



# Examining the relationship between creativity and resilience in predicting nurses' job satisfaction during the Covid-19 pandemic

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## ABSTRACT

**Objective:** Unemployment is recognized as a fundamental problem in the society, especially among the graduates of the country's educational system. The aim of this research is to identify the factors preventing graduates from creating employment. Thus, this research aimed to explain the relationship between creativity and resilience in predicting nurses' job satisfaction during the coronavirus epidemic.

**Method:** The statistical population comprises nurses living in Tabriz city. The sample was selected according to available sampling and 228 people were counted using Cochran's formula. Ahvaz Hardiness Scale (1998), Torrance Tests of Creative Thinking (1966) and Brayfield and Roth Job Satisfaction Scale (1951) were used to collect data. The data were analyzed using univariate and multivariate regression model.

**Results:** The t-value for the fluidity, flexibility, originality, elaboration, and resilience, score is significant, ( $p < 0.01$ ) indicating the meaningful direct effect with Beta values of 0.322, 0.359, 0.511, 0.318, and -0.365, respectively.

**Conclusion:** Creativity is associated with job satisfaction, and creativity development is a good predictor of job satisfaction, however, such a relationship is reversed for resilience, and resilience is a poor predictor of job satisfaction.

**Keywords:** resilience, creativity, job satisfaction, nurses, covid-19.

## 1 Introduction

In the current situation where extensive changes occur in a turbulent world, companies are beginning to understand that employees are their most valuable assets (Millar, Chen, & Waller, 2017). Job satisfaction examines the recognition and evaluation of the employee's mental state

and emotional experience of his job, as well as all aspects or related aspects (Ćulibrk et al., 2018). In general, the meaning of job satisfaction is the approach through which people look at their job conditions; job satisfaction is achieved when job requirements match the demands and expectations of employees (Seyedi et al., 2021). However, some factors play a role in a more complete understanding of job satisfaction,

such as; Age, health, temperament, inclinations and level of aspirations of the employee should be considered (Mount, Ilies, & Johnson, 2006). In addition, family relationships, social status, recreational opportunities, activity in a work-political organization or simply social, ultimately contribute to job satisfaction (Mishra & Shukla, 2012). Satisfied and motivated employees are essential to business in the modern age and are the key factor that separates successful companies from the rest. When considering job satisfaction and work motivation in general, the distinctive features of these concepts in developing economies are of particular interest (Ćulibrk et al., 2018). According to the studies, job dissatisfaction is one of the influential factors in leaving the nursing profession (Seyedi et al., 2021). During the covid-19 epidemic, some researchers studied employees' job satisfaction in different departments (Ren, Cao, & Chin, 2020) and some have also investigated the job satisfaction of healthcare workers in Iran (Zhang et al., 2020). The job satisfaction of frontline medical staff is directly related to the implementation and effectiveness of major crisis prevention and control strategies (Schwartz, King, & Yen, 2020; Xiang et al., 2020). Therefore, this study is of high research importance. To ensure that frontline medical staff can be fully dedicated to epidemic prevention and control, it is necessary to ensure their basic needs, such as psychological needs, security and other needs (Huang et al., 2020).

In recent years, numerous studies have raised concerns about employee mental health. Resilience refers to the initial state or position after being bent, compressed, or stretched; however, in psychological terms, it is the ability to recover quickly after illness, depression and unhappiness. Regarding human behavior, resilience is often referred to as a wide range of situations and is considered a characteristic related to character, personality and the ability to cope (Garmezy, 1991; Hudgins, 2016). In this case, resilience refers to capability, flexibility, and the ability to return to normal after facing severe stress and challenge. Resilience can be used to explain employees' ability to overcome various workplace issues (Wongsuwan & Na-Nan, 2022). Some stated that resilience is the ability to adjust behaviors and effectively use available resources (Foroutan et al., 2023). Garmezy (1991) pointed to three distinct characteristics in resilient people. These characteristics include the ability to grow and progress despite adverse and risky conditions and the occurrence of positive consequences after experiencing them, the constant ability to perform under mental pressure and stress, and the ability to come back after a mental blow caused by experiencing unfortunate situations in life

(Garmezy, 1991). Paying attention to the "psychological well-being" of employees in organizations has attracted much attention and is at the top of the agenda (Byeon, Lee, & Park, 2019; Chitra & Karunanidhi, 2021; Foroutan et al., 2023).

