 1990).

#### **3.1.1.2. Management role**

The feeling of being taken advantage of or manipulated, being seen as a willing workplace, lack of flexibility in times of need, excessive focus on paperwork, lack of

support from management, sexism, not knowing if you are doing well, lack of good pay and promotional aspect.

#### **3.1.1.3. School policy and spirit**

Lack of consultation, fear of speaking what one thinks, lack of clear boundaries of responsibility, adapting to change, fear of parental abuse, break, lunch, after-school assignments, covering up for absent colleagues, and fear of losing your job.

#### **3.1.1.4. Working conditions**

Large classrooms, crowded staff areas, low-light rooms, lack of resources, work on school matters during occupations, rewards do not match efforts.

#### **3.1.1.5. The pupils**

Lack of cooperation, ethnic problems, pupils' use of foul language, pupils' reply back, verbal abuse by pupils towards staff and pupils' attitude towards authority, attack on pride by rude students (Kaur, 2011).

### **3.1.2. Stages of occupational stress**

The literature indicates three distinct phases of occupational stress: the alarm reaction phase, the resistance phase, and the burnout phase.

1. Alarm stage: In this stage of stress, the person is exposed to external stress and insists on things that must be done. It might help him think of this moment as defence through personal experience. If the reaction is sufficient, the body will turn back to its resting situation after successfully dealing with the source of tension. (Bauer and Erdogan, 2009).

2. Resistance stage: This stage begins with increased tension and a high level of anxiety and tension. However, resistance usually results in many negative phenomena such

as urgent decisions and harmful clashes or conflicts. In addition, resistance can lead to the emergence of many situations and variables that emerge from the control of the individual and the organization in a way that may lead to the breakdown of resistance and the emergence of a set of adverse problems and symptoms (Newstrom, 1997; Moorhead and Griffin, 2012).

3. exhaustion stage: When occupational stress continues to affect the body, the ability to adapt is eventually lost, bringing the individual to a state of overload. In other words, it can be said that the individual moves to this stage when he is constantly exposed to sources of stress and for a long time, where he is exposed to stress as a result of repeated resistance and attempt to adapt (Stranks, 2005).

### **3.2. Motivational Stimulation (MS)**

International bodies, governments and organizations have realized the importance of education for each and every child irrespective of their needs and disabilities. The World Conference on Education for All (EFA) in Jomtien in 1990 talked about getting all children to school and giving them good education (Ngonyan, 2010).

Theoretical literature has shown that motivation is the motivating force that makes the individual exert the effort and activity necessary for learning to occur. Therefore, the teacher must possess the necessary skills to arouse motivation to learn among students with special needs. The teacher will find in the classroom some students who are missing motivation to learn because they have a long history of failure or lack of self-satisfaction. The lack of motivation for some of them leads to many problems facing teachers during the teaching process. Therefore, he is involved in the educational process and works to stimulate his students' motivation toward learning (Clarendon and Arlington, 1999).

Contemporary special education institutions have taken care of the professional pressures that face their teachers and provoke them. Her students' motivation with special needs to learn gave it special importance. This is due to the direct relationship that exists between the teacher's association with a profession, loyalty to it, and satisfaction with it on the one hand. It sought to provoke the motivation of his students to learn on the other hand. Provoking the motivation of students with special needs to learn, although theories and

opinions differ about it, there is agreement that it is closely related to the behavior of students with special needs in schools. The science of behavior confirms that the motivation of students with special needs to learn is one of the most important reasons for individual differences (Al-Jassar, 2000). Many studies confirmed that motives increase the desire for learning and that a strong motive leads to an increase in the concentration of attention and delays the appearance of fatigue (Al-Hayali, 1990).

Motivation is an internal role model that provokes the envy of the individual and motivates him to find it contagious, achieve a threat, a result, or satisfies a specific need, physiological and psychological (Al-Qaryouti, 2000).

Qatami (2000), defined it as the factors that drive the individual and culminate a behavior towards a goal. Furthermore, Maslow defined it as a constant, continuous, changing, complex, and deliberate need that affects all aspects of living.

There is a consensus among psychologists on the relationship of motivation to learning, where the learners are classified into the positive learner, who is characterized by a degree of self-motivation and the ability to take responsibility, and the negative learner, who receives a period of time in cities without playing a role in the educational formation. Moreover, teachers are concerned with one kind of motivation: motivation to learn. It is described as a tendency to search for meaningful and valuable activities to derive educational benefits (Al-Dihan, 2001).

Perhaps the main reason for the teacher's failure is due to the lack of awareness of the role that motivation plays in the activity of the students and their interest in the lesson. The individual's thinking, various feelings and behavioral habits are all affected by the set of motives or needs that the individual feels and the nature of the goals he seeks. Motivation is a tool that determines whether students with special needs can reach the knowledge and skills they want to gain, and therefore constitutes one of the factors that enable the person who activates their motivation to perform effective learning (Kutner et al., 2005)

The motive has been determined by the expansion of the psychologists' pedagogy and the multiplicity of the determinants of its definition. The reason for this is the imbalance of its theoreticians in focusing on specific aspects without worrying about it due to the psychological school in which they meet. Likewise, the interests of these

perspectives are drawn, as there are cities that focus on some aspects of the process of excitation, such as muscular tension or the number of neural or respiratory impulses. Some cities focus on how the concept of the individual interacts with such specific threats. The results of the matter led to the beginning of the concepts and definitions (Darwazeh, 1995).

Owens (1995) mentions two main ways of thinking about a topic. Motivation in organizational behavior during the twentieth century:

The first method: the combination of rewards and penalties, is the way to pay the special coolant teachers; in institutional life, it emerged from behavioral psychology where the external control of the individual is the focus.

The second method emerged from cognitive psychology and human psychology and focused on leaders. However, again, the mentality of the individual's feelings and internal thoughts is a major source of motivation.

The motivation to learn is an internal situation for the learner that pushes him to pay attention to the educational situation and to actively engage in this activity until the learning is achieved (Adas, 2006). Hence, the school environment has the opposite role in preparing the educational climate that facilitates the learning process. Suppose this environment is invested in sound scientific leadership. In that case, this will increase students' motivation with special needs, given the principle of proper education for students in cities before the teacher. The focus axis is to contribute the most outstanding share in developing this category of children's cities. This is done by providing elements of learning motive, removing the obstructing factors to the primary motive for learning, providing opportunities for children to express their feelings and thoughts freely, preparing the devoid of support, and selecting the number of attractive ones. Frequent routine stresses are limited to the number of times and hesitations. The number is the number of the traditional academic studies and the total number of school durations concerning the relatively short time limits (Cristina, 2002).

Arousing the motivation to learn means arousing the students' desire to learn and motivating them to do so. There are no specific ways to stimulate the learner's motivation to learn. The role model is that the process of motivating students to learn deserves the most attention in cities before the school environment and in the presence of the teacher, and studies have shown that learning without urging students is a flawed process. The

motivation of students to learn, as the extent of interaction between this triad increases the risk factor, especially that the interaction products modify the most potent multiplication results for the number of students, the ability to evaluate the number of criticisms horizontally and vertically, and a modest response rate of learning (Wolfensbergen, 1986). Moreover Lawrence (1997), finds that all children learn in a wheelchair when they realize that the task they have to perform is related to their lives.

Furthermore, motivating the student motivation is the teacher's responsibility, as the teacher's enthusiasm is necessary to achieve learning, as it may require the teacher to perform unfamiliar actions and tools to motivate learners (Strickland, 1989). Therefore, the teacher must be keen to identify the student's motives towards education because of their effective impact, using positive reinforcement. The reward offered by the teacher is positive reinforcement for that student to change his behavior and improve or increase the student's performance in a specific activity (Windless, 1992).

Furthermore, standing on the nature of the concept of motivation and its relationship to the teaching process helps the teacher to master some strategies that suit the nature of this category of students to encourage them to invest their energies more effectively in achieving the various educational goals (Al-Lakani and Al-Qurashi, 1999).

### **3.3. Special Education**

Special education aims to identify each child's individual needs and provide the conditions for learning that work to meet those needs. Perhaps the best challenges facing teachers of this category of children are those related to the special education curriculum and what it includes from the main elements, such as motivation and the most important psychological concepts.

The educational staff in special education has attracted the attention of many researchers, as the study (Anderson, 2002) aimed to show the most critical factors that help teachers stay in their profession. The results indicated that the most critical factors that help teachers stay in their profession are working in schools supporting teachers. Work in schools that cannot tolerate students who obstruct the learning process and work in a clean, safe and orderly environment and work in schools with high salaries.

### 3.4. Multiple Linear Regression Models

A multiple linear regression (MLR) model is used to describe the relationship between the dependent variable  $y$  consisting of  $(n)$  From the observations and the independent variables  $(X_1, X_2 \dots X_k)$ , and this relationship can be expressed.

Regression is one of the statistical methods that are affected by the sample size, which affects the predictive ability of the dependent variable from the independent variables and knowing the variance of the dependent variable to which each of the independent variables contributes. Al-Ghamdi (2013) and Sabeel (2015) indicated that the accuracy of regression models is greatly affected by the size of the sample. Thus, the predictive ability of the regression model and the accuracy or credibility of the researcher's decision is affected. When building a regression model to determine the shape of the relationship, the optimal size of the variables is determined. Therefore, the researcher crystallized the research idea, which is to investigate the contribution of the independent variables to the explanatory variance of the dependent variable in the stepwise multiple regression model in light of different sizes (Assas, 2019).

Al-Shafe'i (2014) defines multiple regression as the regression used to predict a future phenomenon by more than one independent variable. Furthermore (Ismail, 2016) defines stepwise multiple regression as a test of the significance of the independent variables previously entered into the multiple regression model in any step of the selection process.

In psychological, educational and social sciences, the researcher uses many statistical measures, the most important of which are prediction measures, which are regression analysis - path analysis - and factor analysis. Regression analysis is used in prediction studies where it is required to predict the relationship between variables and estimate their parameters. The research sample selection is vital as it provides us with data that can be relied upon in generalizing the results on the society; Therefore, the degree of accuracy in the data obtained by the researcher from the sample depends on the appropriate number of the sample and its selection method (Assas, 2019).

Chatterjee and Hadi (2012) states that regression analysis is used for three primary purposes:

A. Description: Describe the relationship between the explanatory variables and the dependent variable. (We try to select the fewest number of explanatory variables that make up the most substantial part of the variance of the dependent variable).

B. Estimation and Prediction: Estimating the mean value of a new observation value of the dependent variable corresponding to actual values of the independent variables.

C. Control: Interpreting the change in the values of the dependent variable in terms of the change in the values of the independent variable based on taking the independent as a control. The objective of building the model is to determine the size by which the independent variable must be modified to obtain specific values of the dependent variable.

### **3.4.1. Regression models (RM)**

The model may contain one explanatory variable, and in this case, it is called the Simple Linear Regression Model (Ali and Samprit, 2006). If the model contains several explanatory variables, it is called a Multiple Linear Regression Model (Freedman, 2009).

Regression models (RM) are divided into non-linear models and linear models:

1. Non-linear regression of the variables: In which one of the independent variables is raised to the power of one, multiplied or divided by another variable, and when represented graphically, it takes the form of a curve

2. Linear regression of the variables: The equation representing the relationship is of the first degree (the independent variables raised to the power of one), and it is not multiplied or divided by another variable, and when represented graphically, it takes the form of a straight line.

Linear regression is generally divided into two types:

a. Simple linear regression: Simple linear regression is concerned with studying the effect and behavior of one independent variable on a dependent variable, which estimates the linear relationship between two variables, one independent and the other dependent. Multiple linear regression estimates the linear relationship between more than one independent variable with the dependent variable (Al-Derini, 2008). Simple linear regression is defined as the process of estimating the linear relationship of two variables,

one of which is a variable that is measured without error and is called an independent variable. The other takes values that depend on the value of the independent variable, and it is called the dependent variable. (Murad, 2011) defines simple linear regression as “a relationship between two variables, one of which is dependent and the other is independent”. The level of measurement is ordinal, periodic, or relative, not nominal, and the relationship between them is linear, and the observations are moderately distributed.

b. Multiple linear regression: The multiple regression analysis model is one of the most widely used statistical analysis tools, and the multiple model is concerned with estimating the relationship between a quantitative variable, which is the dependent variable, and several other quantitative variables, which are the independent variables (Osman, 2016).

Multiple Linear Regression is an extension of simple linear regression until the linear regression assumes one predicted dependent variable and one independent variable. Multiple regression assumes one dependent variable is predicted, and a number of independent variables act as predictor variables. (Al-Shafe'i, 2014) defines multiple regression as "the regression used to predict a future phenomenon through more than one independent variable". (Murad, 2011) defines it as “reaching a linear equation linking a dependent variable with several independent variables”.

Multiple linear regression is used to examine the linear relationship between a dependent variable and two or more independent variables and to determine the effect of independent variables on the dependent variable (Demir, 2020).

The multiple linear regression method uses the Least Squares Method (LMS). The coefficients are calculated by minimizing the sum of squares using the LMS method. In order for the LMS method to be applied, the following assumptions must be present.

- The mean of the expected value is zero and the variance is constant.
- Error terms must be normally distributed and stochastic
- There should be no relationship between the dependent variable and the error terms
- Error terms must be independent of each other
- The realization of these conditions provides an unbiased and accurate calculation of the parameters in the regression analysis (Topal et al., 2010)

The linear model can be written as Eq (3.1) with  $X$  as the independent variable and  $\hat{y}$  as the dependent variable.

$$Y_i = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \cdots + \beta_k X_{ik} + \varepsilon_i \quad i = 1, 2, \dots, n \quad (3.1)$$

The terms used to calculate the effect of the independent variables in the model on the dependent variable are expressed with  $\beta$  and the error terms with  $\varepsilon$ . However, since the entire population cannot be reached, the  $n$ -dimensional sample is generally used. The multiple regression model for the sample is written in the Eq (3.2).

$$\hat{Y}_i = \hat{\beta}_0 + \hat{\beta}_1 X_{i1} + \hat{\beta}_2 X_{i2} + \cdots + \hat{\beta}_j X_{ij} + e_i \quad i = 1, 2, \dots, n \quad j = 0, 1, \dots, k \quad (3.2)$$

Here the  $\hat{\beta}$  values are the predicted values of the  $\beta$ 's. The matrix is written as in the Eq (3.3).

$$\begin{bmatrix} y_1 \\ y_2 \\ \vdots \\ y_n \end{bmatrix} = \begin{bmatrix} 1 & x_{11} & x_{21} & \cdots & x_{1k} \\ 1 & x_{12} & x_{22} & \cdots & x_{2k} \\ \vdots & \vdots & \vdots & \ddots & \vdots \\ 1 & x_{n1} & x_{n2} & \cdots & x_{nk} \end{bmatrix} \begin{bmatrix} \hat{\beta}_0 \\ \hat{\beta}_1 \\ \vdots \\ \hat{\beta}_k \end{bmatrix} + \begin{bmatrix} \varepsilon_1 \\ \varepsilon_2 \\ \vdots \\ \varepsilon_n \end{bmatrix} \quad i = 1, 2, \dots, n \quad j = 0, 1, \dots, k \quad (3.3)$$

In this case, the sum of squares of the error will be as Eq (3.4).

$$\sum_{i=1}^n e_i^2 = \sum_{i=1}^n (y_i - \hat{y}_i)^2 = \sum_{i=1}^n (y_i - x_i' \beta)^2 \quad (3.4)$$

To obtain  $\hat{\beta}$  values that minimize the mean squared error, the above equation must be solved by taking the first-order derivative and setting it to zero. Thus, if the assumptions are satisfied,  $\hat{\beta}$  values can be obtained with any of the following equations using the LMS method (Demir, 2020).

$$\hat{\beta} = \arg \min_{\beta} \left\{ \sum_{i=1}^n (y_i - x_i' \beta)^2 \right\} \quad \text{or} \quad \hat{\beta} = (X'X)^{-1} X'Y$$

The predicted values of the dependent variables, Y are calculated with the Eq (3.5)

$$\hat{Y} = X\hat{\beta} + e \quad (3.5)$$

### 3.4.2. Linear regression (LR)

There are various methods of regression analysis, including linear regression. (Murad, 2011) defines linear regression as “reaching an equation to predict one variable from the other”. This means that linear regression is somewhat similar to linear correlation and differs from linear correlation in using the rule of least squares to find the best straight line connecting the two variables. Together, correlation scores are used to determine the strength of the relationship between the two variables.

