

## The Big Five Personality Traits and Their Relationship to Psychological Hardness Among Gifted Students in Jordan

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### Abstract

The study aims to reveal the level of psychological hardness among gifted students in Jordan and to know the differences in the level of psychological hardness they have according to their academic grades, in addition to identifying the nature of the relationship between the big five personality traits and psychological hardness among gifted students in Jordan. The study population consisted of all gifted students in the King Abdullah II Schools for Excellence in Jordan, which number (3) the Jubilee School and the 18 pioneering centers for the gifted in Jordan affiliated with the Ministry of Education. A representative random sample of the study population was selected. The study also followed the correlational approach, and to achieve the objectives of the study, the big five personality traits scale was used prepared by (Costa & McCrae, 1992) and Arabization of Al-Ansari (1997), in addition to the psychological hardness scale (prepared by the researcher). The validity of the two scales was verified by calculating the validity of the discriminatory significance as an indicator of its construct validity and verifying its reliability by calculating Cronbach's Alpha.

To answer the study questions, descriptive statistic measures were used during the extraction of arithmetic means and standard deviations; To detect the level of psychological hardness among gifted students in Jordan, One-way ANOVA was used to detect the differences in the level of psychological hardness in the study sample according to the academic grade (tenth grade, first secondary, second secondary). Pearson Correlation coefficient was used to detect the correlation between the big five personality traits and psychological hardness

among gifted students in Jordan. Finally, in light of the study results, the researcher presented recommendations and proposals related to the study results.

**Key words:** The big five personality traits; Psychological hardness; Gifted students; Jordan

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### INTRODUCTION

The study of personality is the main source for identifying the manifestations of individual behavior, as it significantly impacts cognitive and psychological variables. Psychologists have focused on the importance of personality traits that distinguish between individuals; their knowledge helps predict what a person will be like in the face of various situations in his life. Some psychologists have viewed personal traits as the primary unit in building personality and a matrix of interrelated factors that have familiar sources and constitute the basic unit of an individual's personality. The Big Five Personality Traits Model describes a mature personality; personality traits are assumed to be relatively stable across different times and situations. The most important characteristic of this model is that it provides a comprehensive framework for organizing personality traits as they follow a hierarchical organization based on five factors at the top of the trait pyramid (Vassend & Skrandal, 2011; George & Zhou, 2001). The model presented by Costa & McCrae (1992) for the Big Five personality traits is one of the most widespread models in explaining personality traits: extraversion, neuroticism, agreeableness, openness to experience, and conscientiousness.

Psychology studies focus on the variables that help people deal with various situations. These variables include psychological hardiness, which appeared at the hands of Kobasa in 1979. It is a concept that refers to the ability of individuals to employ psychological and environmental resources in perceiving and explaining the difficulties and stressful life events they face so that they are more coherent in the face of these pressures and psychological hardiness is represented in three areas; namely, commitment refers to the individual's commitment to himself and others. Control indicates the extent to which the individual believes he can control the damages that occur and his ability to make decisions to face stressful situations. Finally, the challenge is the belief that changes in an individual's daily life are essential for developing and growing his personality (Mansour, Eid, and Zreik, 2014).

Mahoney (2015) mentions that recently there have been many studies that focused on the role of personality traits in improving the positive aspects of the individual and maintaining his physical and psychological health while facing stress, and enhancing psychological hardiness as an essential variable in the process of modifying the perception of stressful life events, and making them less severe in affecting the individual. Likewise, Al-Qahtani (2017) considers the importance of studying the factors that affect students' psychological hardiness, given that this age stage establishes the later stages of the student's life. Therefore, studying the aspects that enhance their ability to face pressures and challenges and a sense of positivity and psychological security is essential.

A student's personality is the outcome of multiple factors that result from interactions between several traits; where the student's personal traits determine the methods of dealing with the environment that surrounds him, and therefore the study of the student's personality represented by the five major traits, it can be considered as one of the solid criteria for good performance in its various academic, social and psychological fields, especially for the gifted student who may face some stressful situations and difficulties during the process of his interaction in the educational and social environment, in order to achieve the health and well-being of the gifted student, and the feeling that he lives in a safe environment, he must adapt to the educational and social environment, and the individual's mental health must be preserved at the same time he faces those challenges and difficulties, that is, he should be psychologically hard; As one of the vitally important factors in the personality of students in general, and gifted students in particular, as individuals who enjoy psychological hardiness are the most resilient and resistant to stressful situations and difficulties in their educational and social lives, where psychological hardiness contributes to alleviating the various effects of stressful events on an individual's psychological health, and therefore this

study came to reveal the relationship between the big five personality traits and psychological hardiness among gifted students in Jordan.

### **The Study Problem**

The current study comes in light of the effects that the Covid-19 pandemic has had on societies in general and students in particular. In Jordan, schools were closed, which resulted in many psychological effects on students; several studies have confirmed the adverse effects of the COVID-19 pandemic on students' mental health. The study of (Cao, Fang, Hou & Han, 2020) demonstrated that students suffered from varying degrees of anxiety during the COVID-19 pandemic; Boumediene and Jalouli (2020) showed a decline in mental health indicators during the spread of the pandemic. The study (Sutin, 2020) revealed that the spread of the Covid-19 pandemic led to some changes in the big five personality traits; she attributed this to the exceptional nature of the pandemic and the strict measures that have been imposed, which may lead to an impact on the mental health of individuals, especially among talented students in various stages of education. Whereas Jarwan (2012) sees that psychological problems increase among adolescents as they face great difficulties adapting and establishing sound and compatible social relationships, clearly affecting their cognitive, emotional, and social development, especially among gifted students. Jarwan (2012) confirms that the higher the degree of giftedness, the greater the possibility that the emotional problems of gifted students will intensify, which may affect the concept of psychological hardiness in this category.

In light of the lack of clarity on the relationship between the big five personality traits and psychological hardiness among gifted students, the researcher found the necessity to study this relationship. Accordingly, the study problem is to reveal the relationship of the big five personality traits to psychological hardiness among the gifted students in Jordan by answering the following questions:

What is the degree of psychological hardiness of gifted students in Jordan?

