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# Mediating Role of Cognitive Distortions in Negative Future Expectations That Are Affecting Occupational Anxiety

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***Abstract***

*It's assumed that university students' negative expectations for the future, combined with their prevalent resort to cognitive distortions, will heighten their anxiety regarding the profession. In this context, this study attempts to uncover the mediating role of cognitive distortions regarding the effects of negative expectations for the future on occupational anxiety. The findings of the mediation analysis demonstrated that cognitive distortions have a mediating role in the relationship between negative future expectations and occupational anxiety. Furthermore, the variables included in the model account for 22% of the total variance in occupational anxiety.*

**Keywords:** *Future Expectations; Cognitive Distortions; Occupational Anxiety*

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## Introduction

In our age, the individual's occupation is considered one of the factors that cause anxiety (Bozgün & Akın-Kösterelioğlu, 2018). A permanent job or a similar position in different organizations or a series of works in order to sustain one's life and make a living is characterized as an occupation (Bakırcıoğu, 2012, p. 573). The fundamental purpose of professions is to work in a specific field, create something for the benefit of others, and do so to acquire various things that can be used (Kuzgun, 2014, p. 1). In today's world, particularly in Turkey, while several years of school are required to obtain a profession, especially in recent years, education alone seems insufficient. The speed and technology advancements associated with population growth have changed many business lines and fields. Studies have found that this situation manifests itself more in teaching, where appointments are made through the Public Personnel Selection Examination (KPSS) (Şahin, 2011). The anxiety levels of university students who are challenged with a scarcity of job opportunities after graduation and the likelihood that they will be unemployed shortly after graduation (Özcan, Özbilen & Eranıl, 2018) increase due to these circumstances.

## Anxiety

Anxiety is defined as an emotional state manifesting with tension (Funk & Wagnalls, 1963 cited by Beck & Emery, 2015, p. 48). It is stated that the term originates from the Latin word "anxius" dating back to 1525. Going further, the root of "anxius" (i.e. anx) originates from another Latin word "angere" which means "being short of breath" or "drowning" (Lewis, 1970, cited by Beck & Emery, 2015, p. 48 ). Freud asserts that anxiety is an emotional reaction to an unrecognized cause revealed by the effects of unconscious forces that are residing in the individual's self or suppressed by his environment's restrictions (Bakırcıoğlu, 2012, p. 502). According to Beck, a cognitive therapist, anxiety is a dramatic experience that overshadows the other elements of the threat response (Beck & Emery, p. 58).

## Cognitive Distortions and Negative Future Expectations

According to Epictetus (50-135 AD), what upsets individuals are not things or events, but the thoughts they have about them (2013, p.15). Furthermore, Kierkegaard, a 19th-century philosopher, and Heidegger and Tillich, who followed his thoughts, emphasized in their work that people's mental problems are caused by unreasonable, irrational, and unrealistic thinking and that they may be resolved by the ability to observe, think, and change (Türkçapar, 2018, p. 69). Theories derived from this mode of thinking attempt to treat individuals' emotional disorders. The most renowned ones among these theories are Ellis's Rational Emotive Behavior Therapy (Ellis & MacLaren, 2003) and Beck's Cognitive Therapy (Beck, 2015). Today, Beck's approach is called Cognitive Behavioral Therapy (Beck, 2016, Türkçapar, 2018). Beck (2015, p. 25) states that the individual's emotional disorders, named "cognitive triad," are associated with distorted thoughts about themselves and their environment. Individual expectations for the future are considered in this scope (Ergüler & Batıgün, 2018). According to studies, severely distorted future perceptions can have a detrimental impact on the present moment (Roepke & Seligman, 2016) and lead to despair, which is the most extreme form of pessimism (Andersen

& Limpert, 2001). The relevant literature also supports that while negative expectations about the future can cause depression (O'Connor, Connery, & Cheyne, 2000; Moore, MacLeod, Barnes, & Langdon, 2006; Miranda, Fontes, & Marroquin, 2008; Roepke & Seligman, 2016), and also trigger anxiety (MacLeod, 1996; MacLeod, Tata, Kentish, Carroll, & Hunter, 1997). The main source of this problem, according to cognitive therapists, is dysfunctional beliefs residing in the cognitive structure (Ellis & MacLaren, 2003; Beck, 2015).