The model of linear regression can be represent as:

$$\hat{y} = \beta_0 + \beta_1 X_{i1} + \beta_2 X_{i2} + \cdots + \beta_k X_{ik} + \varepsilon_i \quad i = 1, 2, 3, \dots, n \quad j = 0, 1, \dots, k$$

where:

$\beta_0$  = represent constant term.

$\hat{y}$  = represents the dependent variable.

$\beta_i$  = coefficient of  $X_{i1}$  calculated using least squares (CULS).

$X_i$  = denotes the independent variables.

$\varepsilon_i$  = Error value.

### 3.4.3. Multiple regression analysis methods

When analyzing the data and obtaining the multiple regression equation through statistical packages, there are three main regression models, each representing a specific way to address the regression problem. These methods differ from each other, and therefore the regression models can be divided into three sections:

i. Standard regression: In this method, the independent variables are entered into the regression equation at once to get the equation that describes the relationship between all the independent variables and the dependent variable at once.

ii. Hierarchical regression: In hierarchical regression, the independent variables are included in the proposed equation successively on a theoretical statistical basis.

iii. **Stepwise regression:** In this method, we enter a number of independent variables, not all variables, into the proposed regression equation, and the order of entering the variables into the equation is determined according to a statistical control suggested by the same method. This method is considered the best and most widely used. In this type, a number of independent variables are entered into the regression equation in steps so that the independent variable with the strongest correlation with the dependent variable is entered, provided that this correlation is statistically significant (fulfils the condition of entering the regression equation) and in the steps In the following, the independent variable with the highest partial correlation that is statistically significant with the dependent variable is entered after excluding the effect of the variables that entered the equation, then examining the variables in the regression equation is if the conditions for survival in the regression equation are still met. If one of them does not meet the condition to remain in the equation, it is left out of the equation. The process of entering or taking out the independent variables ends when no variable remains that fulfils the condition of entering the equation or the condition of staying in it (Draper and Smith, 1981)

a. **Back Entry:** All variables are entered once into the linear equation. The independent variable with the lowest partial correlation with the dependent variable is deleted, and so on until only the independent variables that have statistical significance remain in the equation (Salman, 2011.).

b. **Front Entry:** The independent variables are entered in steps. In the first step, the independent variable with the highest correlation with the dependent variable that fulfils the condition of entering the equation (statistically significant) is entered into the equation and so on until the steps stop when there is nothing left. Any variable that fulfils the entry condition into the equation. (Miller, 2002). So, there are several ways in which regression analysis can be performed, varying in how the prediction variables are selected to be entered into the multiple regression equation and in the order in which the predictor variables can be entered. Where there are several ways to calculate the multiple regression equation are:

1. **The method of all possible regressions:** In this method, we estimate all possible types of regression models by entering all the independent variables into the multiple

regression equation (to arrive at a model with the highest value for the coefficient of determination and its F statistic and the lowest value for standard error.

2. Backward method: The regression model is built by entering all the independent variables into the regression equation. Then we start by deleting the independent variables that do not contribute to the variance of the dependent variable one by one (which have the lowest value). For the F statistic, we stop eliminating when the partial F value has a statistically significant effect. We have a regression model that contains only the variables that contribute to the variance of the dependent variable.

3. Forward: We gradually enter the independent variables, and the method of input depends on the highest value of the correlation coefficient between the dependent and independent variables. Then, the significance of the independent variable was chosen using the F statistic. It had a statistically significant effect, as the independent variable contributes to explaining the variance of the dependent variable and including it in the regression model; So, we end by including all the independent variables that contribute to Explaining the variance of the dependent variable in the regression equation.

4. The stepwise multiple regression method: It is one of the most widely used psychological and educational research methods. The current study relies on the stepwise multiple linear regression method. For the previous stages, the variable that is the best variable at one stage may be unnecessary at a later stage; This is because of the relationship between it and the variables that were recently introduced into the regression model. Al-Kilani and Al-Sharifin (2014) define it as "reaching the best predictive equation by determining which variables have a contribution that justifies their retention in the regression equation, excluding them from the regression equation". Ismail (2016) sees it as "a test of the significance of the independent variables that were previously entered into the multiple regression model in any step of the selection process". Thyer (2002), sees that the variables that constitute good explanatory or predictive models are based on the information provided by the gradual regression. When adding or deleting variables in the model, you see the statistical changes for each variable in the steps of the gradual method.

The purpose of using stepwise multiple regression is:

- i. Access to a regression model that includes the fewest possible independent variables, which gives the highest degree of accuracy in predicting the dependent variable.

ii. Avoid the problem of dual linearity or collinearity between the independent variables.

The model of multiple linear regression can be represent as:

$$\hat{Y} = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \beta_4 X_4 + \beta_5 X_5 + \beta_6 X_6 + \beta_7 X_7 + \beta_8 X_8 + \beta_9 X_9 + \beta_{10} X_{10} + \beta_{11} X_{11} + \beta_{12} X_{12} + \varepsilon$$

where:

$\beta_0$  = represent constant term.

$\hat{Y}$  = represents the dependent variable.

$\beta_1$  = coefficient of  $X_1$  calculated using least squares

$X_1$  = denotes the years of experience.

$\beta_2$  = coefficient of  $X_2$  calculated using least squares.

$X_2$  = denotes the educational qualifications.

$\beta_3$  = coefficient of  $X_3$  calculated using least squares.

$X_3$  = denotes the type of disability you are dealing with.

$\beta_4$  = coefficient of  $X_4$  calculated using least squares.

$X_4$  = denotes the nature of the job.

$\beta_5$  = coefficient of  $X_5$  calculated using least squares.

$X_5$  = denotes the financial situation.

$\beta_6$  = coefficient of  $X_6$  calculated using least squares.

$X_6$  = denotes the personal characteristics of the learner.

$\beta_7$  = coefficient of  $X_7$  calculated using least squares.

$X_7$  = denotes the curriculum.

$\beta_8$  = coefficient of  $X_8$  calculated using least squares.

$X_8$  = denotes the relationship with the management.

$\beta_9$  = coefficient of  $X_9$  calculated using least squares.

$X_9$  = denotes the relationship with Colleagues.

$\beta_{10}$  = coefficient of  $X_{10}$  calculated using least squares.

$X_{10}$  = denotes the relationship with pupils.

$\beta_{11}$  = coefficient of  $X_{11}$  calculated using least squares.

$X_{11}$  = denotes the parent's cooperation.

$\beta_{12}$  = coefficient of  $X_{12}$  calculated using least squares.

$X_{12}$  = denotes the incentives.

$\varepsilon$  = Error value.

#### 3.4.4. Features of stepwise multiple regressions (SMR)

Progressive multiple regression, when compared to other multiple regression methods, is characterized by the following:

1. In gradual regression, one model is chosen with specific variables. However, in the method of all possible regressions, we find that it requires building all models that can be reconciled from the independent variables. Therefore, it is difficult to use them due to a large number of their calculations, especially if the number of independent variables is large.

2. The gradual multiple regression takes less time than the posterior method, which needs many mathematical operations. However, it also looks at a particular independent variable in light of what the model variables contribute together, i.e., the variables are more susceptible to deletion.

3. Progressive multiple regression, in which the independent variables previously entered into the regression model, which became ineffective, is excluded. In contrast, the forward method did not exclude the included variables and became ineffective in the regression model.

4. If two variables have a high correlation with each other and have a high correlation with the dependent variable, the stepwise multiple regression method ensures that at least one of the variables is in the model. In comparison, in other methods, the two variables' presence in the model makes the partial correlation of the variable with the dependent variable, not a statistically significant effect.

### 3.4.5. Steps for stepwise multiple regression

This method begins with the inclusion of one of the independent variables in the multiple regression equation step by step with the exclusion of the input variables that have become ineffective in the presence of the rest of the independent variables. The first step: The most powerful independent variables influencing the dependent variable (the strongest related to the dependent variable) are included, which is the first variable to enter the regression equation. The second step: The independent variable with the highest partial correlation is included in the dependent variable after excluding the independent variable's effect in the first step. Hence, we find that the criterion for including the independent variable in the regression equation depends on its ability to explain the most significant amount of variance. Therefore, it is checked in each step of the steps whether the independent variables still contribute to the multiple correlation if one of them does not fulfil the condition of survival in the equation is taken out. Moreover, this process is repeated until it ends with introducing all the independent variables that contribute to the interpretation of the variance of the dependent variable and the deletion of the independent variables that explain a small amount of the variance of the dependent variable (Hassan, 2016).

Multiple linear regression is one of the most important research tools in various fields. It aims to study the interrelationship between an affected or dependent variable ( $y$ ) and independent variables: by dependent variable and more than one influential variable by a mathematical equation called the regression model. Furthermore, the multiple Linear regression model is necessary to differentiate between two types of relationships that link the dependent variable to the independent variables. The first is called the functional relationship, and the second is called the statistical relationship (Saleh and Kikhia, 1999).

Despite the importance of this method in all research studies, great caution must be exercised when applying it because it is often misunderstood and used correctly and can give incorrect and misleading results, especially if conditions or assumptions on the data are not taken into account when applied. As a result, it becomes unreliable in results and interpretation (Al-Jaouni, 2008).

### 3.5. Data Collection Tools

Information on the institute (center), gender, years of experience, educational qualification, and type of disability were obtained from the teachers in the special education centers. The researcher depended on a questionnaire prepared in Jordan by Ashour (2006) to obtain statistical data from teachers. The tool is three parts: The first is to collect information about variables: "experience, education qualification, and the kind of handicap dealing with". The second part of the tool is the "Occupational Stress Scale, " consisting of 53 items in Jordin form. However, in adapting form to Iraq, the researcher deleted two items according to the experts' opinion. Then, the scale consisted of 51 items and was distributed on nine dimensions or subscales.

Furthermore, the scale was used to measure teachers' perception of occupational stress in total and in each subscale. So, 11 items are aimed at measuring the "Nature of Job". 8 items are for measuring the "Financial Situation". 7 items for measuring the "Personal Treats of Learner". 4 items for measuring the "Curriculum". 5 items for measuring the "Working Relations with Administration". 5 items for measuring the "Relations with Colleges". 2 items for measuring the "Relations with Pupil". 6 items for measuring the "Parents cooperation". 3 items for measuring the "Rewards". The Occupational Stress Scale uses a 3-point Likert type scale, ranging from 1 to 3 (1: low level -3: high level). In order to evaluate the scale's usefulness, the measurement tool was conducted with 15 teachers, and it was observed that no correction was necessary. When the adaptation process was completed, the scale was conducted in hardcopies based on the availability of the participants.

Cronbach Alpha coefficient, which demonstrated the scale's internal consistency, was 0.911 for the whole scale. Thus, the scale was found to be reliable and valid to be used in measuring teachers' perception of occupational stress. As a result, the scale consisted of nine subscales, and these subscales and items are presented below.

- Stress-related with Nature of Job 11 items.
- Stress-related with Financial Situation 8 items.
- Stress-related with Personal Treats of Learner 7 items.
- Stress-related with Curriculum 4 items.
- Stress-related to Working Relations with Administration 5 items.

- Stress-related with Relations with Colleges 5 items.
- Stress-related with Relations with Pupil 2 items.
- Stress-related with Parents cooperation 6 items.
- Stress-related with Rewards 3 items.

The third part of the questionnaire is to collect information about teachers' perceptions of Motivational stimulation among disabled pupils, which consisted of 70 Items. To determine the suitability of the data collected by using the prototype of the scale that included 70 items, the researcher depended on face validity by obtaining five experts' opinions. They all agree about the suitability of the data collected using the Motivational stimulated scale.

The overall Cronbach Alpha internal reliability coefficient of the scale was calculated as 0.928, and the scale's reliability indicates that. So, the used scale for measuring the teachers' perspective about the motivational stimulation of disabled pupils consisted of 70 items with four alternatives for responding to each item (1: Never, 4: Always). Analyses of the data obtained from the scale forms were conducted using the SPSS 25.0 package software. In this research, the normality test was first conducted to see whether the data obtained in the scale fulfilled the normality assumption.



#### 4. RESULTS

This research is concerned with investigating the effect of demographic factors of teachers and occupational stress on the motivational stimulation of disabled pupils in Special Education Schools. Various results were obtained based on the questionnaires. The findings were categorized based on their relevance and presented with their subheadings.