Are there statistically significant differences at the level ( $\alpha \leq 0.05$ ) in the degree of psychological hardiness among gifted students in Jordan attributable to the academic grade?

Is there a statistically significant correlation at the significance level ( $\alpha \leq 0.05$ ) between the big five personality traits and psychological hardiness among gifted students in Jordan?

### **Objectives of the study**

The study aims to reveal the degree of psychological hardiness and to know the differences between the levels of psychological hardiness among gifted students in Jordan, according to the academic grade, in addition to

identifying the nature of the relationship between the big five personality traits and psychological hardness among these students.

### The Study Importance

The importance of the study comes in the following aspects:

- The scarcity of previous studies that examined the relationship between the five major personality traits and psychological hardness among gifted students, as this study could be a precursor to more studies in this field.
- The results may contribute to developing recommendations that help gifted students withstand stressful events and improve their psychological hardness.
- The study deals with an important category, the category of gifted students, who are seen as a pillar for the growth and development of society. Gifted students go through many problems and stressful events, which require attention to their psychological hardness in a practical and studied manner to prepare the appropriate environment for their growth and development in the future.
- The study contributes to clarifying the relationship between the five major personality traits and psychological hardness among gifted students in Jordan, which may direct the attention of teachers and counselors in gifted schools to personality traits and psychological hardness among their students.
- Direct the attention of those responsible for gifted students through the study results in developing counseling programs to improve the degree of psychological hardness of gifted students by focusing on the big five personality traits.

### The Definition of Study Terms

**The big five personality traits:** It is a model of personality traits based on the possibility of describing the personality through five dimensions: extraversion, neuroticism, acceptability (acceptance), openness to experience, and conscientiousness. Each feature includes a set of expressive faces (Costa & McCrae, 1992).

The big five personality traits are defined procedurally in the current study as The gifted student's score on Costa and McCrae's Big Five Personality Scale (Costa & McCrae, 1992). It reflects the level of traits: extraversion, neuroticism, acceptability (acceptance), openness to experience, and conscientiousness in his personality.

**Psychological hardness:** the extent to which the individual believes in the effectiveness of the individual and his ability to employ the available psychological and environmental resources in perceiving, interpreting, and confronting stressful events, and it includes the following dimensions: "commitment, control, and challenge" (Ben Salem & Hassan, 2017, p. 206).

For the study, it is defined procedurally as follows: The talented student is characterized by a flexible personality

towards himself and others through awareness of stressful life situations and the ability to deal with them through his ability to adhere and control, and it is measured by the degree of the gifted student on the psychological hardness scale (prepared by the researcher).

**Gifted students:** They are students who can perform in the mental, creative, leadership, and particular academic fields, which confirms their need for special educational care and activities to meet their needs in the areas of their talent, to reach them to the maximum extent of their potentials and abilities (Jarwan, 2012, p. 59).

Procedurally gifted students are defined in the current study as students enrolled in gifted schools in Jordan who have unusual preparations and outstanding performance from the rest of their peers in one or more areas that need special educational care that the regular schools and curricula cannot provide for them.

### The limits of the study

**Objective limit:** The study examined the relationship between the five major personality traits (extraversion, neuroticism, acceptability, openness to experience, conscientiousness) and psychological hardness in the dimensions (commitment, control, and challenge).

**Human Limit:** The study was applied to a sample of gifted students (both males and females) in gifted schools in Jordan.

**Spatial limit:** The field application was carried out on students in schools for the gifted within the borders of Jordan in Jordan.

**Time limit:** The field application of the study was carried out during the working hours of talented students during the first semester of 2022-2023.

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## LITERATURE REVIEW

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**Psychological Hardiness:** Psychological hardness is a vital factor in personality, and it is a critical factor in improving performance, mental and physical health, and maintaining an individual's behavior (Al-Minshawi, 2017).

Psychological hardness consists of the psychological and social characteristics of the personality, which consist of commitment, challenge, and control, which are essential for the student in dealing with stressful life situations and overcoming them, and overcoming psychological pressures. Student-to-face, this contributes to reducing the amount of psychological stress in the student's experiences and helps him to deal with life stress effectively (Abbas, 2014). Psychological hardness includes the following dimensions: (Ben Salem & Hassan, 2017)

- Commitment: It is a psychological contract and the extent of the student's commitment to himself and others around him.
- Control: is the student's belief in his ability to control

the events he faces and take personal responsibility for what happens to him; instead of feeling unable to face the urgent problems in life.

- **Challenge:** It is concerned with the student's ability to adapt to various new situations and acceptance of these situations as natural matters that help his growth and development of his experiences, with the student's ability to confront various problems effectively.

The various changes that the student is exposed to and his search for his identity under complex life circumstances; make him vulnerable to some pressures and situations that affect his psychological, physical, and mental development; he becomes constantly thinking about finding solutions that enable him to solve problems, face stressful events flexibly, and adapt to them appropriately, by achieving an appropriate level of psychological toughness. Psychological toughness contributes to resisting stress and avoiding its effects, as it attempts to adapt to stressful events and get out of them with the least harm (Sharqi, 2020).

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## THE BIG FIVE PERSONALITY TRAITS

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In their studies on personality, psychologists focused on the importance of the traits that distinguish a person from others, and knowing and identifying them helps predict what a person will be like in the face of the various situations he faces. Cattell viewed personality traits as a group of interrelated factors with familiar sources. When one factor is linked to another factor, this means that if one of the factors is present, the other factor is also present; Cattell believes that traits are relatively stable tendencies, tendencies, and responses and that they constitute the basic unit of an individual's personality (Al-Qahtani, 2017).

The model of the five major personality traits represents a hierarchical structure of personality traits, which are: (extraversion, neuroticism, acceptability, openness to experience, and conscientiousness); by reviewing the writers of personality traits, Abdel Muttalib and Ahmed (2016) summarize the five major personality traits, as follows:

- **Extraversion:** It refers to the extent to which the individual is excited, enthusiastic, and active, and it is highly correlated with positive feelings such as optimism, and this factor includes features of an interactive nature.