The dysfunctional beliefs in the pattern of "Schemas (Core Beliefs) – Intermediate Beliefs – Automatic Thoughts," which are included in cognitive approaches and expressed as cognitive structure, shape how individuals think. The commonly accepted forms of cognitive distortions, whose number can vary depending on the source, were determined to be 10 as per the current study's data collection tool (Ardanıç, 2017). These are conceptualized as mind-reading, catastrophizing, polarized (all or nothing) thinking, emotional reasoning, labeling, mental filtering, overgeneralization, personalization, should statements and discounting the positive.

Cognitive distortions can be linked to the individual's previous life (which is likely related to the self and the environment) or even the future life. It is thought that the distortions of catastrophizing, overgeneralization, should statements, polarized thinking and emotional reasoning can be more closely related to the future. Cognitive distortions play an essential role in anxiety disorders and many other mental health issues (Robert, Combalbert, & Pennequin, 2018; Yüksel & Bahadir-Yilmaz, 2018; Beck & Emery, 2015).

**Occupational Anxiety**

Existing studies show that occupational anxiety predicts burnout (Bozgün & Akın-Köstereliođlu, 2018). Along with that, it has been determined that occupational anxiety has a negative and significant relationship with self-efficacy (Güngör, 2019; Yıldırım, 2011), technology acceptance and usage (Korucu & Biçer, 2017). We also see studies that attempted to reveal the differentiation of occupational anxiety based on demographic variables (Dursun & Karagün, 2012; Kurtuldu & Ayaydın, 2010; Özdinç, Biçici, Çamur & Turan, 2018; Tabancalı, Çelik & Koruzz, 2016). In addition, Eftun-Yıldız (2018) concluded that positive future expectations exhibit a negative relationship with anxiety. Balaman and Gelibolu (2018), on the other hand, found no correlation between future expectations and degrees of occupational anxiety in their research on pedagogical formation students.

When the studies are reviewed, it is clear that no studies have coupled the effects of future expectations and cognitive distortions on occupational anxiety and that only a few studies have addressed the variables independently (Balaman & Gelibolu, 2018; Robert, Combalbert, & Pennequin, 2018). In this regard, it is expected that the current study, which aims to determine how the level of negative future expectations affects occupational anxiety in individuals who have not yet started to work through the cognitive distortions, would contribute to the literature. In this context, the aim is to uncover the mediating role of cognitive distortions regarding the effects of negative expectations for the future on occupational anxiety. For this purpose, the following hypotheses have been tested:

h1: Negative expectations for the future affect cognitive distortions.

h2: Cognitive distortions affect occupational anxiety.

h3: Negative expectations for the future directly affect occupational anxiety.

h4: Negative expectations for the future indirectly affect occupational anxiety through cognitive distortions.

## Method

### Research Model

This research was designed following the correlational survey model. Correlational survey research aims to reveal whether there is a relationship between the variables, and if so, the aim is to reveal the direction and degree of this relationship (Fraenkel, Wallen, & Hyun, 2015, p.332). Correlational studies also offer expectations for the future, but they do not provide a cause-effect relationship. Studies that allow for conclusions regarding the cause-and-effect relationship are more complicated and employ advanced methods like structural equation modeling. In terms of explaining the relationship between variables and prospection level, testing multiple models, and investigating the relationship between variables in terms of causality, structural equation modeling is thought to be more favorable than other methods (Fraenkel et al., 2015, p.339). As a result, structural equation modeling based on correlational survey models was utilized in this study, which aimed to explore the effect of cognitive distortions (thinking styles) on the relationship between future expectations and occupational anxiety.