Table 4.1. Normality test results of occupational stress scale and its subscales

| Scale                     | N   | $\bar{X}$ | Sd      | Skewness | Kurtosis |
|---------------------------|-----|-----------|---------|----------|----------|
| Occupational Stress Scale | 118 | 21.305    | 1.81875 | 0.038    | -0.634   |
| Nature of Job             | 118 | 14.627    | 2.00766 | 0.900    | -0.462   |
| Financial Situation       | 118 | 13.966    | 1.69933 | 0.842    | 0.568    |
| Personal Treats           | 118 | 7.1102    | 1.92058 | 0.319    | -0.548   |
| Curriculum                | 118 | 8.4915    | 2.13135 | 0.653    | 0.894    |
| Relations with Adminis.   | 118 | 8.4407    | 1.98947 | 0.762    | 0.585    |
| Relations with Colleges   | 118 | 4.5847    | 0.49487 | -0.348   | -0.911   |
| Relations with Pupil      | 118 | 10.991    | 1.71218 | 0.595    | -0.145   |
| Parents cooperation       | 118 | 6.0508    | 0.84578 | -0.097   | -0.600   |
| REWARDS                   | 118 | 226.79    | 5.84348 | -0.084   | -0.491   |

Sd = Standard Deviation

Table 4.2. Normality test results of the motivational stimulation scale

| Scale                 | N   | $\bar{X}$ | SD      | Skewness | Kurtosis |
|-----------------------|-----|-----------|---------|----------|----------|
| Motivation Stimulate. | 118 | 226.7966  | 5.84348 | -0.084   | -0.491   |

As seen in Table 4.1 and Table 4.2, the skewness and kurtosis values of the scale were found between +1.5 and -1.5. Thus, it was seen that normality was provided. As Tabachnick and Fidell (2007), stated that skewness and kurtosis values in the range of +1.5 to -1.5 can be interpreted as a normal distribution. It was decided that these values also provided the assumptions for correlation analysis.

#### 4.1. Findings Regarding the Demographic Variables of Teachers

Table 4.3. Distribution of participants by years of service

| Years of experience        | N          | %            |
|----------------------------|------------|--------------|
| Less than five years       | 39         | 33.1         |
| Between five and ten years | 61         | 51.7         |
| More than ten years        | 18         | 15.2         |
| <b>Total</b>               | <b>118</b> | <b>100.0</b> |

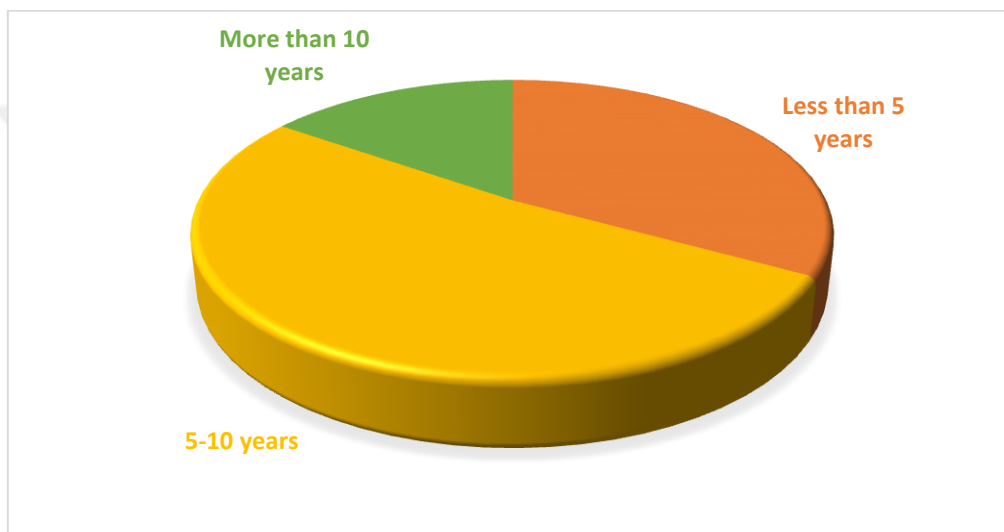


Figure 4.1. Distribution of participants by years of service.

The distributions in Table 4.3 showed that 51.7% of all used samples of the participants represented between five and ten years of experience, while 33.1% represented less than five years of experience. Moreover, only 15.3% represented More than ten years of experience. This was an expected result considering the nature of special education institutes' orientation in Iraq.

Table 4.4. Distribution of the research group according to the qualification variable

| Qualification | N          | %          |
|---------------|------------|------------|
| Diploma       | 20         | 16,9       |
| Bachelor      | 98         | 83,1       |
| <b>Total</b>  | <b>118</b> | <b>100</b> |

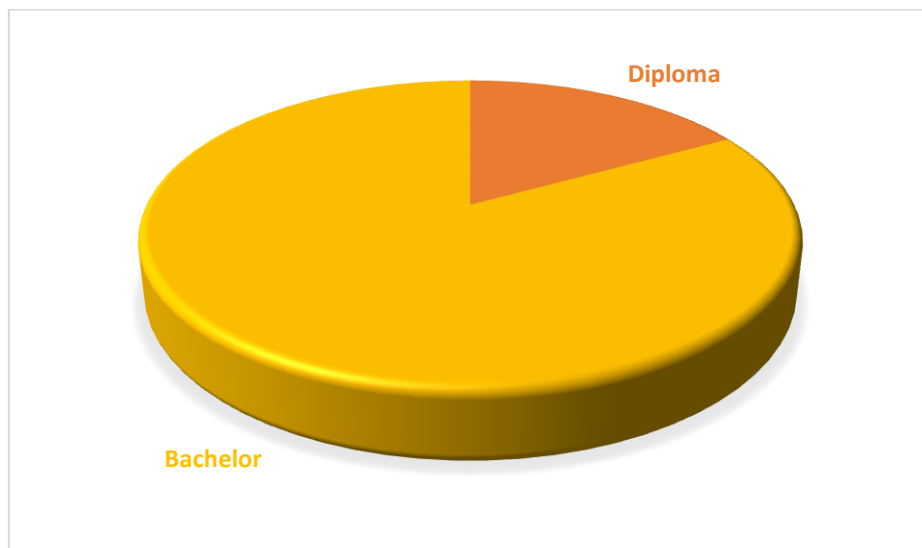


Figure 4.2. Distribution of the participants according to their qualifications.

The qualification variable, which is among the key variables in teachers' occupational stress and their motivational stimulation of disabled pupils, was statistically analyzed, and its results are provided in Table 4.4. The results in Table 4.4 revealed the relative dominance of the bachelor qualification in the sample distribution with 83.1% ( $N = 98$ ). Only 16.9% ( $N = 20$ ) of teachers have a diploma certificate. This is a good indicator, as the higher level of educational qualification is interested in teaching disabled pupils in special education institutes.

Table 4.5. Distribution of participants by type of disability they deal with

| Type of disability | N   | %   |
|--------------------|-----|-----|
| Hearing disability | 42  | 36  |
| Visual disability  | 27  | 23  |
| Mental disability  | 49  | 42  |
| Total              | 118 | 100 |

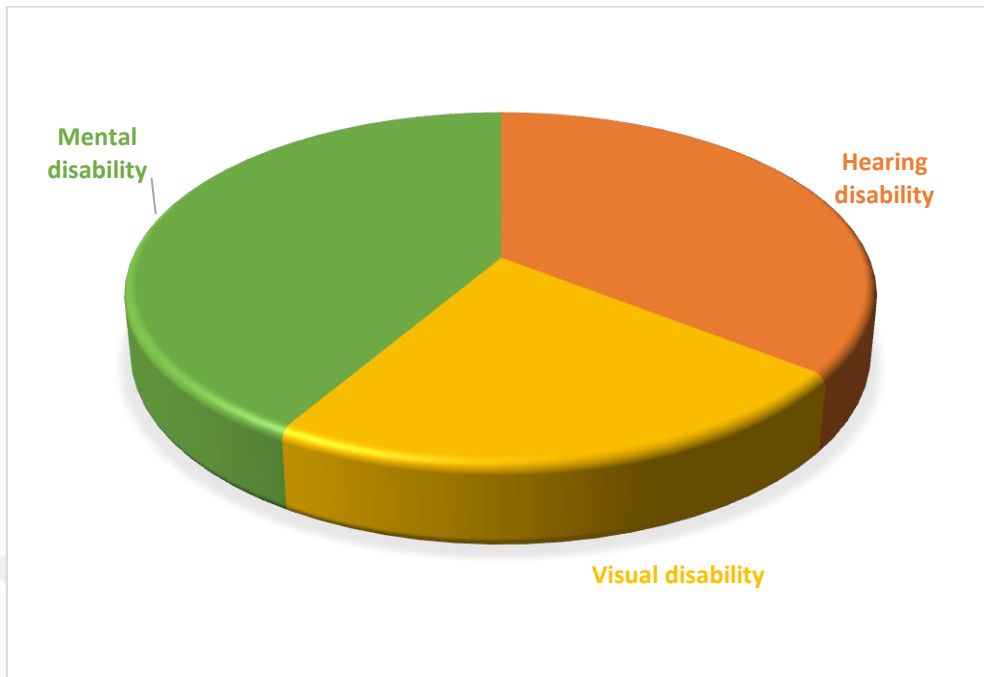


Figure 4.3. Distribution of participants by type of disability they deal with.

The distribution of the type of disability the teacher deals with is presented in Table 4.5. As given in Table 4.5, the research participants were statistically categorized based on the type of disability they were dealing with (the type they teach). The distribution comprises 35.6% hearing disability, 22.9% visual disability, and 41.5% mental disability.

#### 4.2. Findings Regarding the Occupational Stress of Teachers

Table 4.6. The mean score levels of the participants' views on occupational stress

|          | Subscale                      | $\bar{X}$ | Sd    |
|----------|-------------------------------|-----------|-------|
| $X_4$    | Nature of Job                 | 21.305    | 1.818 |
| $X_5$    | Financial Situation           | 14.627    | 2.007 |
| $X_6$    | Personal Treats               | 13.966    | 1.699 |
| $X_7$    | Curriculum                    | 7.110     | 1.920 |
| $X_8$    | Relations with Administration | 8.491     | 2.131 |
| $X_9$    | Relations with Colleges       | 8.440     | 1.989 |
| $X_{10}$ | Relations with Pupil          | 4.584     | 0.494 |
| $X_{11}$ | Parents cooperation           | 10.991    | 1.712 |
| $X_{12}$ | Rewards                       | 6.050     | 0.845 |
|          | Total Scale                   | 95.567    | 8.865 |

The results of occupational stress are presented in Table 4.6 It was seen that the least agreed-upon subscale was "Relations with Pupil", with (a mean score of 4.584 and a standard deviation of 0.494). Additionally, the most agreed-upon subscale was "Nature of Job" (a mean score of 21.305 and a standard deviation of 1.818). The rest of the items ranged between these two means. However, it was important to mention that the differences were not major for most items.

### 4.3. Finding Regarding the Motivational Stimulation of Teachers

Table 4.7. Average scores of participants' views on motivational stimulation

| Scale                          | N   | $\bar{X}$ | Sd    |
|--------------------------------|-----|-----------|-------|
| Motivational Stimulation scale | 118 | 226.796   | 5.843 |

The questionnaire elements for measuring the motivational stimulation of the participants were analyzed, and the results, in terms of mean and SD, were presented in Table 4.7 Generally, the mean was 226.796, with a standard division of 5.843.

### 4.4. Effects of Independent Variables on Dependent Variables

It was difficult to develop the best regression model before the advent of ready-made statistical packages for what they require. Calculation operations take time and effort, but now with the presence of this software, it has become easy. Find the best regression model out of the many that can be built that describe the relationship between the independent variables and the dependent variable, depending on the software package (SPSS) statistical package for social sciences. For example, a multiple regression model has been found for our study on  $X_{13}$ , and its symbol (Motivational Stimulation) represents (y) the dependent variable, where  $X_4, X_5, X_6, X_7, X_8, X_9, X_{10}, X_{11}, X_{12}$ : the independent variables.

In the beginning, we followed the usual method (Enter), i.e., entering all the variables into the form, noting that the package provides other options for choosing the best multiple regression model. We will deal with one of them later, which is (Stepwise method), a method proposed by Efroymson (1960) that suggests inserting the variables one

by one in contrast to the enter method (the exclusion of the variables that become ineffective in the presence of the rest of the variables). By returning to the usual method, we obtained the results summarized in the tables below:

Table 4.8. Model summary for regression

| Model | R                  | R Square | Adjusted R square | Std. Error |
|-------|--------------------|----------|-------------------|------------|
|       | 0.985 <sup>a</sup> | 0.970    | 0.968             | 1.042      |

a. Predictors: (Constant),  $X_{12}$   $X_9$   $X_2$   $X_7$   $X_{10}$   $X_5$   $X_6$

Table 4.9. The result of ANOVA for regression model

| Model |            | Sum of Squares | df  | Mean Square | F       | Sig.  |
|-------|------------|----------------|-----|-------------|---------|-------|
| 1     | Regression | 3876.612       | 8   | 484.576     | 445.702 | 0.000 |
|       | Residual   | 118.507        | 109 | 1.087       |         |       |
|       | Total      | 3995.119       | 117 |             |         |       |

a. Dependent Variable:  $X_{13}$

b. Predictors: (Constant),  $X_{12}$   $X_9$   $X_2$   $X_7$   $X_{10}$   $X_5$   $X_6$

Table 4.10. The results of coefficients

| Model                 | Unstandardized Coefficients |            | Standardized Coefficients | t      | Sig.  | Collinearity Statistics |        |
|-----------------------|-----------------------------|------------|---------------------------|--------|-------|-------------------------|--------|
| Independent variables | B                           | Std. Error | Beta                      |        |       | Tolerance               | VIF    |
| (Constant)            | 280.306                     | 15.31      |                           | 18.309 | 0     |                         |        |
| $X_2$                 | 15.176                      | 0.676      | 0.979                     | 22.448 | 0     | 0.143                   | 6.983  |
| $X_4$                 | -1.354                      | 0.629      | -0.421                    | -2.152 | 0.034 | 0.007                   | 140.77 |
| $X_5$                 | -0.434                      | 0.533      | -0.149                    | -0.813 | 0.418 | 0.008                   | 123.38 |
| $X_6$                 | 8.168                       | 1.268      | 2.375                     | 6.44   | 0     | 0.002                   | 499.86 |
| $X_7$                 | -5.094                      | 0.653      | -1.674                    | -7.804 | 0     | 0.006                   | 169.15 |
| $X_9$                 | -0.046                      | 0.051      | -0.016                    | -0.905 | 0.368 | 0.919                   | 1.089  |
| $X_{10}$              | -17.349                     | 2.069      | -1.469                    | -8.386 | 0     | 0.009                   | 112.78 |
| $X_{12}$              | -7.278                      | 0.983      | -1.053                    | -7.403 | 0     | 0.013                   | 74.412 |

a. Dependent Variable:  $X_{13}$

We note through the ANOVA analysis Table 4.9 the rejection of the tested hypothesis, where the (F) value ( $F_{cal} = 445.702$ ) conjugate statistic df. (8, 109) Furthermore,  $P < 0.001$  indicates the significance of the partial regression coefficients, meaning that the independent variables combined have a significant effect on the regression or that at least one of the model parameters has a significant effect. However,

the important for us, all model parameters are significant. For this reason, the significance of all parameters is tested in Each form separately until it is accepted. The question that arises is: What is the benefit, then, of the F-test procedure? Suppose we are going to test each parameter separately. In that case, the answer is: if we accept the hypothesis in the F-test, we will stop at this point and will not continue because we will reject the model altogether. If we reject the hypothesis, it is necessary for the command to test the significance of each partial parameter.