- **Neuroticism:** It indicates the degree to which the individual is insecure, anxious, and frustrated. It also expresses individual differences in the tendency towards experiencing frustrating experiences and in the cognitive and behavioral methods that follow or result from this tendency.

- **Acceptability:** It is one of the characteristics of an interactive nature, and it refers to the individual's interpersonal orientation, ranging between the tenderness

of heart, the kindness of nature, trust on one side, and suspicion on the other; it is an adaptive term and includes sub-traits such as propensity to help, adaptability, cooperation, empathy, altruism, tolerance, vulnerability, and courtesy.

- **Openness to experience:** This trait refers to creativity, imagination, intelligence, abstract thinking, a desire to reveal minute details, contemplation, and open-mindedness, distinguishing creative and educated individuals from individuals with low interests. High openness to experience often seeks challenges and expects more diverse life experiences, leading them to innovative ideas and new solutions to problems.

- **Conscientiousness:** This factor describes behavioral demands, and this trait refers to impulse control, and it indicates the individual's degree of organization, survival, steadfastness, perseverance, responsibility, and morals.

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## PREVIOUS STUDIES

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Few previous studies were conducted in Jordan; this justifies conducting the study and gives it particular importance. By referring to some previous studies that examined the subject of the study, where the researcher found some studies that examined the relationship between the five major personality traits and psychological hardness, the majority of this study did not address talented students in its sample. Among these studies are the following:

The study of Al-Fatlawi (2010) aimed to reveal the relationship between psychological hardness and the five major factors of personality among students of the University of Karbala in Iraq; the study relied on a measure of psychological hardness prepared by the researcher, in addition to a list of the five major personality factors of (Costa & McCrae, 1992). The study sample consisted of (461) male and female students at the University of Karbala, and the results of the study concluded that the students of Karbala University in Iraq enjoy a high level of psychological hardness, in addition to the presence of differences in psychological hardness due to the sex factor in favor of males and that university students have a high level of the five factors. Furthermore, the results also showed a positive and statistically significant correlation between psychological hardness and the big five personality factors among the students of Karbala University in Iraq.

Al-Bayraqdar's (2011) study aimed to reveal the level of psychological stress and its relationship to the level of psychological hardness among students in the College of Education at the University of Mosul. The study sample was (843) male and female students from all departments in the College of Education at the University of Mosul. The study used the psychological stress scale (prepared by Al-Hajjar and Dukhan, 2005) and the psychological hardness scale (prepared by the researcher). The study

results showed that students' psychological stress levels are high, and their psychological hardness rate is low. It was also found that there were statistically significant differences between students in the level of psychological stress and the level of psychological hardness due to the variable of sex, in favor of males, and to the variable of academic specialization, in favor of scientific disciplines, and to the variable of academic level, in favor of students in the fourth year.

Al-Abdali (2012) conducted a study aimed at knowing the level of psychological hardness among academically superior and ordinary students in secondary education, and knowing the relationship between psychological hardness and methods of coping with stress, as well as verifying the existence of differences between academically superior and ordinary students in psychological hardness and methods of coping with psychological stress, the researcher used the psychological hardness scale (prepared by: Mukhaimer, 2006), and the scale of methods of coping with psychological stress (prepared by: Al-Hilali, 2009), the study was conducted on (200) secondary school students in Makkah Al-Mukarramah, and the results indicated that the level of psychological hardness and its dimensions rise in the gifted students, while it decreases in the ordinary students, and there is a positive correlation between the methods of coping with stress, and psychological hardness and its fields (commitment, control, challenge) for academically superior and ordinary students, it was also found that there are differences in the degrees of the dimensions of psychological hardness and the total degree of psychological hardness, between academically superior and ordinary students in favor of academically outstanding students.

The study of Radwan and Gabriel (2017) attempted to reveal the relationship between the big five factors of personality traits and psychological hardness among female students in the Special Education Division of the Faculty of Education at Zagazig University in Egypt, in addition to determining the level of psychological hardness as well as the differences between students of the Special Education Division with high psychological hardness and low psychological hardness according to for the big five factors of personality. The study was conducted on a sample of (80) students from the Special Education Division at the Faculty of Education at Zagazig University and after applying the Psychological Hardness Scale (prepared by Fawqiah Radwan, 2015) and the Personality Traits Scale (prepared by Enas Khreibeh 2008). The results indicated that the psychological hardness of the students was high, and the results also showed a positive correlation with statistical significance between the degrees of the dimensions of each personality trait and the dimensions of psychological hardness among the students of the Special Education Division.

Al-Qahtani's study (2017) came to examine the

differences in psychological hardness among secondary school students in the city of Riyadh, which may be due to the variables of the school year, academic specialization, and the number of family members; the researcher relied on a sample of (1248) students, and the researcher used the Psychological Hardness Scale, prepared by (Al-Maqati, 2012). The results showed the presence of an average level of psychological hardness among the students and the presence of statistically significant differences between the mean scores of the students due to the variable of the year of study in favor of the third-secondary students. The second secondary students, compared to the first secondary students.

Al-Zoubi and Al-Khamaiseh (2019) conducted a study to reveal the predictive ability of the five major personality factors with the degree of positivity among Al-Balqa Applied University students, in addition to the differences in positivity according to some variables. The sample consisted of (428) male and female students, and the New List (NEO) was applied to measure the five major personality factors and the Caprara and colleagues scale (Caprara et al.) to measure positivity. The results indicated statistically significant differences in positivity attributable to sex in favor of females, to the cumulative GPA in favor of those with perfect averages or more, and to the income level in favor of those with high incomes. The results also showed the presence of positive and significant correlations between the following personality factors: extraversion, agreeableness, and conscientiousness with positivity among students, but the relationship between neuroticism and positivity was negative.