### Sample Group

The sample was determined by the convenience sampling method. Convenience sampling, which is among the non-probability sampling methods, is also known as accidental or opportunity sampling (Gürbüz and Şahin, 2018, p. 132). When random sample selection is difficult (Fraenkel et al., 2012, p. 99), researchers utilize this strategy to include conveniently available or volunteer individuals in the sample (Johnson & Christensen, 2014, p. 230). It's a sampling strategy employed frequently in recent studies since it enables quick and low-cost data collection (Karagöz, 2017, p. 66).

A total of 261 university students studying in the education department took part in the study, which was conducted entirely based on volunteering. The study's universe includes nearly 750 students enrolled in the department of psychological counseling and guidance, as well as primary school education departments from the relevant faculty. For a quantitatively-oriented study with a 95% confidence level, the minimum acceptable sample size in a population of 750 people is 254 according to the literature (Gürbüz and Şahin, 2018, p. 130; Krejcie and Morgan, 1970). In this context, it is supposed that the current study's sample represents the target population. The scales were administered to the students simultaneously, and all of the participants were Turkish students. Of the participants, 162 (62.1%) were female, 99 (37.9%) male participants, and 123 (47.1%) were enrolled in the psychological counseling and guidance department, while 138 (52.9%) were enrolled in primary school education. While 153 (58.6%) of the students were seniors, other students (41.4%) were from below-grade levels. The mean age of the participants is 21.40, and their age ranges from 17 to 36.

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**Data Collection Tools**

The data of the study were collected using three different scales, and these are the Subjective Probability Task (SPT), the Teaching Occupational Anxiety Scale (TOAS), and the Cognitive Distortions (Thinking Styles) Scale (CDS).

***Subjective Probability Task(SPT)***

In the study, the SPT developed by MacLeod (1996) and adapted into Turkish by Ergüler and Durak-Batıgün (2018) was used to determine the participants' future expectations. The scale consists of two sub-dimensions, positive expectations and negative expectations, and concluded with 30 items. There are 20 negative and 10 positive items on the scale. The scale is scored following a 7-point Likert-type scale. The researchers that developed the scale and adapted it to Turkish conducted exploratory factor analysis, and the statistical values obtained were deemed adequate (Ergüler & Durak-Batıgün, 2018; MacLeod, 1996). Ergüler and Durak-Batigun (2018), the researchers who adapted the scale into Turkish, determined the Cronbach alpha reliability coefficients of the sub-dimensions as .86 for positive expectations, and .90 for negative expectations. And also according to them the item-total correlations of the factors ranged between 0.42-0.71 and 0.36-0.71, respectively. Furthermore, the researchers claimed that the fit indices obtained by confirmatory factor analysis were at least acceptable (X2/sd=2.00, GFI=.87, RMR=.050, RMSEA=.05, AGFI=.85).

Confirmatory factor analysis was used in this study to determine whether the scale's factor structure was appropriate. Analysis showed that the fit indices of the two-factor model were acceptable and had the perfect fit level value (X2/sd=2.54, RMSEA=.069, NFI= .94, NNFI=.95, CFI=.97, IFI= .96, RMR=.068 GFI=.88, AGFI=.86). The Cronbach Alpha internal consistency coefficients regarding the sub-dimensions of the scale were .82 for expectations and .89 for negative expectations. In this context, we may say that SPT is a valid and accurate measurement tool for assessing participant students' negative future expectations.

***Teaching Occupational Anxiety Scale (TOAS)***

The Teaching Occupational Anxiety Scale for Prospective Candidates developed by Cabı and Yalçınalp (2013) was administered to measure the occupational anxiety scores of the participants. The scale is divided into eight sub-dimensions, each with 45 items. According to the scale's creators, the item-total correlations of the factors were between 0.23 and 0.73, and the Cronbach's Alpha coefficients ranged between 0.94 and 0.67. The Cronbach's alpha coefficient for the entire scale was determined as .95. The scale is scored in a 5-point Likert type and is graded as "1=very anxious, 2=moderately anxious, 3=somewhat anxious, 4=slightly anxious, 5=not anxious at all". Cabı and Yalçınalp (2013) did not present findings for confirmatory factor analysis.