From Table 4.10 (coefficients), we note the insignificance of only two partial coefficients of the model and the significance of Six coefficients, respectively,  $X_2$ ,  $X_4$ ,  $X_6$ ,  $X_7$ ,  $X_{10}$ ,  $X_{12}$  at significance level  $\alpha < 0.05$ .

From Table 4.8, we note an increase in the value of the square of the multiple correlation coefficient (0.970), as well as the adjusted R square 0,968, and an increase in the value of the simple correlation coefficients between the dependent variable and all the independent variables. At the same time, a decrease in the partial correlation coefficients between the dependent and independent variables. This is one of the multiple linear correlation indicators. In order to verify the matter, the variance inflation factor (VIF) was calculated as shown in Table 4.10 It indicates that six variables exceed the value (10), which confirms that they are linked in a linear relationship. Namely, the variables  $X_4$ ,  $X_5$ ,  $X_6$ ,  $X_7$ ,  $X_{10}$ ,  $X_{12}$ , and if we look in-depth at the essence of these Variables, we find logic in the multiplicity between these variables; for example, the variable  $X_4$  refers to the Nature of Job. It is normal to be associated with the variable  $X_5$ , the Financial Situation. The first part depends on calculating the second, as well as  $X_6$ , the Personal Treats of Learners is related to the variable  $X_7$ , the curriculum. By referring to the correlation matrix, we found that the simple correlation coefficient between  $X_4$  and  $X_5$  ( $r = 0.366$ ) is significant at ( $P < 0.01$ ), also the simple correlation coefficient between  $X_5$  and  $X_6$  ( $r = 0.668$ ) is significant at ( $P < 0.01$ ).

So, the stepwise method was chosen, which is the easiest method in multiple linear regression to reach the best regression model. This method is a development of the forward selection method, and the forward deletion strategy depends on entering the independent variables of the model one by one. So, the first step begins with calculating the correlation coefficient. Then, the simple or correlation matrix between the dependent variable and the

independent variables and the independent variable with the highest correlation coefficient with the variable ( $y$ ) is chosen from among all the variables.

Table 4.11. Results of stepwise method

| Model | R      | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|--------|----------|-------------------|----------------------------|
| 1     | 0.536a | 0.287    | 0.281             | 4.95514                    |
| 2     | 0.757b | 0.572    | 0.565             | 3.85440                    |
| 3     | 0.912c | 0.833    | 0.828             | 2.42275                    |
| 4     | 0.975d | 0.951    | 0.950             | 1.31177                    |
| 5     | 0.985e | 0.970    | 0.968             | 1.03935                    |

a. Predictors: (Constant),  $X_{11}$

b. Predictors: (Constant),  $X_{11}$ ,  $X_1$

c. Predictors: (Constant),  $X_{11}$ ,  $X_1$ ,  $X_3$

d. Predictors: (Constant),  $X_{11}$ ,  $X_1$ ,  $X_3$ ,  $X_{10}$

e. Predictors: (Constant),  $X_{11}$ ,  $X_1$ ,  $X_3$ ,  $X_{10}$ ,  $X_4$

f. Dependent Variable:  $X_{13}$

According to the analysis, we found five models of regression. First, where we found that the highest correlation coefficient of the dependent variable ( $X_{13}$ : Motivational Stimulation) is with the independent variable ( $X_{11}$ : Parents cooperation), and it is necessary to note that this method needs to determine the level of significance for entering and excluding variables from the model, and the level of significance for entering the variables must be less than the level of significance for exclusion, where we set the level of significance for the entry  $\alpha = 0.05$  and for the exclusion with  $\alpha = 0.1$ . After that, its statistic is calculated (F) for the model that If it is significant, then its t-statistic is calculated for each parameter of the model, and when calculating the first parameter, there is no need to calculate his t-statistic because the F-statistic does the job considering that we only have one parameter until this stage. In the next stage, we enter the second independent variable, which has the highest partial correlation coefficient with the dependent variable. Then we do the aforementioned tests.

Table 4.12. Result of ANOVA for the effects of each model of regression

| Model |            | Sum of Squares | df  | Mean Square | F       | Sig.               |
|-------|------------|----------------|-----|-------------|---------|--------------------|
| 1     | Regression | 1146.921       | 1   | 1146.921    | 46.711  | 0.000 <sup>b</sup> |
|       | Residual   | 2848.198       | 116 | 24.553      |         |                    |
|       | Total      | 3995.119       | 117 |             |         |                    |
| 2     | Regression | 2286.630       | 2   | 1143.315    | 76.958  | 0.000 <sup>c</sup> |
|       | Residual   | 1708.489       | 115 | 14.856      |         |                    |
|       | Total      | 3995.119       | 117 |             |         |                    |
| 3     | Regression | 3325.972       | 3   | 1108.657    | 188.878 | 0.000 <sup>d</sup> |
|       | Residual   | 669.147        | 114 | 5.870       |         |                    |
|       | Total      | 3995.119       | 117 |             |         |                    |
| 4     | Regression | 3800.676       | 4   | 950.169     | 552.190 | 0.000 <sup>e</sup> |
|       | Residual   | 194.442        | 113 | 1.721       |         |                    |
|       | Total      | 3995.119       | 117 |             |         |                    |
| 5     | Regression | 3874.132       | 5   | 774.826     | 717.274 | 0.000 <sup>f</sup> |
|       | Residual   | 120.987        | 112 | 1.080       |         |                    |
|       | Total      | 3995.119       | 117 |             |         |                    |

a. Dependent Variable:  $X_{13}$

b. Predictors: (Constant),  $X_{11}$

c. Predictors: (Constant),  $X_{11}$ ,  $X_1$

d. Predictors: (Constant),  $X_{11}$ ,  $X_1$ ,  $X_3$

e. Predictors: (Constant),  $X_{11}$ ,  $X_1$ ,  $X_3$ ,  $X_{10}$

f. Predictors: (Constant),  $X_{11}$ ,  $X_1$ ,  $X_3$ ,  $X_{10}X_4$

As seen from the result in Table 4.12, the predictors in the first model are Constant. The independent variable ( $X_{11}$ : Parents cooperation), while in the second model, there were two independent variables ( $X_{11}$ ,  $X_1$ ), in model three, there were three independent variables ( $X_{11}$ ,  $X_1$ ,  $X_3$ ). In comparison, in model Four, there were four independent variables ( $X_{11}$ ,  $X_1$ ,  $X_3$ ,  $X_{10}$ ), And in model five, there were five independent variables ( $X_{11}$ ,  $X_1$ ,  $X_3$ ,  $X_{10}$ ,  $X_4$ ).

The first chosen variable in the first step was  $X_{11}$  because it has the highest simple correlation coefficient with the dependent variable  $X_{13}$ .

$$(\text{Model 1}) \hat{y} = -0.536X_{11} \text{ (standardized value)}$$

The F statistic for model 1 is  $F = 46.711$ , as shown in Table 4.12 it is significant that is P-value ( $sig = 0.000$ ), and the t statistic ( $t = 6.836$ ) for the model parameter is significant ( $Sig = 0.000$ ), as shown in Table 4.13 Parameter explains that for every one unit increase in the population ratio for the occupational stress in parent cooperation, it will reduce the total motivational stimulation for disabled pupils by 0.536.

In the second step, the independent variable  $X_1$ , which has the highest partial correlation coefficient with the dependent variable  $Y$ , was entered ( $r = -0.368$ ). From the variable chosen in the previous step, we obtained the following regression model:

$$(\text{Model 2}) \hat{y} = -0.687X_{11} + 0.555X_1$$

The previous mode 2  $\beta_2$  parameter explains that an increase in the Years of Experience rate one unit will increase the teachers' motivational stimulation of disabled pupils by 0.555 on average. The F-statistic from the ANOVA table showed the significance of the model and that both parameters of the models ( $\beta_1, \beta_2$ ) are significant.

Table 4.13. Result of coefficients for each model of regression

| Model | Unstandardized Coefficients |            | Standardized Coefficients |        | t       | Sig.  |
|-------|-----------------------------|------------|---------------------------|--------|---------|-------|
|       | <i>Beta</i>                 | Std. Error | <i>Beta</i>               |        |         |       |
| 1     | (Constant)                  | 246.896    | 2.976                     |        | 82.962  | .000  |
|       | $X_{11}$                    | -1.829     | 0.268                     | -0.536 | -6.835  | .000  |
| 2     | (Constant)                  | 243.809    | 2.342                     |        | 104.121 | .000  |
|       | $X_{11}$                    | -2.345     | 0.216                     | -0.687 | -10.840 | .000  |
|       | $X_1$                       | 4.808      | 0.549                     | 0.555  | 8.759   | .000  |
|       | (Constant)                  | 241.987    | 1.478                     |        | 163.704 | .000  |
| 3     | $X_{11}$                    | -3.929     | 0.181                     | -1.151 | -21.741 | .000  |
|       | $X_1$                       | 9.427      | 0.489                     | 1.089  | 19.261  | .000  |
|       | $X_3$                       | 5.251      | 0.395                     | 0.791  | 13.307  | .000  |
|       | (Constant)                  | 212.460    | 1.950                     |        | 108.978 | .000  |
| 4     | $X_{11}$                    | -4.894     | 0.114                     | -1.434 | -43.006 | .000  |
|       | $X_1$                       | 13.120     | 0.346                     | 1.515  | 37.929  | .000  |
|       | $X_3$                       | 8.677      | 0.297                     | 1.307  | 29.218  | .000  |
|       | $X_{10}$                    | 5.748      | 0.346                     | 0.487  | 16.609  | .000  |
|       | (Constant)                  | 216.837    | 1.633                     |        | 132.758 | .000  |
| 5     | $X_{11}$                    | -5.553     | 0.121                     | -1.627 | -46.074 | .000  |
|       | $X_1$                       | 16.158     | 0.459                     | 1.866  | 35.185  | .000  |
|       | $X_3$                       | 10.189     | 0.298                     | 1.534  | 34.154  | .000  |
|       | $X_{10}$                    | 8.385      | 0.421                     | 0.710  | 19.904  | .000  |
|       | $X_4$                       | -0.839     | 0.102                     | -0.261 | -8.246  | 0.000 |

a. Dependent Variable:  $X_{13}$

In the third step, variable  $X_3$  was introduced, The Type of Disability Dealing with, as the value of the correlation coefficient ( $r = -0.234$ ), which is the third largest partial correlation coefficient with the dependent variable, and its value is significant, and it is linked in an inverse relationship with the dependent variable, so we obtained the model (3)

$$(\text{Model 3}) \hat{y} = -1.151X_{11} + 1.089X_1 + 0.791X_3 .$$

Moreover, that means that an increase in the type of disability dealing with rate by one unit will increase the teachers' motivational stimulation of disabled pupils by 0.791 on average. The F-statistic from the ANOVA table showed the significance of the model and that the parameters of the model ( $\beta_1, \beta_2, \beta_3$ ) are significant.

The following independent variable entered in the fourth stage ( $X_{10}$ ) is the Stress of Relations with Pupil, and it has a positive effect and its coefficients are significant.

$$(\text{Model 4}) \hat{y} = -1.434X_{11} + 1.515X_1 + 1.307X_3 + 0.487X_{10} .$$

Furthermore, it means that an increase in the stress of the Relations with Pupils rate by one unit will lead to an increase in the teachers' motivational stimulation of disabled pupils by 0.487 on average. The F-statistic from the ANOVA table showed the significance of the model and that the model's parameters ( $\beta_1, \beta_2, \beta_3, \beta_4$ ) are significant.

The last independent variable with the highest partial correlation coefficient with the dependent variable with the stability of the effect of all the independent variables entered in the previous stages is the Stress of Nature of Job ( $X_4$ ), which had an opposite effect with the opposite the dependent variable. This sign is logical in its effect. Furthermore, we note from the p-value ( $<0.001$ ) associated with the t-statistic that the parameter of the variable  $X_4$  was shown to be significant at a significance level = 0.000. The F-statistic from the ANOVA table showed the significance of the model and that the model's parameters ( $\beta_1, \beta_2, \beta_3, \beta_4, \beta_5$ ) are significant.

$$(\text{Model 5}) \hat{y} = -1.627X_{11} + 1.866X_1 + 1.534X_3 + 0.710X_{10} - 0.261X_4 .$$

It will reduce the total motivational stimulation for disabled pupils by 0.261.



## 5. DISCUSSION AND CONCLUSION

This research was carried out to investigate the effect of Demographic and teacher's occupational stress on the motivational stimulation of disabled pupils in special education institutes. In order to achieve the main objective of this study, a survey was administered at five different institutes for special education in the center of Duhok city in the north of Iraq. A total of 118 valid questionnaires were successfully collected and analyzed. Furthermore, several analyses were applied to observe the existence of statistically significant differences and/or possible correlations whenever applicable. The questionnaire utilized in this study included three parts: The first part to collect data about demographic variables, the second part to measure occupational stress (51) item, and the third part to measure motivational stimulation, which consisted (70) items.

The analysis of demographic variables did not reveal any odd or abnormal results. However, a few observations from the demographic variable analysis were worthy of discussion. As shown in Table 4.3, a higher percentage of teacher's participants who have experience between five and ten years 51.7% was observed. This is generally explained by the fact that these institutes are modern in providing special education services to students with disabilities. Furthermore, opportunities for appointment in these public institutions have become limited due to the economic crisis that Iraq has been experiencing in recent years, which has led to a reduction in appointment opportunities.

The statistical analysis for the occupational stress scale, presented in Table 4.6, revealed that the highest weight was observed for "Neutral of Job" stress. Nonetheless, the lowest weight was observed for the stress of "Relations with Pupils", which requires another study to investigate its psychological and educational implications. Moreover, some teachers may think that if students are not motivated and ready to learn, they will not be able to motivate them anyway.

After analyzing the Motivational Stimulation Scale's data, it was observed that all the questionnaire elements were closely relevant in terms of mean weights, as given in  $\beta$  Table 4.7, which was supported by the studies of Al-Zoubi (2003) and Ashour (2006), who indicated that the degree of motivational stimulation of disabled pupils is high. On the

other hand, it was found from Tables 4.8, Table 4.9 and Table 4.10 that there is a significant relationship between eight independent variables with the dependent variable, and the results showed that the effect of these variables is statistically significant.

Similar statistically significant effects were observed in using stepwise for regression analyses. Again, this confirms the above observation relevant to the effect of the years of experience, type of disability dealing with, neutral of job, relation with pupils, and parents cooperation. This result is different from the results of Ashour (2006), which indicated no significant differences in motivational stimulation according to experience and type of disability the teacher is dealing with.

Finely, based on the findings of this study and using Multiple linear regression, it can be said that there is a possibility to predict the level of motivational stimulation for students with disabilities in the light of five independent variables, two of which are demographic variables (years of experience and the type of disability that the teacher deals with, and three independent variables within occupational stress, which are the nature of work stress, and the stress of relationships With the pupils, and finally the stress of parental cooperation.