The study of Al-Subaie (2019) aimed to reveal the psychological hardness of secondary school students in Hafr Al-Batin Governorate, Saudi Arabia, in light of some variables. The study followed a descriptive-analytical methodology through a random sample of (130) secondary school students who were applied to the psychological hardness scale (Imad Mukhaimer, 2002). The results showed that secondary school students' psychological hardness (control, challenge, and commitment) came to a medium degree. The results also showed that there were differences in the level of hardness attributed to the academic grade between the first secondary school on the one hand and each of the second secondary and third secondary on the other hand, and the differences were in favor of each of the second secondary and third secondary.

The study by Serdiuk, Danyliuk & Chykhantsova (2019) focused on identifying the psychological factors that determine the personal toughness of high school graduates while deciding their professional destiny. The sample consisted of (156) male and female students at the secondary level in the Ukrainian city of Keiv, and three measures was used (psychological hardness, psychological well-being, and self-behavior). The results showed that the level of psychological hardness was less

than the acceptable level. Where the level of commitment reached (60%), the level of control (52%), and the level of challenge (58%). The results also showed a strong relationship between indicators of psychological factors and the psychological hardness of the sample and a strong relationship between psychological well-being and psychological hardness among students.

The study of Al-Rabdi (2020) attempted to reveal the level of psychological hardness among university students in light of some variables. It also aimed to identify the possibility of predicting the psychological hardness of the sample through their self-esteem and future anxiety. To achieve the objectives of the study, measures of (psychological hardness, future anxiety, and self-esteem) were used to collect data from a sample of (450) male and female students from Qassim University. The results concluded that there is an average level of psychological hardness in its dimensions: commitment, control, and challenge among students, and there are differences due to the variable of the academic level in favor of the first and second levels. Moreover, that self-esteem contributes significantly and positively to predicting the psychological hardness of students, and that anxiety about the future contributes significantly and positively to predicting the psychological hardness of students.

The study of Sharqi (2020) aimed to reveal the effect of self-esteem on psychological toughness and locus of control among a sample of secondary education students. Cooper Smith's self-esteem scale, Imad Mukhaimer's psychological hardness scale, and Roter's locus of control scale were used. Which was distributed to the members of the study sample of (513) students from some secondary schools, and the results showed that the students have an average level of psychological toughness and that there are no differences in the level of psychological hardness according to the variables of gender, repetition, and specialization, except for the challenge axis, where the difference came in favor of scientific specialization.

The study of Al-Fiqi, Ibrahim, and Lotfi (2021) attempted to study the relationship between psychological hardness and future anxiety among university students. The sample consisted of (228) students in the Faculty of Education at Al-Azhar University. The two scales (psychological hardness and future anxiety - prepared by the researcher) were applied to them, and the results concluded a negative and statistically significant correlation between psychological hardness and future anxiety. Moreover, there are no statistically significant differences in the level of psychological hardness and future anxiety among students due to the specialization variable.

The study of Al-Tabaikh, Al-Zaghoul, and Al-Hamdan (2022) aimed to know the level of psychological hardness among gifted eleventh-grade students in the State of Kuwait and to know the nature of the relationship between psychological hardness and adaptive responses

to psychological stress. The study sample consisted of (112) gifted eleventh-grade students in Kuwait. The study followed the descriptive approach. The results showed that the level of psychological hardness among the gifted was high and that the highest level among them was in the commitment dimension, then the challenge dimension, followed by the control dimension. The results also showed a positive correlation between psychological hardness and the dimensions of the adaptive responses scale. The results also revealed differences in the level of psychological hardness and the degrees of commitment and challenge among gifted people due to gender in favor of females.

### **Comment on previous studies**

It is noted that some studies examined the relationship between the Big Five personality traits and psychological hardness. However, only some of these studies included gifted students in their samples. It is also noted that few previous studies were conducted in Jordan; this justifies conducting the study and gives it special importance. The researcher has benefited from previous studies in preparing the study's standard methods for selecting the sample, enriching the study's literature, and discussing its results.

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## **METHOD AND PROCEDURE**

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### **Study Approach**

The study used the correlational approach, which is used to study the correlational relationships between the different variables, in which the relationship between the change of a particular phenomenon and the change that accompanies it in another phenomenon is known. This study used the correlational approach to identify the correlation between the five major personality traits and psychological hardness among students.

### **The study population and its sample**

The study population consists of all gifted students in King Abdullah II Schools for Excellence in Jordan which numbered (13) schools, the Jubilee School, and the pioneering centers for the gifted in Jordan, which number (18) centers affiliated with the Ministry of Education, their number reached (4,807) male and female students in the various governorates of Jordan, according to official statistics for the academic year (2022-2023).

The appropriate sample size was determined to represent the community using the Thompson sampling equation, and the required number was (356) male and female students. They were chosen at random stratification to represent the gender of the students (male and female) in the academic grades (tenth, first secondary, second secondary). Table 1 shows the sample members' distribution according to the academic grade variable.

**Table 1**  
**Distribution of the study sample by grade variable**

10th grade	N	Percentage
Tenth grade	139	39.04%
First secondary	111	31.18%
Second secondary	106	29.78%
Total	356	100%

## STUDY TOOLS

The Big Five Personality Trait Scale/was prepared by (Costa & McCrae, 1992).

**Table 2**  
**The distribution of the positive and negative items in the scale of the five major personality traits**

The five traits	Positive items	Negative items
Neuroticism	6-11-21-26-36-41-51-56	1-16-31-46
Extraversion	2-7-17-22-32-37-47-52	12-27-42-57
Openness to experience	13-28-43-53-58	3-8-18-23-33-38-48
Acceptability	4-19-34-49	9-14-24-29-39-44-54-59
Conscientiousness	5-10-20-25-35-40-50-60	15-30-45-55

The response for the positive statements is according to the five-point scale (strongly disagree = 1, disagree = 2, neutral = 3, agree = 4, strongly agree = 5). The response scale is reversed in the case of negative items.