Motivational strategies are one of the main components affecting organizational development, and if leaders pay attention to this component, the working environments will be more attractive and livelier for employees (Farajzadeh & Alavinia, 2022). There is a general and logical consensus about the definition of creativity; in this case, the definition of creativity is something new and suitable for work (Sternberg & Karami, 2022). There are many additional components to this definition, such as high quality (Sternberg, 2009), surprise, aesthetics, originality and creation of a product (Mishra & Shukla, 2012; Sternberg & Karami, 2022). Therefore, motivation gives the learner energy and guides his activities (Westerman, 2020). According to Gardner, a person is creative if can solve and create problems or solve concepts and materials in a field innovatively that is accepted in one or more cultures (Sternberg, 2009). Torrance (1969) while emphasizing the individual dimension of creativity, believed that, in terms of its nature, creativity can be taught. All people will achieve creativity when taught the right ways of thinking (Torrance, 1966). Guilford (1967) also paid attention to the practical nature of creativity, which consists of four main components: fluidity, flexibility, originality, and elaboration. Fluidity means producing multiple opinions and the ability to produce and extract many thoughts and experiences. Flexibility means that ideas can be modified and the ability to produce ideas in many different ways. Originality means the uniqueness of ideas and the ability to produce new and unusual ideas. The elaboration component is related to the details of thoughts and ideas created (Guilford, 1967).

Considering the research background and the gap in each of these variables, such as creativity in the workplace, this article tried to explain the relationship between creativity and resilience with job satisfaction.

## 2 Methods and Materials

### 2.1 Study design and Participant

This research was an applied study with a descriptive-correlation method. The statistical population of the resulting research was formed by all working nurses of Tabriz City in 2021. Since we did not have the variance and

error percentage, it was impossible to use Morgan's table, so Cochran's formula was used to determine the number of samples. According to the sample size of 560 individuals, according to Cochran's formula, the number of samples was 228. The sampling method was non-random, targeted, and available. Questionnaires were entered in Pursline after preparing the subscription. After coordinating with the nurses of several hospitals, the link to the questionnaires was sent to them. The response time was 20 minutes, and each subject was allowed to answer once.

## 2.2 Measures

Torrance Tests of Creative Thinking (1966) and Brayfield and Roth Job Satisfaction Scale (1951) were used to collect data.

### 2.2.1 Resilience

Ahvaz Psychological Hardiness Scale was created and validated by Kiamarhi et al. (1998) with the aim of preparing a scale to measure psychological hardiness at Shahid Chamran University of Ahvaz. Kiamrai et al. (1998) calculated the reliability coefficients of the questionnaire by two retest methods and Cronbach's alpha, 0.84 and 0.76, respectively. Concurrent validity and psychological hardiness construct were also calculated, and the obtained validity was satisfactory.

### 2.2.2 Creativity

Torrance Tests of Creative Thinking (1966) has 60 items. This test evaluates the four factors that make up creativity, i.e. fluidity, originality, flexibility and elaboration. The range of the total creativity score of each subject will be between 0 and 120 (Torrance, 1966). Based on previous studies, the total validity of the test is 27%, the fluency scale

is 09%, the flexibility scale is 13%, the originality scale is 15%, and the elaboration scale is 24%; The obtained coefficients are significant at the 0.05 level. Using Cronbach's alpha method, 87%, 87%, 0.81, 37% and 70% were reported for total creativity, fluidity scale, flexibility scale, originality and elaboration, respectively. These results are also significant at the 0.05 level (Farajzadeh & Alavinia, 2022).

### 2.2.3 Job Satisfaction

The Brayfield & Rothe (1951) job satisfaction scale was invented to measure people's job satisfaction and contains 19 items. This questionnaire is designed to determine how people feel about their jobs (Brayfield & Rothe, 1951). The validity and reliability of this scale has been confirmed in several studies (Farajzadeh & Alavinia, 2022). This research obtained reliability by calculating Cronbach's alpha coefficient of 0.72.

## 2.3 Data Analysis

The data were analyzed using univariate and multivariate regression model.