According to the research results, we can conclude the following:

1. The significance of the variables of years of experience and the type of disability that the teacher deals with are as influential as the demographic variables in provoking the motivation of students with disabilities. The total number of women and its relationship positively correlate with the total fertility rate.
2. The morality of the variables of the nature of work, relations with students and parents' cooperation impact the variance of motivational arousal for students with disabilities as important variables in occupational stress.
3. The possibility of using multiple linear regression as a statistical method in predicting the variation of motivational stimulation in light of several independent variables (demographic and work stress variables).

Therefore, the researcher suggest taking advantage of the current research results by special education institutions and conducting more educational studies using multiple linear regression model.

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## EXTENDED TURKISH SUMMARY (Geniřletilmiş Türke zet)

### ENGELLİ ĞRENCİLERİN MOTİVASYONLARININ ADIMSAL REGRESYON YÖNTEMİYLE İNCELENMESİ

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Bu alışmada, demografik deėişkenler, ğretmenlerin mesleki stresi ve engelli ğrencilerin motivasyonel uyarımı arasındaki ilişki araştırılmıştır. alışma Irak'ın kuzeyindeki Duhok şehrinde bulunan beř özel eğitim enstitüsünde görev yapan 118 ğretmen ile gerçekleştirilmiştir. alışmada verilerin toplanması için “Mesleki Stres” ve “Motivasyonel Uyarım” ölekleri kullanılmıştır. Verilerin analizleri IBM SPSS 25 paket programı kullanılarak yapılmıştır. Sonuçlar, Deneyim Yılı, ğretmenin Uėrařtığı Engel Türü, İşin Niteliėi, ğrencilerle İliřkiler ve Veli ile ilişkiler deėişkenlerine göre Motivasyonel Uyarılda istatistiksel olarak anlamlı farklılıklar olduğunu göstermiştir. Ayrıca, alışmada incelenen deėişkenler aracılığıyla Motisvasyonel Uyarılma derecelerindeki varyansı tahmin etmek için beř kademeli oklu doğrusal regresyon modeli bulunmuřtur.

**Anahtar kelimeler:** Mesleki stres, Motivasyonel uyarılma, ğretmenler, Özel eğitim, Engelli ğrenciler.

## 1. GİRİř

Sosyoloji, psikoloji, eğitim, biyoloji ve ekonomi gibi eřitli bilgi bilimlerindeki alışmalar ve arařtırmalar, tasarım aşamasından başlayarak ve karar verme aşamasının sonuna kadar, verilerini toplarken veya analiz ederken büyük ölüde istatistiksel kavramlar kullanılır. İstatistik biliminin artık verileri tanımlamak veya topluluklar üzerindeki örneklerden ıkarımlar yapmakla sınırlı olmadığı yani sadece bilimsel arařtırmalar için bir

araç değil, fenomenleri açıklanması için sistematik yolar sağlamaktadır (Allam, 2003). Böylece araştırmacı, fenomende yer alan değişkenler arasındaki ilişkileri bulabilir, aralarındaki ilişki derecesini belirleyebilir ve analitik yöntemlerle uygun istatistik metoduyla fenomenin nedensel faktörlerine ulaşmak için ilişkilerin tahmin ve analizinde fayda sağlayan doğru göstergelere ulaşabilir. Çoğu araştırma ve çalışmada, değişkenler arasındaki ilişki, bu ilişkiyi tanımlayan bir eşitlik sonucuna varmak için analiz edilir. Örneğin, iki değişken arasındaki ilişkiyi incelemeye odaklanıldığını varsayalım. Bu durumda, korelasyon analizi yöntemini kullanılmaktadır. Bununla birlikte, bir değişkenin başka bir değişken üzerindeki etkisini incelemeye odaklanırsa, regresyon analizi yöntemini kullanılmaktadır (Al-Shafe'i, 2014).

Çoklu doğrusal regresyon analizi, birkaç bağımsız nicel değişkenin nicel fonksiyon üzerindeki etkisinin incelenmesi ve analizi ile ilgilidir. Buna karşılık, çoklu doğrusal regresyon modeli, tahmin amacıyla tahmini modelde benimsenen modelin parametrelerini tahmin ederek gelecekteki değerleri tahmin etmek için kullanılır (Kadhim, 2009).

Regresyon analizi, biri bağımlı değişken (yanıt değişkeni) ve açıklayıcı değişken olarak adlandırılan bir veya daha fazla değişken arasındaki ortalama ilişkinin matematiksel bir ölçüsü olarak tanımlanır. Bu tür ilişkilere genellikle regresyon modelleri denir (Al-Abadi, 2011).

Bu çalışmada, öğretmenin engelli öğrencilerin motivasyonunu uyarmasını etkileyen en önemli etkileri içeren çalışmanın uygulamalı bir örneği benimsenmiştir. Ayrıca, çoklu regresyon modeli, motivasyonun uyarılmasını tahmin etmek için bir araç olarak kullanılmıştır.

### 1.1. Çalışmanın Önemi

Doğrusal regresyon analizi, tüm uygulamalı alanlarda verilerin optimal kullanımı yoluyla araştırma sonuçlarını iyileştirmek için çıkarım doğruluğunu içeren gelişmiş bir istatistiksel yöntem olarak kabul edilir. İngiliz bilim adamı Galton Francis, belirli biyolojik değişkenler arasındaki bazı ilişkileri keşfetmek için 1886'da biyolojik uygulamalarda regresyon kavramını ilk kullanan kişiydi. Genellikle, ilişkide benimsenen ölçü birimlerinde, iki veya daha fazla değişken arasındaki ortalama ilişkinin matematiksel bir

ölçüsü olarak tanımlanır. Bu tür bir ilişki genellikle bir regresyon modeli olarak adlandırılır (Osman, 2016).

Çoklu regresyon yöntemi, eğitim ve psikoloji bilimlerinde yaygın olarak kullanılmaktadır. Fenomeni etkileyen birçok bağımsız değişkenin sayısını mümkün olan en küçük sayıya indirmeyi amaçlamaktadır. Böylece, bağımlı değişkenin değerlerindeki varyasyon için büyük bir açıklama yüzdesine sahip olur. Böylece birkaç bağımsız değişken içeren bir regresyon modeli aracılığıyla bağımlı değişkenin öngörücü gücünü artırır (Assas, 2019). Genel olarak, çalışma eğitim ve psikolojik araştırmalarda yaygın olarak kullanılan istatistiksel bir yöntemle ilgilenmiştir. Teorik yön, açıklanan varyansın oranını ve örneklem büyüklüğünün ilerici regresyon modelinin açıklanan varyansının oranı üzerindeki etkisini belirlemede kademeli çoklu regresyon modelinin etkinliğinin gösterilmesine katkıda bulunur.

Çalışma ayrıca, bağımlı ve bağımsız değişkenler için verilerin kullanıldığı ve R belirleme katsayısına (çoklu regresyon modeli ile açıklanan varyansın oranı) ulaşmak için istatistiksel uygulamanın yapıldığı bir uygulama yönü ile de ele alınmıştır. Uygulanan taraf aracılığıyla, çoklu doğrusal regresyon modeli kullanılırken bağımlı değişkenin varyansını etkileyen faktörler belirlenmiştir.

## 1.2. Çalışmanın Amacı

Bu çalışma, engelli öğrenciler için öğretmenlerin motivasyonel stimülasyon varyasyonunu etkileyebilecek faktörleri tahmin etmede istatistiksel bir yöntem kullanmaya çalışmaktadır. Bu doğrultuda araştırma amaçları aşağıdaki sorulara cevap verilerek özetlenmiştir:

1. Bağımsız değişkenler olarak demografik faktörler, bağımlı değişkenin varyansını, özel eğitim kurumlarında engelli öğrenciler için motivasyonun uyarılmasını ne ölçüde etkilemektedir?
2. Bağımsız bir değişken olarak mesleki stres, bağımlı değişkenin varyansını, özel eğitim kurumlarında engelli öğrenciler için motivasyonun uyarılmasını ne ölçüde etkiler?
3. Demografik değişkenler ve mesleki stres ile engelli öğrenciler için motivasyonun uyarılmasını tahmin etmek mümkün mü?

## 2. MATERYAL VE YÖNTEM

Bu araştırmanın evreni, Irak'ın kuzeyindeki Duhok Şehrindeki beş özel halk eğitim merkezinde çalışan 172 öğretmenden oluşmaktadır.

Araştırmanın örneklemini ise rastgele seçilen ölçek formlarını dolduran 130 öğretmen oluşturmaktadır. Doğrusal bir regresyon modeli oluşturmak için gereken örneklem büyüklüğünün 50'den daha büyük veya bağımsız değişkenlerin sayısının sekiz katı olması gerekliliği öne sürülmektedir (Tabachnick ve Fidell, 2013). Beş engelli öğrenci enstitüsünden 130 öğretmene ulaşılmıştır. Ancak 12 ölçek formu doğru doldurulmadığından araştırma dışı bırakılmış ve 118 öğretmenden elde edilen ölçek formları değerlendirilmiştir.

### 2.1. Veri Toplama Aracı

Araştırmada, öğretmenlerden istatistiksel veriler elde etmek için Ashour (2006) tarafından hazırlanan ölçek kullanılmıştır. Araç üç bölümden oluşmaktadır: Birincisi, demografik değişkenler hakkında bilgi toplamaktır (Deneyim, Eğitim Yeterliliği ve Başa Çıkılan Handikap Türü). Aracın ikinci bölümü, 51 maddeden oluşan ve dokuz boyut veya alt ölçek üzerine dağıtılan "Mesleki Stres Ölçeği" dir. Anketin üçüncü bölümü, öğretmenlerin, engelli öğrenciler arasında motivasyonel stimülasyon algıları hakkında ki 70 maddeden oluşmaktadır.

Ölçek prototipi kullanılarak toplanan verilerin uygunluğunu belirlemek için araştırmacı, beş uzman görüşü alarak görüş geçerliliğine güvenmiştir. Hepsi, Mesleki Stres ve Motivasyonel uyarılmış ölçek kullanılarak toplanan verilerin uygunluğu konusunda hemfikirdir.

Ölçeğin iç tutarlılığını gösteren Cronbach Alpha katsayısı, Mesleki Stres ölçeği için 0,911 ve Motivasyonel Stimülasyon Ölçeği için 0,928 olarak bulunmuştur. Böylece ölçeğin güvenilir ve geçerli olduğu kabul edilmiştir.

Ölçek formlarından elde edilen verilerin analizleri IBM SPSS 25.0 paket yazılımı kullanılarak gerçekleştirilmiştir.

## 2.2. Mesleki Stres

Öğretmenler günlük yaşamlarında birçok zorluk ile karşı karşıya kalmaktadır. Bir öğretmenin çalışması fiziksel ve zihinsel bir zorluk olarak kabul edilmektedir. Bu nedenle, öğretmenin sınıftaki günlük çalışmalarında, çabalarında ve aile yaşamında çok fazla enerji kullanması gerekir. Öğretmen için rutin olan bu eğilim, öğretmen üzerindeki baskıyı önemli ölçüde artırır. Sonuç olarak, çalışma sonsuz memnuniyet ve tatmin olarak değil, gerginlik, kızgınlık ve aşağılanma kaynağı olarak görülür (Kaur, 2011). İnsan faaliyetlerinin tüm yönleri stres yarattığından, stres modern toplumlarda profesyonel çalışmadaki en yaygın fenomenlerden biridir (Aremu ve Adenegan, 2013; İsmail, 2014).

Mesleki stres, öğretmenlik mesleğinde, esas olarak artan mesleki karmaşıklıklar ve bireyler üzerindeki artan ekonomik baskı nedeniyle giderek yaygınlaşmıştır. 2000 yılında yayınlanan mesleki stres ölçeği raporunda, demografik faktörlerin ve iş türünün etkisinin analizi sonucunda, öğretmenlerin% 41,5'inin kendilerini 'yüksek stresli',% 58,5'inin 'düşük stresli' bir kategoriye girdiği, öğretmenlerin% 36'sının stresin etkilerini her zaman veya çoğu zaman hissettiğini tespitinde bulunulmuştur. Bu endişe verici bir durumdur ve gözle görülür bir şekilde okul öğretmenlerinin çok yüksek bir oranda istifa etmelerinin veya stresle mücadele etmek için profesyonel yardım almalarının en belirgin nedenidir (Kaur, 2011).

Robbins ve Judge (2012) stresi, bireyin çevresel baskılara karşı geliştirdiği hoş olmayan bir psikolojik süreç olarak tanımlamışlardır. Robbins et al (2013) benzer şekilde stresi, işyerindeki olağanüstü talepler, fırsatlar ve kısıtlamalar nedeniyle çalışanların olumsuz bir tepkisi olarak tanımlamaktadır. Ayrıca mesleki stres, bireyin herhangi bir organizasyonda kendisine zararlı veya tehdit edici hissettiği zorlu bir durumla veya herhangi bir kısıtlamayla karşı karşıya kalan zihinsel durumu olarak tanımlanır (Nagra, 2013).

Organizasyonlar, dünya ekonomisinde yılda yaklaşık 2,5 trilyon dolarlık önemli bir ekonomik maliyet taşıyorlar. Bununla birlikte, çalışma ortamı söz konusu olduğunda, en yaygın zihinsel bozukluklar depresyon, anksiyete ve stresi içerir. Hastalık, devamsızlık ve düşük üretkenlik büyük maliyetlere sebep olmaktadır (Dewe ve Cooper, 2017).

Chan, Chen ve Chong (2010), profesyonel stresi, bireylerin eforu, aşırı çalışması ve aşırı stresle başa çıkamadıkları endişesi üzerine büyüyen hoş olmayan bir duygu olarak tanımlamışlardır. Öğretmen stresi, öğretmen olarak eylemlerinin bazı yönlerinden kaynaklanan öfke, kaygı, hayal kırıklığı, depresyon ve sinirlilik gibi olumsuz duyguları olan öğretmenlerde yaşanır (Kyriacou, 2001)

### 2.3. Motivasyonel Stimülasyon

Uluslararası organizasyonlar, hükümetler ve kuruluşlar, ihtiyaçları ve engelleri ne olursa olsun, her çocuk için eğitimin önemini vurgulamışlardır. 1990 yılında Jomtien'de düzenlenen Dünya Herkes İçin Eğitim Konferansı (EFA), tüm çocukların okula gitmesi ve onlara iyi eğitim verilmesi üzerinde durulmuştur (Ngonyan, 2010).