### Indications of the validity and reliability of the scale of the five major personality traits:

After Arabizing the scale, al-Ansari (1997) ensured its validity, stability, and suitability for the Arab environment, as the correlation coefficient for the Arabized scale

Costa & McCrae (1992) prepared a scale for the five major personality traits (neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness). The scale consists of (60) paragraphs, where (12) items measure each of the five characteristics. Al-Ansari (1997) Arabized the scale, and the scale contains (33) positive-oriented paragraphs, there are (27) negative-oriented ones, and Table (2) shows the distribution of the positive and negative items according to the five characteristics of the scale.

reached (0.702). The stability of the scale was calculated using Cronbach's Alpha coefficient. It reached (0.740), and the validity of the scale of the five major personality traits for this study was verified by presenting it to (9) arbitrators specialized in giftedness, creativity, and psychology, their opinions were guided by the items and areas of the scale, and the validity of the scale was confirmed by calculating the construction validity index of the scale, as in Table 3:

**Table 3**  
**Correlation coefficients of the items of the five major personality traits scale with the total score of the trait they belong to (n = 30)**

Neuroticism		Neuroticism		Neuroticism		Neuroticism		Neuroticism	
Item N.	Correlation coefficient	Item N.	Correlation coefficient	Item N.	Correlation coefficient	Item N.	Correlation coefficient	Item N.	Correlation coefficient
1	0.778**	13	0.707**	25	0.689**	37	0.680**	49	0.662**
2	0.829**	14	0.663**	26	0.798**	38	0.796**	50	0.783**
3	0.724**	15	0.763**	27	0.777**	39	0.593**	51	0.721**
4	0.733**	16	0.729**	28	0.783**	40	0.761**	52	0.726**
5	0.768**	17	0.744**	29	0.730**	41	0.759**	53	0.785**
6	0.797**	18	0.733**	30	0.664**	42	0.685**	54	0.750**
7	0.789**	19	0.695**	31	0.781**	43	0.761**	55	0.762**
8	0.848**	20	0.707**	32	0.842**	44	0.753**	56	0.675**
9	0.791**	21	0.782**	33	0.852**	45	0.771**	57	0.832**
10	0.684**	22	0.705**	34	0.751**	46	0.625**	58	0.758**
11	0.771**	23	0.773**	35	0.733**	47	0.828**	59	0.730**
12	0.768**	24	0.680**	36	0.712**	48	0.802**	60	0.825**

\*\* Statistically significant ( $\alpha \geq 0.01$ ).

The values of the correlation coefficients in Table (3) show that all items of the scale obtained positive and

statistically significant correlation coefficients with the total score of the trait they belong to, which indicates

the suitability of the items in the scale to measure the five major personality traits of gifted students in Jordan. The scale's reliability was also confirmed by calculating Cronbach's Alpha coefficient. As in Table 4:

**Table 4**  
**Reliability coefficients for the scale of the five major personality traits (n = 30)**

The five traits	Number of items	Reliability coefficient
Neuroticism	12	0.927
Extraversion	12	0.860
Openness to experience	12	0.903
Acceptability	12	0.898
Conscientiousness	12	0.901

Table 4 shows the high values of stability coefficients for the domains of the scale of the five major personality traits, where these values ranged between (0.860) for the

**Table 5**  
**Correlation coefficients of the items of the psychological hardness scale with the total score of the field to which they belong (n = 30)**

Item No.	Correlation coefficient	Item No.	Correlation coefficient	Item No.	Correlation coefficient
1	0.910**	12	0.867**	23	0.887**
2	0.911**	13	0.885**	24	0.893**
3	0.840**	14	0.876**	25	0.878**
4	0.866**	15	0.917**	26	0.892**
5	0.859**	16	0.891**	27	0.914**
6	0.816**	17	0.913**	28	0.905**
7	0.854**	18	0.891**	29	0.766**
8	0.830**	19	0.884**	30	0.894**
9	0.848**	20	0.870**	31	0.900**
10	0.873**	21	0.859**	32	0.923**
11	0.886**	22	0.872**	33	0.858**

\*\* Statistically significant ( $\alpha \geq 0.01$ )

The values of the correlation coefficients in Table 5 show that all items of the psychological hardness scale obtained positive and statistically significant correlation coefficients with the total score of the field to which they belong; this indicates the appropriateness of the items in the scale to measure the areas of psychological hardness among gifted students in Jordan. The stability of the psychological hardness scale was confirmed by calculating Cronbach's Alpha coefficient. As in Table 6:

**Table 6**  
**Reliability coefficients for the psychological hardness scale (n = 30)**

Domains of psychological hardness	Number of items	Reliability coefficient
Commitment	11	0.918
Control	11	0.937
Challenge	11	0.932
Psychological hardness (total)	33	0.957

“extraversion” trait and (0.927) for the “neuroticism” trait. These values are suitable for this study.

**Psychological Hardness Scale**

The scale consists of (33) items that measure psychological hardness in three areas: commitment, control, and challenge. Distributed evenly, as each domain includes (11) items that measure one of the three domains of psychological hardness, the response will be according to the triple scale (applicable = 3 degrees, applies to some extent = two degrees, does not apply = one degree).

**Indications of the validity and reliability of the psychological hardness scale:**

The scale's validity was verified by presenting it to (9) arbitrators specialized in giftedness, creativity, and psychology, and the items and areas of the psychological hardness scale guided their opinions. The validity of the scale was also confirmed by calculating the construction validity index of the scale, as in Table 5:

Table 6 shows the high values of the stability coefficients for the psychological hardness scale and its three domains, as the stability coefficient for the scale as a whole was (0.957), the values of stability coefficients for the three domains were (0.918), (0.937), and (0.932), respectively, and these values are suitable for this study.

**Statistical Treatment**

The statistics necessary to answer the study questions will be conducted using the program (SPSS-V,25) as follows:

Descriptive Statistics by extracting arithmetic means and standard deviations; To reveal the degree of psychological hardness among gifted students in Jordan. In order to determine the degree of psychological hardness of the applicant (high, medium, low), the following criterion was adopted:

- From (1.00 - 1.67) means that the degree of psychological hardness among students is low.
- From (1.68 - 2.34) means the degree of psychological hardness among students is medium.