## 3 Findings and Results

First, the Kolmogorov-Smirnov test was used to check the assumption of normality of data distribution. A significance level greater than 0.05 was obtained for all variables. Therefore, the normality of data distribution was confirmed. Therefore, multivariable regression was used to investigate the research hypotheses. If the value of the significance level is smaller than the error value of 0.05 and the absolute value of the t-value is greater than the table value of 1.96, the research hypothesis is confirmed.

**Table 1**

*MANOVA test results*

Model	SS	df	MS	F	p	Durbin Watson
Regression	626.757	4	156.689	7.813	000.0	2.237
Residual	2732.515	224	801.19			
Total	273.3359	228				

**Table 2***Multivariate regression results to predict job satisfaction by creativity*

Model	Non-standard coefficients		Standard coefficients	t	p
	B	SE	Beta		
Constant	69.987	0.184		19.535	0.000
Fluidity	0.594	0.184	0.332	3.221	0.000
Flexibility	0.495	0.170	0.359	2.910	0.000
originality	0.704	0.134	0.511	5.240	0.005
elaboration	0.207	0.106	0.218	1.943	0.000

According to the [Table 1](#), because the significant value of F-value was equal to 0.000 and this value is smaller than the test level of 0.05. On the other hand, Durbin-Watson statistics is equal to 2.237 and this value is in the range of 1.5 to 2.5. Therefore, the errors resulting from the model are not correlated, so the linearity of this model is also confirmed.

According to the results of the [Table 2](#) in the first row (fixed value), the value of the significance level is equal to 0.000 and is smaller than 0.05, and the absolute value of the t-value is equal to 19.535, greater than 1.96; Therefore, with 95% confidence, the constant value remains in the model. In the second line (liquid), the value of the significance level is equal to 0.000 and is smaller than the error value of 0.05, and the absolute value of the t-value is equal to 3.221 and greater than 1.96; Therefore, with 95% certainty, the fluid variable

remains in the model and its beta coefficient is 0.594. In the third row (flexibility), the significance level is equal to 0.000 and is smaller than the error value of 0.05, and the absolute value of the t-value is equal to 2.910 and greater than 1.96. Therefore, it can be said with 95% confidence that the flexibility variable remains in the model. In the fourth line (originality), the significance level is equal to 0.005 and is smaller than 0.05, and the absolute value of the t-value is 5.240 and greater than 1.96; Therefore, it can be said with 95 percent certainty that the originality variable remains in the model. In the fifth line (elaboration), the significance level is 0.000 and is greater than the error value of 0.05, and the absolute value of the t-value on the cloud is 1.943 and is smaller than the value of 1.96; Therefore, it can be said with 95% certainty that the elaboration variable remains in the model.

**Table 3***ANOVA test results*

Model	SS	df	MS	F	p	Durbin Watson
Regression	219.285	1	219.285	7.087	0.011	2.303
Residual	1423.381	46	30.943			
Total	1642.667	47				

**Table 4***Univariate regression results to predict job satisfaction by resilience*

Model	Non-standard coefficients		Standard coefficients	t	p
	B	SE	Beta		
Constant	71.746	6.95		10.887	0.000
resilience	-0.337	0.127	-0.365	-2.662	0.011

According to the [Table 3](#), the  $p$  of F-value was equal to 0.000 and this value is smaller than the test level of 0.05. On the other hand, Durbin-Watson statistics is equal to 2.237 and this value is in the range of 1.5 to 2.5. Therefore, the errors obtained from the model are not correlated, so the linearity of the model is confirmed.

According to the results of [Table 4](#) in the first row (constant value), the value of the significance level is equal to 0.000 and is smaller than 0.05. The absolute value of the t statistic is equal to 10/19/887 and is greater than 1.96. Therefore, with 95% confidence, the constant value remains in the model. In the second line (resilience), the value of the

significance level is equal to 0.011 and is smaller than the error value of 0.05, and the absolute value of the t statistic is equal to 2.662 and greater than 1.96; Therefore, the resilience variable remains in the model with 95% confidence.