Literatürde, motivasyon bireyin öğrenmenin gerçekleşmesi için gerekli çaba ve aktiviteyi göstermesini sağlayan motive edici güç olarak tanımlanmıştır. Bu nedenle, öğretmen özel ihtiyaçları olan öğrenciler arasında öğrenme motivasyonunu uyandırmak için gerekli becerilere sahip olmalıdır. Öğretmen, sınıfta öğrenme motivasyonu eksik olan bazı öğrencileri bulacaktır, çünkü uzun bir başarısızlık geçmişi veya kendini tatmin etme eksikliği vardır. Bazıları için motivasyon eksikliği, öğretim sürecinde öğretmenlerin karşılaştığı birçok soruna yol açmaktadır. Bu nedenle öğretmenler eğitim sürecine dahil olur ve öğrencilerinin öğrenmeye yönelik motivasyonunu teşvik etmek için çalışır (Clarendon ve Arlington, 1999).

Davranış bilimi, özel ihtiyaçları olan öğrencilerin öğrenme motivasyonunun bireysel farklılıkların en önemli nedenlerinden biri olduğunu doğrulamaktadır (Al-Jassar, 2000). Birçok çalışma, motivasyonun öğrenme arzusunu arttırdığını ve güçlü bir motivasyonun dikkat konsantrasyonunda bir artışa yol açtığını ve yorgunluğun ortaya çıkmasını geciktirdiğini doğrulamıştır (Al-Hayali, 1990). Motivasyon, bireyin kıskançlığını kışkırtan ve bir sonuca ulaşmaya veya fizyolojik ve psikolojik olarak belirli bir ihtiyacı karşılamaya motive eden içsel bir rol modelidir (Al-Qaridoti, 2000).

Motivasyon, özel gereksinimli öğrencilerin elde etmek veya edinmek istedikleri bilgi, anlayış ve becerileri elde edip edemeyeceklerini belirleyen faktörlerden birini

oluşturan bir araçtır. Böylece motivasyonunu teşvik eden kişi etkili öğrenmeye ulaşır (Kutner et al., 2005).

Öğrenme motivasyonunu uyandırmak, öğrencilerin öğrenme arzusunu uyandırmak ve onları bunu yapmaya motive etmek anlamına gelir. Öğrencinin öğrenme motivasyonunu teşvik etmenin belirli bir yolu yoktur. Dahası, Lawrence (1997), tüm çocukların tekerlekli sandalyede, yerine getirmeleri gereken görevin yaşamlarıyla ilgili olduğunu fark ettiklerinde öğrendiklerini bulmuştur. Ayrıca, öğrenci motivasyonunu motive etmek öğretmenin sorumluluğundadır. Çünkü öğretmenin coşkusu öğrenmeyi başarmak için gereklidir. Öğretmenin öğrencileri motive etmek için yabancı eylemler ve araçlar gerçekleştirmesini gerektirebilir (Strickland, 1989).

## 2.4. Özel Eğitim

Özel eğitim, her çocuğun bireysel ihtiyaçlarını tanımlamayı ve bu ihtiyaçları karşılamak için çalışan öğrenme koşullarını sağlamayı amaçlamaktadır. Belki de bu çocuk kategorisindeki öğretmenlerin karşılaştığı zorluklar, özel eğitim müfredatı ile ilgili olanlar ve motivasyon ve en önemli psikolojik kavramlar gibi ana unsurlardan neler içerdiği.

Özel eğitimdeki eğitim kadrosu, öğretmenlerin mesleklerinde kalmalarına yardımcı olan en kritik faktörleri göstermeyi amaçladığı için birçok araştırmacının dikkatini çekmiştir (Anderson, 2002). Sonuçlar, öğretmenlerin mesleklerinde kalmalarına yardımcı olan en kritik faktörlerin, öğretmenleri destekleyen okullarda çalışmak olduğunu göstermiştir.

Al-Imam (2002), öğretmenlerin özel ihtiyaçları olan öğrencileri öğrenmeye motive etme algılarını değerlendirmeyi amaçlamıştır. Çalışmasında, öğretmenlerin özel ihtiyaçları olan öğrencileri motive etmek için kullandıkları bazı yöntemlerin eksikliğini tespit etmiştir.

Al-Kukhan (1997) tarafından yapılan bir başka çalışma, gelirin stresin ilk kaynağını işgal ettiğini, bunu öğrencinin özellikleri, ebeveynlerin yönetimle ilişkileri, müfredat, mesleki gelişim, sosyal statü, çalışma koşulları, iş yükü ve meslektaşlarıyla ilişkileri izlediğini göstermiştir. Sonuçlar ayrıca, öğretmenler için cinsiyet, yaş, eğitim düzeyi ve eğitim deneyimi değişkeni nedeniyle toplam stres kaynaklarının düzeyinde bir fark olduğunu göstermiştir.

Matalqa (1995) tarafından hazırlanan Sharjah Emirliği'ndeki Arap özel okullarındaki işçileri bu okullarda çalışmayı seçmeye motive eden motivasyonlar başlıklı bir çalışmada, ücretler, maaşlar, konut yardımları veya çocuk eğitimi gibi maddi nedenler olduğunu göstermiştir. Bununla birlikte, işin doğası, medeni durum, yaş grubu, eğitim niteliği ve cinsiyet ve motiflerin türleri açısından anlamlı bir farklılık saptanmamıştır.

Ayrıca, Amman ilindeki zihinsel engelliler merkezlerinde çalışan kadın öğretmenlerin iş doyumu üzerine yapılan bir çalışmada (Yahya, 1994), çalışma örnekleminin yüzde kırkdokuzu (%49) işten memnuniyet gösterdiği tespit edilmiştir. Ayrıca medeni durum, yaş, deneyim ve eğitim düzeyi açısından anlamlı bir farklılık saptanmamıştır.

Ürdün'de özel eğitim öğretmenlerinin karşılaştığı mesleki stres üzerine yapılan bir çalışmada, zihinsel engelli öğretmenlerinin karşılaştığı stres kaynaklarının, ebeveynlerle ilişkiler, öğrencinin özellikleri, engellilerle çalışma koşulları ve yönetim, meslektaşlar, müfredat, araçlar ve öğretim yardımcıları ile ilişkili olduğu tespit edilmiştir (Al-Faouri, 1990).

## 2.5. Çoklu Doğrusal Regresyon Modelleri

Regresyon, örneklem büyüklüğünden etkilenen, bağımlı değişkenin bağımsız değişkenler tarafından tahmin ediliği ve her bir bağımsız değişkenin bağımlı değişkenin varyansının hesaplanmasında katkıda bulunduğu istatistiksel yöntemlerden biridir. Al-Ghamdi (2013) ve Sabeel (2015), regresyon modellerinin doğruluğunun örneklemin boyutundan büyük ölçüde etkilendiğini belirtmiştir. Böylece, regresyon modelinin öngörücü yeteneği ve araştırmacının kararının doğruluğu veya güvenilirliği etkilenir. Bağımlı ve bağımsız değişkenler arası ilişkinin şeklini belirlemek için bir regresyon modeli oluşturulacağı zaman değişkenlerin en uygun boyutu belirlenir. Bu nedenle araştırmacı, bağımsız değişkenlerin bağımlı değişkenin açıklayıcı varyansına katkısını kademeli çoklu regresyon modelini kullanarak farklı boyutlarda araştırma fikrini kristalize etmiştir (Assas, 2019).

Al-Shafe'i (2014), çoklu regresyonu, bir bağımlı değişkenin birden fazla bağımsız değişken tarafından tahmin etmek için kullanılan regresyon olarak tanımlar. Ayrıca, İsmail

(2016), aşamalı çoklu regresyonu, seçim sürecinin herhangi bir adımında daha önce çoklu regresyon modeline girilen bağımsız değişkenlerin öneminin bir testi olarak tanımlar.

Psikoloji, eğitim ve sosyal bilimlerde, araştırmacılar, regresyon analizi - yol analizi ve faktör analizi gibi tahmin ölçümleri olan birçok istatistiksel metot kullanmışlardır. Regresyon analizi, değişkenler arasındaki ilişkiyi ve parametrelerini tahmin etmek için gerekli olan tahmin çalışmalarında kullanılır.

Chatterjee ve Hadi (2012), regresyon analizinin üç temel amaç için kullanıldığını belirtmektedir:

1. Açıklama: Açıklayıcı değişkenler ile bağımlı değişken arasındaki ilişkiyi tanımlar. (Bağımlı değişken varyansının en önemli bölümünü oluşturan en az sayıda açıklayıcı değişken seçimi yapılmaya çalışılmaktadır).

2. Tahmin ve Öngörü: Bağımsız değişkenlerin gerçek değerlerine karşılık gelen bağımlı değişkenin yeni bir gözlem değerinin ortalama değerinin tahmin edilmesi.

3. Kontrol: Bağımlı değişkenin değerlerindeki değişimi, bağımsız değişkenin değerlerindeki değişim açısından bağımsız değişkenin kontrol olarak alınmasına dayalı olarak yorumlamak. Modelin oluşturulmasının amacı, bağımlı değişkenin belirli değerlerini elde etmek için bağımsız değişkenin değiştirilmesi gereken boyutu belirlemektir.

Model bir açıklayıcı değişken içerebilir ve bu durumda Basit Doğrusal Regresyon Modeli olarak adlandırılır (Samprit ve Ali, 2006). Model birkaç açıklayıcı değişken içeriyorsa, buna Çoklu Doğrusal Regresyon Modeli denir (Freedman, 2009). Regresyon modelleri doğrusal olmayan modellere ve doğrusal modellere ayrılır:

1-Değişkenlerin doğrusal olmayan (Eğrisel) regresyonu: Bağımsız değişkenlerden birinin birinin gücüne yükselttiği, başka bir değişkenle çarpıldığı veya bölündüğü ve grafiksel olarak temsil edildiğinde eğri şeklini aldığı regreyona denilir.

2-Değişkenlerin doğrusal regresyonu: İlişkiyi temsil eden denklem birinci dereceden (birinin gücüne yükseltlen bağımsız değişkenler) olup, başka bir değişkenle çarpılmaz veya bölünmez ve grafiksel olarak temsil edildiğinde düz bir çizgi şeklini alan regreyon modelidir.

Kademeli çoklu regresyon yöntemi, eğitim, psikoloji ve sosyal bilimlerde en yaygın kullanılan araştırma yöntemlerinden biridir. Mevcut çalışma, kademeli çoklu

doğrusal regresyon yöntemine dayanmaktadır. Hangi değişkenlerin regresyon modelinden tutulması gerektiği ve katkılarını belirleyen veya hangi değişkenlerin çıkarılması gerekliliği ve katkılarını belirleyen en doğru tahmine ulaşmayı sağlayan yöntemdir (Kilani ve Al-Sharifin, 2014). İsmail (2016), çoklu regresyon modelinde bulunan bağımsız değişkenlerinin öneminin bir tesisi olarak tanımlamaktadır. Thayer (2002), açıklayıcı veya öngörücü modeller oluşturan değişkenlerin, kademeli regresyonun sağladığı bilgilere dayandığını görmektedir. Modele değişkenler eklerken veya silerken, kademeli yöntemin adımlarında her değişken için istatistiksel değişiklikler görülmektedir.

### 3. BULGULAR

Çoklu doğrusal regresyonda en iyi regresyon modeline ulaşmak için en kolay yöntem olan kademeli yöntem seçildi. Bu yöntem, ileriye doğru seçim yönteminin geliştirilmiş halidir ve ileriye doğru silme stratejisi, modelin bağımsız değişkenlerinin tek tek girilmesine bağlıdır. Bu nedenle, ilk adım korelasyon katsayısının hesaplanmasıyla başlar. Daha sonra bağımlı değişken ile bağımsız değişkenler arasındaki korelasyon matrisi ve tüm değişkenler arasından değişken ( $y$ ) ile en yüksek korelasyon katsayısına sahip bağımsız değişken seçilir.

Çizelge 1. Stepwise metodunun sonuçları (model özeti)

| Model | R      | R Square | Adjusted R Square | Std. Error of the Estimate |
|-------|--------|----------|-------------------|----------------------------|
| 1     | 0.536a | 0.287    | 0.281             | 4.95514                    |
| 2     | 0.757b | 0.572    | 0.565             | 3.85440                    |
| 3     | 0.912c | 0.833    | 0.828             | 2.42275                    |
| 4     | 0.975d | 0.951    | 0.950             | 1.31177                    |
| 5     | 0.985e | 0.970    | 0.968             | 1.03935                    |

a. Predictors: (Constant),  $X_{11}$

b. Predictors: (Constant),  $X_{11}$ ,  $X_1$

c. Predictors: (Constant),  $X_{11}$ ,  $X_1$ ,  $X_3$

d. Predictors: (Constant),  $X_{11}$ ,  $X_1$ ,  $X_3$ ,  $X_{10}$

e. Predictors: (Constant),  $X_{11}$ ,  $X_1$ ,  $X_3$ ,  $X_{10}$ ,  $X_4$

f. Dependent Variable:  $X_{13}$

Analize göre, beş adet regresyon modeli tespit edilmiştir. İlk olarak, bağımlı değişkenin ( $X_{13}$ : Motivasyonel Stimülasyon) en yüksek korelasyon katsayısının bağımsız

değişken ( $X_{11}$ : Ebeveyn iş birliği) ile olduğu tespit edilmiştir. Bu yöntemde, değişkenlerin modele eklenmesi veya modelden çıkarılması için anlamlılık düzeyinin belirlenmesi gerektiğine ve değişkenlerin girilmesine ilişkin önem düzeyinin, değişkenlerin girilmesine ilişkin anlamlılık düzeyinden daha az olması gerektiğine dikkat edilmelidir. Değişkenlerin modelden hariç tutmak ve değişkenleri ekelemek için önem seviyesi  $\alpha = 0,05$  eklemek için anlamlılık seviyesini ve  $\alpha = 0,1$  ile hariç tutmak için anlamlılık seviyesini belirlediğimiz dışlama için önem seviyesinden daha az olmalıdır. F istatistiği model için hesaplanır, eğer anlamlıysa, modelin her bir parametresi için t-istatistiği hesaplanır ve ilk parametre hesaplanırken, onun t-istatistiğini hesaplamaya gerek yoktur. Çünkü F-istatistiği, bu aşamaya kadar sadece bir parametremiz olduğunu düşünerek işlem yapmaktadır. Bir sonraki aşamada bağımlı değişkenle kısmi korelasyon katsayısı en yüksek olan ikinci bağımsız değişkeni eklenmektedir. Daha sonra yukarıda belirtilen testler yapılmaktadır.