• From (2.35 - 3.00) means the degree of psychological hardness among students is high.

One Way ANOVA; To detect differences in the degree of psychological hardness among gifted students in Jordan, according to the grade (tenth, first secondary, second secondary), in addition to the Scheffe test for pairwise comparisons to reveal the source of statistically significant differences.

Pearson Correlation to reveal the correlation between the five major traits of personality and psychological hardness.

**Table 7**  
**Means and standard deviations for the degree of psychological hardness among gifted students in Jordan**

Domain N.	Domains of psychological hardness	Mean	STD	Degree of hardness	Arrangement
3	Commitment	2.35	0.33	High	2
4	Control	2.32	0.28	Moderate	3
1	Challenge	2.41	0.33	High	1
--	psychological hardness (total)	2.36	0.26	High	--

It is clear from Table 7 that the degree of psychological hardness among gifted students in Jordan in general (total) was high, as the average of students' responses on the psychological hardness scale as a whole was (2.36) and a standard deviation (0.26).

As for the degree of psychological toughness of students in the three domains, the field of challenge came first, with an arithmetic mean (2.41) and a standard deviation (0.33), with a high degree, followed by the field of commitment, with an arithmetic mean (2.35) and a standard deviation (0.33), with a high degree. The control

**Table 8**  
**Results of (One Way ANOVA) to reveal the significance of differences in the degree of psychological hardness among gifted students in Jordan, according to academic grade**

Domains	Class categories	Mean	Source of variance	Sum of squares	df	Mean of squares	T value	Sig
field of commitment	10th grade	2.32	Between groups	0.154	2	0.077	0.718	0.488
	1st secondary	2.37	Within groups	37.785	353	0.107		
	2nd secondary	2.37	Total	37.938	355			
Control field	10th grade	2.26	Between groups	1.887	2	0.944	13.045	0.000*
	1st secondary	2.29	Within groups	25.533	353	0.072		
	2nd secondary	2.43	Total	27.420	355			
Challenge field	10th grade	2.36	Between groups	0.739	2	0.369	3.482	0.032*
	1st secondary	2.43	Within groups	37.449	353	0.106		
	2nd secondary	2.47	Total	38.188	355			
Psychological toughness (total)	10th grade	2.32	Between groups	0.674	2	0.337	5.044	0.007*
	1st secondary	2.36	Within groups	23.578	353	0.067		
	2nd secondary	2.42	Total	24.252	355			

\*\* Statistically significant ( $0.05 \geq \alpha$ ).

It is clear from the averages in Table 8 that there is an apparent variation in the degree of psychological hardness among students of the three grades in general and in several domains, and after the application of (One-way ANOVA); the results showed that the differences in the degree of psychological hardness among gifted students in general and in the two domains (control and challenge) were statistically significant. The calculated

## RESULTS OF THE STUDY

**Results of the first question:** What is the degree of psychological hardness among gifted students in Jordan?

Table 7 shows the results of the descriptive statistics on the degree of psychological hardness of gifted students in Jordan, on the scale as a whole, and in the three domains.

domain came last, with an arithmetic mean (2.32) and a standard deviation (0.28), with a medium degree.

**Results of the second question:** Are there statistically significant differences at the level ( $0.05 \geq \alpha$ ) in the degree of psychological hardness among gifted students in Jordan attributed to the academic grade?

One Way ANOVA was applied to detect differences in the degree of psychological hardness among gifted students in general and in the three domains, as shown in Table 8.

"f" values for the differences between the three grade students on the control and challenge domains and the scale as a whole were (13.045), (3.482), and (5.044), respectively, with a statistical significance of ( $0.05 \geq \alpha$ ). While the "f" values calculated for the differences between the three-grade students on the commitment domain did not reach the specified significance level ( $0.05 \geq \alpha$ ).

The source of the statistically significant differences in the degree of psychological hardness among gifted students in general and in the two domains (control and

challenge) was identified through Scheffe's test, as shown in Table 9.

**Table 9**  
**Scheffe test results to determine the source of statistically significant differences in the degree of psychological hardness among gifted students in general and in the two domains (control and challenge), according to the academic grade**

Domains	Class	Mean	10th grade	1st secondary	2nd secondary
Control	10th grade	2.26	---	0.02	0.17*
	1st secondary	2.29	---	---	0.15*
	2nd secondary	2.43	---	---	---
Challenge	10th grade	2.36	---	0.07	0.11*
	1st secondary	2.43	---	---	0.04
	2nd secondary	2.47	---	---	---
Psychological toughness (total)	10th grade	2.32	---	0.04	0.11*
	1st secondary	2.36	---	---	0.06
	2nd secondary	2.42	---	---	---

\* Statistically significant ( $\alpha \leq 0.05$ )

It is clear from Table 9 that the source of the differences between the students of the three grades on the psychological hardness scale as a whole and in the field of the challenge was between the students of the tenth grade and the students of the second grade of secondary school, and in favor of the students of the second grade of secondary school since their average responses were higher than the average responses of their peers in the tenth grade.

As for the source of the differences in the control domain, it was between the students of the tenth and first grades of secondary school. On the one hand, the students in the second grade of secondary school on the other hand, and favor of the students of the second grade of secondary school, their average responses were higher than the average responses of their peers in the tenth grade and first secondary grade.

This result means that psychological toughness as a whole and in the field of challenge increases among the students in the second year of secondary school compared to the students of the tenth grade and that the level of hardness in the field of control increases among the students of the second year of high school compared to the students of the tenth grade and first secondary grade.

**Results of the third question:** Is there a statistically significant correlation at the significance level ( $\alpha \leq 0.05$ ) between the five major personality traits and psychological hardness among gifted students in Jordan?