#### 4 Discussion and Conclusion

Considering the interaction of nurses with different people, especially during the corona virus epidemic on the one hand and the difficulty of complying with health guidelines on the other hand, it is of great importance. According to Spector (1997), job satisfaction is related to the expectations and perception of the individual from the components of the work environment (Spector, 1997). Later definitions consider which factors make a job satisfactory and examine different aspects that can cause satisfaction or dissatisfaction (Chitra & Karunanidhi, 2021). Herzberg's theory, presented in 1968, emphasizes the importance of fulfilling personal and motivational needs in one's potential growth (Herzberg, 1968). Aziz et al. (2021) stated that a person's job satisfaction can be determined through the two main factors expressed in this theory, namely the degree of acceptance of motivation and the degree of fulfillment of one's needs (Aziz et al., 2021). Ahad et al. (2021) argued that Herzberg proposed self-psychological factors such as appreciation and rights and motivational factors as the backbone of job satisfaction (Ahad et al., 2021; Herzberg, 1968). At the same time, they stated that the basic needs and motivations proposed by Herzberg can motivate people to work with full commitment and strive to achieve the best performance (Ahad et al., 2021). There are three dimensions for the structure of nurses' job satisfaction based on the description of Maslow's theory (1954) and Herzberg's theory (1968), which are the dimensions of physiology, relationships and safety. Maslow's theory (1954) describes the physiological dimensions based on the aspects of payment, rest, recognition, tasks, praise and hospitality (Maslow, 1954). Regarding the relationship dimension, this theory explains the relationship between colleagues and the relationship with managers. Regarding the safety dimension, this theory emphasizes the safety of facilities, employment and personal health.

In this research, the creativity components were able to predict satisfaction significantly. In line with this finding, Babaei, Bakhshipour and Pezeshki (2018) showed that psychological resilience and creativity can be effective on the job satisfaction of nurses (Babaei, Bakhshipour, &

Pezeshki, 2018), so this issue can be more effective on the mental and physical health of people. The research of Dalla Nasiri, Ahmadi and Barzegar (2012) was in line with our research. Their findings showed that creativity and innovation are related to job satisfaction and can predict it (Dalla Nasiri, Ahmadi, & Barzegar, 2012). Zavvar et al. (2021) showed that participatory management and managers' creativity directly and significantly affect employees' job satisfaction (Zavvar et al., 2021). Mishra and Shukla (2012) showed that creativity plays a mediating role between role stressors and employee job satisfaction (Mishra & Shukla, 2012). On the other hand, Farajzadeh and Alavinia (2022) showed that work motivation has a greater effect on people's job satisfaction than creativity (Farajzadeh & Alavinia, 2022).

In the second hypothesis, resilience negatively predicted job satisfaction. In other words, the relationship indicates that high resilience was associated with a decrease in job satisfaction, and this shows that having characteristics such as hardiness and resilience increases job satisfaction. Studies showed that what causes the job satisfaction of personnel is job stress or job characteristics: workplace, income, coworkers, manager, etc. Therefore, company managers are advised to provide job satisfaction through changes in optimal conditions that reduce job stress (Wongsuwan & Nanan, 2022). Beuren, dos Santos and Theiss (2022) showed that organizational resilience affects employees' business performance and job satisfaction (Beuren, dos Santos, & Theiss, 2022). Zheng et al. (2017) showed a positive and significant relationship between job satisfaction and resilience (Zheng et al., 2017). Hudgins (2016) showed a positive and significant relationship between job satisfaction, resilience, and anticipated employee turnover (Hudgins, 2016). Karami, Moradi and Hatamian (2017) results showed that self-efficacy, resilience and social support as predictive variables could predict the job satisfaction of middle-aged and elderly workers (Karami, Moradi, & Hatamian, 2017).

According to this background, the relationship between resilience and job satisfaction depends on different samples, and this article tries to investigate such a relationship among nurses. In this research, there is a positive and significant relationship between the categories of originality and elaboration with job satisfaction and a relationship between resilience and job satisfaction. One of the weaknesses of this study was its sampling method, which was done in a purposeful and accessible manner and was not random, which can bias the research results.

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## Declaration of Interest

The authors of this article declared no conflict of interest.

## Ethics principles

In this research, ethical standards including obtaining informed consent, ensuring privacy and confidentiality were observed.

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