Çizelge 2. Her bir regresyon modelinin etkileri için ANOVA sonucu

|   | Model      | Sum of Squares | df  | Mean Square | F       | Sig.               |
|---|------------|----------------|-----|-------------|---------|--------------------|
| 1 | Regression | 1146.921       | 1   | 1146.921    | 46.711  | 0.000 <sup>b</sup> |
|   | Residual   | 2848.198       | 116 | 24.553      |         |                    |
|   | Total      | 3995.119       | 117 |             |         |                    |
| 2 | Regression | 2286.630       | 2   | 1143.315    | 76.958  | 0.000 <sup>c</sup> |
|   | Residual   | 1708.489       | 115 | 14.856      |         |                    |
|   | Total      | 3995.119       | 117 |             |         |                    |
| 3 | Regression | 3325.972       | 3   | 1108.657    | 188.878 | 0.000 <sup>d</sup> |
|   | Residual   | 669.147        | 114 | 5.870       |         |                    |
|   | Total      | 3995.119       | 117 |             |         |                    |
| 4 | Regression | 3800.676       | 4   | 950.169     | 552.190 | 0.000 <sup>e</sup> |
|   | Residual   | 194.442        | 113 | 1.721       |         |                    |
|   | Total      | 3995.119       | 117 |             |         |                    |
| 5 | Regression | 3874.132       | 5   | 774.826     | 717.274 | 0.000 <sup>f</sup> |
|   | Residual   | 120.987        | 112 | 1.080       |         |                    |
|   | Total      | 3995.119       | 117 |             |         |                    |

a. Dependent Variable:  $X_{13}$

b. Predictors: (Constant),  $X_{11}$

c. Predictors: (Constant),  $X_{11}$ ,  $X_1$

d. Predictors: (Constant),  $X_{11}$ ,  $X_1$ ,  $X_3$

e. Predictors: (Constant),  $X_{11}$ ,  $X_1$ ,  $X_3$ ,  $X_{10}$

f. Predictors: (Constant),  $X_{11}$ ,  $X_1$ ,  $X_3$ ,  $X_{10}X_4$

Çizelge 2'deki sonuçtan görüldüğü gibi, ilk modeldeki öngörücüler sabittir. Birinci modelde bir bağımsız değişken ( $X_{11}$ : Ebeveyn işbirliği), ikinci modelde iki bağımsız değişken ( $X_{11}$ ,  $X_1$ ), üçüncü modelde ise üç bağımsız değişken ( $X_{11}$ ,  $X_1$ ,  $X_3$ ), dördüncü modelde dört bağımsız değişken vardı ( $X_{11}$ ,  $X_1$ ,  $X_3$ ,  $X_{10}$ ) ve beşinci modelde beş bağımsız değişken var ( $X_{11}$ ,  $X_1$ ,  $X_3$ ,  $X_{10}$ ,  $X_4$ ).

Bu stratejiyi çalışmamıza uygulayarak, ilk adımda ilk seçilen değişken  $X_{11}$  olduğu görülmektedir. Çünkü bağımlı değişken  $X_{13}$  ile en yüksek basit korelasyon katsayısına sahip olan değişkendir. Bu durumda bağımlı değişken (Model 1)  $\hat{y} = -0.536X_{11}$ .

Model 1 için F istatistiği, Çizelge 2'de gösterildiği gibi  $F = 46.711$ 'dir. P değeri ( $sig = 0.000$ ) ve model parametresi için t istatistiği ( $t = -6.835$ ) Çizelge 3'te gösterildiği gibi anlamlı olduğu tespit edilmiştir. Bu durum, Ebeveyn İşbirliğindeki Mesleki Stres için nüfus oranındaki her bir birimlik artış için, engelli öğrenciler için toplam motivasyonel stimülasyonu 0,536 azaltacağı anlamına gelmektedir.

İkinci adımda, bağımlı değişken  $Y$  ile en yüksek kısmi korelasyon katsayısına sahip olan bağımsız değişken  $X_1$  girilmiştir ( $r = -0.368$ ). Önceki adımda seçilen değişkenden aşağıdaki regresyon modelini elde edilmiştir: (Model 2)  $\hat{y} = -0.687X_{11} + 0.555X_1$

Model 2'de  $B_2$  parametresi, Deneyim Yılı oranının her bir birimlik artış için, engelli öğrencilerin Motivasyonel Uyarılmasını ortalama 0,555 artıracaklarını açıklamaktadır. ANOVA çizelgesindeki F-istatistiği, modelin önemini ve modellerin her iki parametresinin de ( $B_1$ ,  $B_2$ ) anlamlı olduğunu göstermiştir.

Çizelge 3. Her bir regresyon modeli için katsayıların sonucu

| Model |            | Unstandardized Coefficients |            | Standardized Coefficients | t       | Sig.  |
|-------|------------|-----------------------------|------------|---------------------------|---------|-------|
|       |            | B                           | Std. Error | Beta                      |         |       |
| 1     | (Constant) | 246.896                     | 2.976      |                           | 82.962  | 0.000 |
|       | $X_{11}$   | -1.829                      | 0.268      | -0.536                    | -6.835  | 0.000 |
| 2     | (Constant) | 243.809                     | 2.342      |                           | 104.121 | 0.000 |
|       | $X_{11}$   | -2.345                      | 0.216      | -0.687                    | -10.840 | 0.000 |
|       | $X_1$      | 4.808                       | 0.549      | 0.555                     | 8.759   | 0.000 |
| 3     | (Constant) | 241.987                     | 1.478      |                           | 163.704 | 0.000 |
|       | $X_{11}$   | -3.929                      | 0.181      | -1.151                    | -21.741 | 0.000 |
|       | $X_1$      | 9.427                       | 0.489      | 1.089                     | 19.261  | 0.000 |
|       | $X_3$      | 5.251                       | 0.395      | 0.791                     | 13.307  | 0.000 |

Çizelge 3. Her bir regresyon modeli için katsayıların sonucu (Devam)

| Model                           | Unstandardized Coefficients |            | Standardized Coefficients | t       | Sig.    |       |
|---------------------------------|-----------------------------|------------|---------------------------|---------|---------|-------|
|                                 | B                           | Std. Error | Beta                      |         |         |       |
| 4                               | (Constant)                  | 212.460    | 1.950                     | 108.978 | 0.000   |       |
|                                 | $X_{11}$                    | -4.894     | 0.114                     | -1.434  | -43.006 | 0.000 |
|                                 | $X_1$                       | 13.120     | 0.346                     | 1.515   | 37.929  | 0.000 |
|                                 | $X_3$                       | 8.677      | 0.297                     | 1.307   | 29.218  | 0.000 |
|                                 | $X_{10}$                    |            |                           |         |         |       |
| 5                               | (Constant)                  | 5.748      | 0.346                     | 0.487   | 16.609  | 0.000 |
|                                 | $X_{11}$                    | 216.837    | 1.633                     |         | 132.758 | 0.000 |
|                                 | $X_1$                       | -5.553     | 0.121                     | -1.627  | -46.074 | 0.000 |
|                                 | $X_3$                       | 16.158     | 0.459                     | 1.866   | 35.185  | 0.000 |
|                                 | $X_{10}$                    | 10.189     | 0.298                     | 1.534   | 34.154  | 0.000 |
|                                 | $X_4$                       | 8.385      | 0.421                     | 0.710   | 19.904  | 0.000 |
|                                 | (Constant)                  | -0.839     | 0.102                     | -0.261  | -8.246  | 0.000 |
| a. Dependent Variable: $X_{13}$ |                             |            |                           |         |         |       |

a. Dependent Variable:  $X_{13}$ 

Üçüncü adımda, bağımlı değişken ile üçüncü en büyük kısmi korelasyon katsayısı sahip ( $r = -0.234$ ) olarak  $X_3$  değişkeni eklendi. Değeri anlamlı ve bağımlı değişken ile pozitif bir ilişki içinde olduğu bu model elde edilmiştir.

$$(\text{Model 3}) \hat{y} = -1.151X_{11} + 1.089X_1 + 0.791X_3$$

Ayrıca, bu model, oranın ele alındığı engel türündeki her bir birimlik artış için, öğretmenlerin engelli öğrencilere yönelik motivasyonel uyarımını ortalama olarak 0.791 oranında artıracak anlamına gelmektedir. ANOVA çizelgesinden alınan F istatistiği, modelin önemini ve modelin parametrelerinin ( $B_1, B_2, B_3$ ) anlamlı olduğunu göstermiştir. Dördüncü aşamada girilen ( $X_{10}$ ) bağımsız değişkeni aşağıdaki Öğrenci ile İlişkilerin Stresidir. Pozitif bir etkiye sahiptir ve katsayıları anlamlıdır.

$$(\text{Model 4}) \hat{y} = -1.434X_{11} + 1.515X_1 + 1.307X_3 + 0.487X_{10}$$

Ayrıca, Öğrencilerle İlişkiler oranının her bir birimlik artış için, öğretmenlerin engelli öğrencilerin motivasyonel uyarımında ortalama 0,487 oranında bir artışa yol açacağı anlamına gelmektedir. ANOVA çizelgesindeki F-istatistiği, modelin önemini ve modelin parametrelerinin ( $B_1, B_2, B_3, B_4$ ) anlamlı olduğunu göstermiştir.

Beşinci adımda önceki aşamalarda girilen tüm bağımsız değişkenlerin etkisinin kararlılığı ile bağımlı değişken ile en yüksek kısmi korelasyon katsayısına sahip son bağımsız değişken, bağımlı değişkenin tersi ile ters bir etkiye sahip olan İşin Doğasının

Stresi  $X_4$  değişkenidir. Bu işaret etkisi açısından mantıklıdır. Ayrıca, t-istatistiği ile ilişkili p-değerinden ( $p < 0.001$ ),  $X_4$  değişkeninin parametresinin  $\alpha = 0.000$  anlamlılık düzeyinde anlamlı olduğu görülmektedir.

$$(\text{Model 5}) \hat{y} = -1.627X_{11} + 1.866X_1 + 1.534X_3 + 0.710X_{10} - 0.261X_4$$

ANOVA çizelgesindeki F-istatistiği, modelin önemini ve modelin parametrelerinin ( $B_1, B_2, B_3, B_4, B_5$ ) anlamlı olduğunu göstermiştir.

#### 4. TARTIŞMA VE SONUÇ

Bu araştırma, özel eğitim kurumlarında Demografik Değişkenler ile Öğretmenin Mesleki Stresinin engelli öğrencilerin motivasyonel uyarılmasına etkisini araştırmak amacıyla yapılmıştır. Bu çalışmanın temel amacına ulaşmak için, Irak'ın kuzeyindeki Duhok şehrinin merkezinde yer alan beş farklı özel eğitim enstitüsünde bir anket uygulanmıştır. Toplam 118 geçerli anket başarıyla toplanmış olup ve analiz edilmiştir.

Regresyon analizlerinde aşamalı kullanımda istatistiksel olarak anlamlı etkiler gözlenmiştir. Bu durum, yılların deneyiminin, uğraşılan engellilik türünün, işin doğasının, öğrencilerle ilişkinin ve ebeveynlerin işbirliğinin etkisiyle ilgili gözlemi doğrulamaktadır. Bu sonuç, deneyimlere ve başa çıkılan engelliliğin türüne göre motivasyonel stimülasyonda önemli bir fark olmadığını gösteren (Ashour, 2006) sonuçlarından farklıdır.

Bu çalışmanın bulgularından yararlanarak, mesleki, iş stresinin doğası, öğrencilerle ilişkilerin stresi ve ebeveyn işbirliğinin stresi olan üç bağımsız değişken, ikisi demografik değişkenler (yılların deneyimi ve öğretmenin uğraştığı engellilik türü) olmak üzere beş bağımsız değişken ışığında engelli öğrenciler için motivasyonel stimülasyon düzeyini tahmin etme olasılığının olduğu söylenebilir.

Bu sonuçlar doğrultusunda araştırmacı, özel eğitim kurumları tarafından mevcut araştırma sonuçlarından yararlanılmasını ve çoklu doğrusal regresyon modelini kullanarak daha fazla eğitim çalışması yapılmasını önermektedir.

## APPENDIX

App 1. Questionnaire form

Ahmed Hassan Abdullah

VAN YÜZÜNCÜ YIL UNIVERSITY

DEPARTMENT OF STATISTIC



### Questionnaire Form

Dear Tutors,

The researcher conducted this field study in order to fulfill the requirements for a master's degree in statistics. and it's titled (**Investigation of The Motivations of Disability Students By Stepwise Regression Method**).The purpose of this study is to determine the levels of work stress among teachers of special education schools, as well as their relationship to the level of motivation of students with special needs to learn, and whether changes in work stress have an effect on increasing or decreasing the level of motivation of students with special needs to learn.

The questionnaire in your hands was created to accomplish the goals of this study, and it is divided into three sections: the first section contains information about the qualitative variables in the study, the second section is a tool for measuring occupational stress among teachers of special education schools in Dohuk, and the third section is a tool for measuring the motivation of students with special learning needs among teachers of special education schools in Dohuk.

Since you are the most capable of diagnosing the professional pressures, you suffer from and the degree of motivation of students with special needs to learn from you only, this questionnaire has been directed to you.

To answer the paragraphs of each of the each of the first tool's paragraphs, the researcher will use 3-point scaling system: high (3), moderate (2), low (1), and a 4-point scaling system to answer the paragraphs of each of the second tool's paragraphs, which are always (4), often (3), Rarely (2), Never (1).

Therefore, I respectfully request that you read the questionnaire paragraphs and answer by placing a (x) in the column that represents your point of view.

I appreciate your participation and assure you that your responses will be kept completely confidential and used just for scientific research purposes.