Pearson Correlations was calculated between students'

scores on the scale of the five major personality traits (neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness) and between their scores on the psychological hardness scale in general and in the three domains (commitment, control, and challenge). The correlation matrix came as in Table 10.

It is clear from Table 10 that the correlations between the five major personality traits (neuroticism, extraversion, openness to experience, agreeableness, and conscientiousness) and psychological hardness in general and in the three domains (commitment, control, challenge), were according to (Evans, 1996) criterion, as follows:

**Neuroticism:** The trait of neuroticism is associated with psychological hardness in general and in the three domains (commitment, control, and challenge), with a negative (inverse) relationship of medium strength, where the values of the correlation coefficients ranged between (-0.435) and (-0.562), and statistically significant ( $\alpha \leq 0.01$ ). This result indicates that the higher the neuroticism of gifted students in Jordan, the lower the level of psychological hardness in general and in the three domains to a moderate degree.

**Extraversion:** The extraversion trait, with psychological hardness in general and in the two domains (commitment, challenge), is associated with a positive (direct) relationship of medium strength, as the values of the correlation coefficients ranged between (0.503) and (0.403), with a statistical significance of ( $\alpha \leq 0.01$ ). While

the extraversion trait is associated with psychological hardness in the field of control, with a positive (directive) relationship of a weak strength, as the value of the correlation coefficient between them was (0.230), and with a statistical significance ( $\alpha \leq 0.01$ ). This result indicates

that the greater the extraversion characteristic of gifted students in Jordan, this leads an increase in their level of psychological hardness in general and in the domains of commitment and challenge to a moderate degree, and an increase in their level of control to a weak degree.

**Table 10**  
**Correlation coefficients between the five major personality traits and psychological hardness among students**

The big five personality traits	Statistical treatment	Domains of psychological hardness scale			
		Commitment	Control	Challenge	Scale(total)
Neuroticism	Correlation coefficient	-0.435	-0.527	-0.464	-0.562
	Significance level	0.000**	0.000**	0.000**	0.000**
	Relationship strength	Moderate	Moderate	Moderate	Moderate
Extraversion	Correlation coefficient	0.503	0.230	0.403	0.460
	Significance level	0.000**	0.000**	0.000**	0.000**
	Relationship strength	Moderate	Weak	Moderate	Moderate
Openness to experience	Correlation coefficient	0.168	0.233	0.160	0.219
	Significance level	0.001**	0.000**	0.002**	0.000**
	Relationship strength	Very weak	Weak	Very weak	Weak
Acceptability	Correlation coefficient	0.233	0.190	0.118	0.214
	Significance level	0.000**	0.001**	0.025*	0.000**
	Relationship strength	Weak	Very weak	Very weak	Weak
Conscientiousness	Correlation coefficient	0.545	0.523	0.441	0.597
	Significance level	0.000**	0.000**	0.000**	0.000**
	Relationship strength	Moderate	Moderate	Moderate	Moderate

\*\* Statistically significant at ( $\alpha \leq 0.01$ ) \* Statistically significant at ( $\alpha \leq 0.05$ )

• **Openness to experience:** The characteristic of openness to experience, with psychological hardness in general and in the field of (control), is associated with a positive (direct) relationship of a weak strength, as the value of the correlation coefficient between openness to experience and psychological hardness as a whole was (0.219), and with a statistical significance ( $\alpha \leq 0.01$ ). The value of the correlation coefficient between openness to experience and psychological hardness in the control area was (0.233), with a statistical significance of ( $0.01 \geq \alpha$ ). While the results showed that the characteristic of openness to experience is associated with psychological hardness in the two domains (commitment, challenge) with a very weak positive (directive) relationship, as the value of the correlation coefficient between openness to experience and psychological hardness in the domain of commitment was (0.168), and with a statistical significance ( $\alpha \leq 0.01$ ). The value of the correlation coefficient between openness to experience and psychological hardness in the field of the challenge was (0.160), with a statistical significance of ( $\alpha \leq 0.01$ ). This result indicates that the greater the characteristic of openness to experience among gifted students in Jordan, this leads to an increase in their level of psychological hardness in general and in the field of control to a weak degree and to an increase in their level of commitment and challenge to a very weak degree.

• **Acceptability:** The acceptability trait, with psychological hardness in general and in the field of (commitment), is associated with a weak (direct) positive relationship, as the value of the correlation coefficient between acceptability and psychological hardness as a whole was (0.214), and with a statistical significance ( $\alpha \leq 0.01$ ). The value of the correlation coefficient between acceptability and psychological hardness in the field of commitment was (0.233), and the statistical significance was ( $\alpha \leq 0.01$ ). While the results showed that the acceptability trait is associated with psychological hardness in the two domains (control, challenge) with a very weak positive (directive) relationship, as the value of the correlation coefficient between acceptability and psychological hardness in the control domain was (0.190), and with a statistical significance ( $\alpha \leq 0.01$ ). The value of the correlation coefficient between acceptability and psychological hardness in the field of challenge was (0.118), and the statistical significance was ( $\alpha \leq 0.05$ ). This result indicates that the greater the acceptability trait of gifted students in Jordan, the greater their level of psychological hardness in general and in the field of commitment to a weak degree, and to an increase in their level of control and challenge to a very weak degree.

• **Conscientiousness:** Live conscientiousness, with psychological hardness in general and in the three

domains (commitment, control, and challenge), is associated with a positive (direct) relationship of medium strength, as the values of the correlation coefficients ranged between (0.441) and (0.597), with a statistical significance of ( $\alpha \leq 0.01$ ). This result indicates that the higher the conscientiousness characteristic of gifted students in Jordan, the higher their level of psychological hardness in general and in the three domains to a moderate degree.

## DISCUSS AND INTERPRET THE RESULTS OF THE STUDY

The results showed a high degree of psychological hardness among gifted students in Jordan in general (total) and in the areas of challenge and commitment. In contrast, the psychological hardness in the control field came to a medium degree. This can be explained by the fact that gifted students have a high degree of psychological toughness in general and in the areas of challenge and commitment, given their importance in facing the stressful situations they are exposed to in their studies. The importance of commitment to achieving academic success, as gifted students adhere to the prevailing values and principles of society and its national issues, have a commitment to goals related to achievement and seek to participate in school activities to achieve their goals, which is reflected positively on their psychological toughness. Commitment is also a kind of personal contract by which the gifted student commits himself to himself and his goals, assuming his responsibilities towards himself and his community, and having moral qualities that suit the reality of his life, such as loyalty, tolerance, and honesty, which contributes to their gaining a high degree of confidence in dealing with new situations and trying to discover what is new, which gives them the ability To face problems that increase their ability to challenge.

This high result of the degree of psychological hardness in general among gifted students in Jordan is consistent with the study of Al-Abdali (2012), which indicated that the level of psychological hardness rises among outstanding students, and with the study of Al-Fatlawi (2010), which showed that students have a high level of psychological hardness, it also agrees with the study of Radwan and Gabriel (2017), which indicated that the psychological hardness of female students was high, and with the study of Al-Tabikh et al. (2022), which showed that the level of psychological hardness among gifted students was high, while it differs with the study of Al-Bairaqdar (2011), which showed that the rate of psychological hardness among students is low, and with the study of Al-Qahtani (2017), which showed that there is an average level of psychological hardness among students. It also differs from the study of Serdiuk

et al. (Serdiuk, 2019), which showed that the level of psychological hardness among students was less than the acceptable level. The study by Al-Subaie (2019) showed that the psychological hardness of students came to a moderate degree, and the study of Al-Rabdi (2020), which showed an average level of psychological hardness among students, it also differs from the study of Sharqi (2020), which showed an average level of psychological hardness among students.

The results also showed that there are statistically significant differences at the level ( $0.05 \geq \alpha$ ) in the degree of psychological hardness in general and the two domains (control, challenge) among gifted students in Jordan, attributed to the academic grade; this result can be explained by the fact that the degree of psychological hardness increases with the student's progress in age and academic level, through maturity and the experiences gained from students' interaction with their peers, teachers, and those around them.

This result is consistent with the study of Al-Bairaqdar (2011), which showed that there are statistically significant differences between students in the level of psychological hardness due to the variable of the academic level in favor of the higher level "fourth year" it is also consistent with the study of Al-Qahtani (2017), which showed that there are statistically significant differences between the mean scores of students due to the variable of the year of study in favor of third secondary students, then second secondary students, compared to first secondary students, and with the study of Al-Subaie (2019), which found that there are differences in the level of hardness attributed to the academic grade. The differences came in favor of the higher grade, "secondary and third secondary," as it agrees with the study of Al-Rabadi (2020), which showed differences attributed to the variable of the academic level.

The results also showed that there are statistically significant correlations at the significance level ( $0.05 \geq \alpha$ ) between the five major personality traits and psychological hardness among gifted students in Jordan, where it was found that there are negative relationships between the trait of neuroticism and psychological hardness in its three domains, meaning that whenever the trait of neuroticism increases, the level of psychological hardness in its three domains among gifted students decreases, it was also found that there are positive (directive) relationships between the traits (extroversion, openness to experience, acceptability, and conscientiousness), and between psychological hardness in its three domains. In other words, the higher the attributes (extroversion, openness to experience, acceptability, and a living conscience), the psychological hardness in its three domains among gifted students increases; these relationships ranged from very weak to medium.

These results may be because the traits (extrovertedness, openness to experience, acceptability, and conscientiousness) are usually common among

individuals who have traits of acceptance, empathy, keenness to cooperate with others, the tendency to open interest, broad imagination, intelligence, sufficient knowledge, interest in what is new, and the desire to benefit from it, these qualities are often available to the gifted student, and the four mentioned traits include emotional warmth, activity, the pursuit of excitement, positive feelings, and social spirit, these qualities make the gifted student adhere to the customs and traditions prevailing in society and fulfill the promise. It also gives him the ability to challenge and control by assuming responsibility and the ability to make the appropriate decision for his academic situation. As for the negative relationship between neuroticism and psychological hardness, this result is logical because the presence of the neuroticism trait in the individual leads to a change in his mood and makes him tend to psychological imbalance, intense emotionality, anger, poor compatibility, impulsiveness, insecurity, anxiety, preoccupation, and irrationality, this impedes the individual's ability to make decisions and confront stressful situations and events, which are among the most important requirements of psychological toughness. Therefore, the higher the level of neuroticism in a student, the lower the level of psychological toughness.

These results are consistent with the study of Al-Fatlawi (2010), which showed that there is a correlation and statistical significance between psychological hardness and the five major factors of personality among students, and with the study of Al-Abdali (2012), which showed a correlation between coping styles, psychological hardness and its domains (commitment, control, challenge) among academically gifted students. It also agrees with the study of Radwan and Gabriel (2017), which showed the existence of a statistically significant correlation between the degrees of the dimensions of personality traits and the dimensions of psychological hardness among female students, and with the study (Serdiuk et al., 2019), which showed a strong relationship between indicators of psychological factors and psychological hardness among students.

## RECOMMENDATIONS AND SUGGESTIONS

The need to improve the degree of psychological toughness of gifted students in Jordan, especially in the field of control, and to adopt appropriate methods to develop their ability to control.

The researcher recommends that the Ministry of Education include the five major personality traits as criteria for selecting gifted students in its schools because the five major traits impact improving the psychological toughness of gifted students.

Since the results showed that there are statistically significant differences in the degree of psychological

hardness among gifted students in Jordan, attributed to the academic grade and in favor of the second secondary grade, therefore, the researcher recommends preparing programs to develop the psychological toughness of gifted students, especially students in the tenth and first grades of secondary school, to improve their ability to deal with stressful situations and events.

The researcher suggests conducting studies similar to this study on gifted students in the rest of the academic classes and comparing its results with the current study's findings.

The researcher suggests conducting studies similar to this study, using variables other than the academic grade, such as gender, economic level, and number of family members.

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