Please accept my humble praise, respect and gratitude

### **Part One: Information about Qualitative Variables**

1- Years of experience:

☐ Less than 5 years      ☐ Between 5-10 Years      ☐ More than 10 years

2- Educational Qualifications:

☐ Diploma      ☐ Bachelor

3- Type of disability you are dealing with:

☐ Impaired Hearing      ☐ Vision Impairment      ☐ Mental Retardation

**Part Two: A scale of occupational stress among special education teachers in Duhok schools**

**1- The nature of the job:**

| No. | Questionnaires                                                                                                                                                                      | Level |        |     |
|-----|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----|
|     |                                                                                                                                                                                     | High  | Medium | Low |
| 1-  | The nature of my work with children with special needs is repetitive and boredom.                                                                                                   |       |        |     |
| 2-  | The nature of my work with children with special needs requires high skills.                                                                                                        |       |        |     |
| 3-  | My Job doesn't match my educational qualification.                                                                                                                                  |       |        |     |
| 4-  | I am not convinced that my job as a special education teacher is of valued by the society.                                                                                          |       |        |     |
| 5-  | I am required to do work outside the scope of my job as a teacher for people with special needs.                                                                                    |       |        |     |
| 6-  | Long working hours are required for teaching children with special needs.                                                                                                           |       |        |     |
| 7-  | The requirements of my profession (such as constant preparation, standing in classes, being responsible for students with special needs, etc. ) reduces the chances for my success. |       |        |     |
| 8-  | The society's lack of appreciation and respect for the work I do towards children with special needs.                                                                               |       |        |     |
| 9-  | The school lacks educational activities and events in the special educational need's schools.                                                                                       |       |        |     |
| 10- | 10 - Low level of intellectual and scientific communication in the field of special education.                                                                                      |       |        |     |
| 11- | The society's negative view towards children with special needs.                                                                                                                    |       |        |     |

## 2- Financial Situation

| No. | Questionnaires                                                                                            | Level |        |     |
|-----|-----------------------------------------------------------------------------------------------------------|-------|--------|-----|
|     |                                                                                                           | High  | Medium | Low |
| 1-  | Lack of school materials and assets (boards, lockers, chairs, desks, ...) that help to get the work done. |       |        |     |
| 2-  | The noise produced - sometimes - by the voices of students and teachers, spreads throughout the workplace |       |        |     |
| 3-  | The classroom's designs don't match with type of education for children with special needs                |       |        |     |
| 4-  | Increased number of students in classrooms.                                                               |       |        |     |
| 5-  | Dirty buildings and yards.                                                                                |       |        |     |
| 6-  | Insufficient ventilation and lighting in the classrooms.                                                  |       |        |     |
| 7-  | Provoking riots and lack of discipline during and outside classes.                                        |       |        |     |
| 8-  | The school lacks a library specialized in the field of special education.                                 |       |        |     |

## 3- Personal Characteristics of the Learner:

| No. | Questionnaires                                                                                               | Level |        |     |
|-----|--------------------------------------------------------------------------------------------------------------|-------|--------|-----|
|     |                                                                                                              | High  | Medium | Low |
| 1-  | Slow and unnoticed progress from children with special needs in the educational content they learn.          |       |        |     |
| 2-  | Children with exceptional needs have a proclivity for forgetting what they've learned.                       |       |        |     |
| 3-  | The existence of more than one disability in one child.                                                      |       |        |     |
| 4-  | The level of motivation of students with special learning needs is low                                       |       |        |     |
| 5-  | Mastery of life and educational skills for children with special needs is weak.                              |       |        |     |
| 6-  | Having adaption problems associated with the disability, such as excessive movements and aggressive behavior |       |        |     |
| 7-  | Student's low desire and interest in learning.                                                               |       |        |     |

**4- Curriculum:**

| No. | Questionnaires                                                                                                                     | Level |        |     |
|-----|------------------------------------------------------------------------------------------------------------------------------------|-------|--------|-----|
|     |                                                                                                                                    | High  | Medium | Low |
| 1-  | No fixed curriculum in special educational needs schools                                                                           |       |        |     |
| 2-  | The curriculum material is inappropriate for children with special needs since it is not suited to their learning abilities level. |       |        |     |
| 3-  | Inability of the curriculum used to prepare children with special needs for their reintegration into community.                    |       |        |     |
| 4-  | Obtaining specialized resources in the field of special education is difficult.                                                    |       |        |     |

**5- Work Relationships****a. Relationship with the Management**

| No. | Questionnaires                                                                         | Level |        |     |
|-----|----------------------------------------------------------------------------------------|-------|--------|-----|
|     |                                                                                        | High  | Medium | Low |
| 1-  | My manager does not allow me to do my job freely.                                      |       |        |     |
| 2-  | My managers' failure to gather sufficient information about my performance at work.    |       |        |     |
| 3-  | Subjective evaluation of my performance by my managers.                                |       |        |     |
| 4-  | The school management does not show any cooperation to support educational activities. |       |        |     |
| 5-  | The needs of special education teachers not being met by the management.               |       |        |     |

**b. Relationship with Colleagues**

| No. | Questionnaires                                                                        | Level |        |     |
|-----|---------------------------------------------------------------------------------------|-------|--------|-----|
|     |                                                                                       | High  | Medium | Low |
| 1-  | Lack of appreciation from my colleagues towards my efforts.                           |       |        |     |
| 2-  | Lack of getting assistance when needed.                                               |       |        |     |
| 3-  | No social relationships with my colleagues outside of the workplace.                  |       |        |     |
| 4-  | The presence of conflicts between co-workers leads to an unfriendly work environment. |       |        |     |
| 5-  | The relationship between colleagues is based on conflicts.                            |       |        |     |

**c. Relationship with Students**

| No. | Questionnaires                                                          | Level |        |     |
|-----|-------------------------------------------------------------------------|-------|--------|-----|
|     |                                                                         | High  | Medium | Low |
| 1-  | Student's low desire and interest in learning.                          |       |        |     |
| 2-  | The student's late arrival and absent from school causes me discomfort. |       |        |     |

**d. Parent's cooperation**

| No. | Questionnaires                                                                                              | Level |        |     |
|-----|-------------------------------------------------------------------------------------------------------------|-------|--------|-----|
|     |                                                                                                             | High  | Medium | Low |
| 1-  | Nonattendance of parents to the parent-teachers' meetings.                                                  |       |        |     |
| 2-  | Lack of appreciation from the parents towards my job.                                                       |       |        |     |
| 3-  | Non-objective interference by some of the parents in my performance.                                        |       |        |     |
| 4-  | Parents' lack of understanding of the nature of their child's disability level.                             |       |        |     |
| 5-  | High and un-realistic expectations from the parent's regarding their children's progress.                   |       |        |     |
| 6-  | The parents' lack of appreciation for the efforts you are making towards their children with special needs. |       |        |     |

**6- Incentives:**

| No. | Questionnaires                                                                                     | Level |        |     |
|-----|----------------------------------------------------------------------------------------------------|-------|--------|-----|
|     |                                                                                                    | High  | Medium | Low |
| 1-  | The salary is not commensurate with the effort exerted in working with children with special needs |       |        |     |
| 2-  | Slow progression in the promotion process                                                          |       |        |     |
| 3-  | Difficulty of taking leaves (Annual, Sick, etc...)                                                 |       |        |     |

**Part Three: A questionnaire measuring the motivation of students with special needs to learn among teachers of special education schools in Duhok**

| No. | Questionnaires                                                                   | Level  |              |        |              |
|-----|----------------------------------------------------------------------------------|--------|--------------|--------|--------------|
|     |                                                                                  | Always | Occasionally | Rarely | Non-excitant |
| 1   | Smiles at the students, whether inside or outside the classes.                   |        |              |        |              |
| 2   | Constantly assures the students that they are excellent and doing good.          |        |              |        |              |
| 3   | Expects the students to enjoy his/her stay.                                      |        |              |        |              |
| 4   | Accompanies the students to recreational trips.                                  |        |              |        |              |
| 5   | Introduces the students to different types of communication ways.                |        |              |        |              |
| 6   | Encourages the students keep their school books in good condition.               |        |              |        |              |
| 7   | Appreciates the gestures of the students.                                        |        |              |        |              |
| 8   | Encourages the students in a variety of methods to enhance their memory.         |        |              |        |              |
| 9   | Makes students feel valued while participating in class activities.              |        |              |        |              |
| 10  | Raises questions that lead to discussions with students.                         |        |              |        |              |
| 11  | Helps the students to achieve what they desire.                                  |        |              |        |              |
| 12  | Encourages the students to ask questions.                                        |        |              |        |              |
| 13  | Develops good relationship with the student's guardians.                         |        |              |        |              |
| 14  | Asks the student's guardians to contact him whenever needed.                     |        |              |        |              |
| 15  | Shows praise to the student's cleanness and tidiness.                            |        |              |        |              |
| 16  | Rewards the students that makes effort, no matter what is it                     |        |              |        |              |
| 17  | Discusses with the students how to gain the admiration and acceptance of others. |        |              |        |              |
| 18  | Piques the student's curiosity by asking interesting questions                   |        |              |        |              |
| 19  | Encourages the students to play purposefully.                                    |        |              |        |              |
| 20  | Expects progress from the students.                                              |        |              |        |              |

| No. | Section                                                                                    | Always | Occasionally | Rarely | Non-excitant |
|-----|--------------------------------------------------------------------------------------------|--------|--------------|--------|--------------|
| 21  | Enhances cooperation among students                                                        |        |              |        |              |
| 22  | Clarifies the student's priorities.                                                        |        |              |        |              |
| 23  | Assists the students in doing their duties.                                                |        |              |        |              |
| 24  | Encourages the students to participate in school activities and events.                    |        |              |        |              |
| 25  | Increases the level of questioning when needed.                                            |        |              |        |              |
| 26  | Develops methods of studying for the students.                                             |        |              |        |              |
| 27  | Follows up with the students regarding given homework and tasks.                           |        |              |        |              |
| 28  | Characterized by forgiveness and patience.                                                 |        |              |        |              |
| 29  | Avoids bad expressions in describing the students such as (lazy, stupid, useless, etc....) |        |              |        |              |
| 30  | Provides the classroom with interesting materials related to the lessons.                  |        |              |        |              |
| 31  | Enhances the students' interest in school.                                                 |        |              |        |              |
| 32  | Seeks additional work from talented students.                                              |        |              |        |              |
| 33  | Encourages the students to participate in activities.                                      |        |              |        |              |
| 34  | Encourages the students to tell stories.                                                   |        |              |        |              |
| 35  | Makes the students' participation in class activities fun                                  |        |              |        |              |
| 36  | Encourages the students to play cooperatively                                              |        |              |        |              |
| 37  | Rewards diligent students                                                                  |        |              |        |              |
| 38  | Encourages the students to have a notebook for the tasks                                   |        |              |        |              |
| 39  | Reinforces the positive behaviors of the students                                          |        |              |        |              |
| 40  | Records notes about the students in his/her daily journal                                  |        |              |        |              |
| 41  | Makes the classroom interesting and helpful for a fun and simple learning                  |        |              |        |              |
| 42  | Avoids disrespecting the students and the guardians                                        |        |              |        |              |

| No. | Section                                                                            | Always | Occasionally | Rarely | Non-excitant |
|-----|------------------------------------------------------------------------------------|--------|--------------|--------|--------------|
| 43  | He avoids showing resentment towards his students                                  |        |              |        |              |
| 44  | Have a sense of humor                                                              |        |              |        |              |
| 45  | Being kind with the students                                                       |        |              |        |              |
| 46  | Cares about the students' interests                                                |        |              |        |              |
| 47  | Asks the parents to record notes related to their children                         |        |              |        |              |
| 48  | Focuses on the students' strong points                                             |        |              |        |              |
| 49  | Enhances the motivation of inactive students                                       |        |              |        |              |
| 50  | Follows up with the parent's regarding the children's academic level               |        |              |        |              |
| 51  | Involves the guardian in ways to organize the children's time                      |        |              |        |              |
| 52  | Involves the guardian in enhancing the children to focus while doing the homework. |        |              |        |              |
| 53  | Puts effort in making the students pleased and happy                               |        |              |        |              |
| 54  | Patient on the students during the classes                                         |        |              |        |              |
| 55  | Plans for the best performance and involves the students guardians                 |        |              |        |              |
| 56  | Able to prepare the appropriate calendar methods                                   |        |              |        |              |
| 57  | Avoids methods of deterrence and punishment                                        |        |              |        |              |
| 58  | Avoids frowning at the students                                                    |        |              |        |              |
| 59  | Periodically meets with the parents of the students                                |        |              |        |              |
| 60  | Rewards organized students                                                         |        |              |        |              |
| 61  | Helps the students determine their needs                                           |        |              |        |              |
| 62  | Develops good relationships with all the students in the class                     |        |              |        |              |
| 63  | Clarifiers the purpose of any requested task for the students                      |        |              |        |              |
| 64  | Rewards students who participate                                                   |        |              |        |              |

| No. | Section                                                            | Always | Occasionally | Rarely | Non-excitant |
|-----|--------------------------------------------------------------------|--------|--------------|--------|--------------|
| 65  | Discusses with fellow teachers the performance of his/her students |        |              |        |              |
| 66  | Rewards well behaved students                                      |        |              |        |              |
| 67  | Works on improving misbehaved students                             |        |              |        |              |
| 68  | Encourages the students to do their homework                       |        |              |        |              |
| 69  | Supports the students talented in music and drawing                |        |              |        |              |
| 70  | Makes the students feel successful                                 |        |              |        |              |

## App 2. Ethics committee decision

Evrak Tarih ve Sayısı: 25/12/2020-86198

|                                                                                                                            |                                                                                                                                                                                                                 |
|----------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                           | <p style="text-align: center;"><b>T.C.</b><br/> <b>VAN YÜZÜNCÜ YIL ÜNİVERSİTESİ</b><br/> <b>FEN VE MÜHENDİSLİK BİLİMLERİ YAYIN</b><br/> <b>ETİK KURUL BAŞKANLIĞI</b><br/> <br/> <b>ETİK KURUL KARARLARI</b></p> |
| <p><b>TOPLANTI TARİHİ: 15.12.2020</b><br/> <b>OTURUM SAYISI: 2019/08</b><br/> <b>TOPLANTIDA ALINAN KARAR SAYISI:06</b></p> | <p style="text-align: right;"><b>Sayfa: 2/6</b></p>                                                                                                                                                             |

Van Yüzüncü Yıl Üniversitesi Fen ve Mühendislik Bilimleri Yayın Etik Kurulu'nun 15/10/2020 tarihinde saat 11.00' da, Prof. Dr. İsmail ÇELİK başkanlığında Rektörlük Toplantı Salonu'nda yapılan toplantıda aşağıdaki kararları almıştır:

**KARAR NO 2020/08-02.** Danışmanlığını Erciş İşletme Fakültesi, İşletme Bölümü, İstatistik Anabilim Dalı öğretim üyesi Dr. Öğr. Üyesi Yener ALTUN'un yaptığı, yüksek lisans öğrencisi Ahmet Hassan ABDULLAH'a ait "Engelli Öğrencilerin Motivasyonlarının Adımsal Regresyon Yöntemi ile İncelenmesi" adlı tez çalışmasında kullanılacak anket ve ölçekler incelenmiş olup, söz konusu araçların ilgililişilere uygulanmasında çalışmanın yapılacağı yerin ilgili kurumundan izin alınması kaydıyla Fen ve Mühendislik Etik Kuralları ve İlkeleri çerçevesinde herhangi bir sakınca olmadığına karar verilmiştir.

|                                                                                                     |                                                                                                      |                                                                                                 |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|
|                                                                                                     | <p style="text-align: center;"><b>BAŞKAN</b><br/> Prof. Dr. İsmail ÇELİK<br/> Fen Fakültesi</p>      |                                                                                                 |
| <p style="text-align: center;"><b>ÜYE</b><br/> Prof. Dr. Cabir TEMİRCİ<br/> Fen Fakültesi</p>       | <p style="text-align: center;"><b>ÜYE</b><br/> Prof. Dr. Seval ANDIÇ<br/> Mühendislik Fakültesi</p>  | <p style="text-align: center;"><b>ÜYE</b><br/> Prof. Dr. Musa ÇAKIR<br/> Fen Fakültesi</p>      |
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## **CURRICULUM VITAE**

Ahmed Hassan Abdullah completed his primary, secondary and high school in Duhok, Iraq. He graduated from Duhok University, Faculty of Business and Economics, Department of Statistics in 2016. He started his master's education in September 2019 at Van Yüzüncü Yıl University, Institute of Science, Department of Statistics in Turkey.



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