Within the scope of this study, confirmatory factor analysis was used to uncover the structure of the scale, which consists of 45 items and eight factors. The first level confirmatory factor analysis was used to determine the structure fit of the scale, and the chi-square value was found to be significant (X2=2336.40, sd=917, p=.000). As a result of the analysis, it was found that some fit indices showed an acceptable level of goodness of fit (X2/sd=2.55; RMSEA=.055; RMR=.057; RFI=.94; GFI=.89; AGFI=.87), and other fit indices were found to be at the perfect fit level (NFI=.96, NNFI=.97, CFI=.97, IFI=.97). The Cronbach's alpha coefficient for the entire scale was determined as .95, and the Guttman Split Half value was calculated as .80. In

this context, the TOAS can be described as a valid and accurate measurement tool for assessing participants' levels of occupational anxiety.

***Cognitive Distortions (Thinking Styles) Scale (CDS)***

In the study, the Cognitive Distortions (Thinking Styles) Scale developed by Covin, Dozois, Ogniewicz, and Seeds (2011) and adapted into Turkish by Ardanıç (2017) was used to assess the cognitive errors of the participants. The researchers that produced the scale were concerned that the word "distortion" in the scale's name may cause prejudice, so they called it "Thinking Styles" alternatively. For this reason, the scale can be encountered under two different names in the literature. There are short stories describing 10 different cognitive errors included in the scale. Each factor consists of two items. Each scale item is intended to assess cognitive distortions in two areas: one in the social realm and one in the achievement realm. It was a 7-point Likert-type scale, and answer options range from "Never" to "Always." The creator of the scale determined the Cronbach's alpha reliability coefficient for the entire scale as .85 for the first study and .91 for the second study. Ardanıç (2017), who conducted the scale's adaption process, used exploratory factor analysis and found that the scale's structure, which included 10 sub-dimensions and 20 items, had acceptable statistical values. The internal consistency coefficient for the entire scale was determined as .88 by Ardanıç (2017).

In this regard, confirmatory factor analysis was performed to confirm the scale's factor structure. The first level confirmatory factor analysis was used to determine the structure fit of the scale, and the chi-square value was found to be significant (X2=252.34, sd=125, p=.000). In this case, it is also suggested to check other fit indices (Seçer, 2015, p.191). Analysis showed that X2/sd, NFI, NNFI, CFI, RFI, IFI and GFI are at the perfect fit level, while values of RMR, SRMR, RMSEA and AGFI among fit indexes were found to be at an acceptable level of fit (X2/sd=2.01, NFI=.95, NNFI=.96, CFI=.96, RFI=.94, IFI=.96, GFI=.90, RMR=.071, SRMR=.053, RMSEA=.062, AGFI=.87). The Cronbach's alpha coefficient for the entire scale was determined as .89, and the Guttman Split Half value was calculated as .83. The analyzes show that CDS is a valid and reliable measurement tool. The reason for selecting this scale is that it has shown potential in the literature in terms of clinical and research prospects (Ardanıç, 2017), and it is widely acknowledged as a relevant, valid, and reliable measurement tool.

## Data Analysis

Descriptive and inferential statistics were utilized for data analysis. The overall status and personal data of the individuals were presented using descriptive statistics. In the correlation and mediation analysis stages, inferential statistics were applied. In the first stage, normality tests of the data were performed, and results showed that the research data had a multivariate normal distribution. In the second stage, validity and reliability tests were performed for the scales. At this stage, confirmatory factor analysis and internal consistency coefficient analysis methods were applied. LISREL 8.80 and the SPSS 24 package program were used to execute these analyses.

A bootstrap method-based regression analysis was used to examine whether cognitive distortions (thinking styles) played a mediation role in the effects of university students' negative expectations on their occupational anxiety. The bootstrap method is acknowledged as more reliable than the traditional method (Baron & Kenny, 1986) and the Sobel test (Gürbüz, 2019, p. 56; Hayes, 2018, p. 107; Zhao, Lynch, & Chen, 2010). The 3.4 version of the Process

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macro plugin installed in the SPSS 24 package software and developed by Hayes was used to perform the aforementioned mediator variable analysis (2018). During the analysis, 5000 resamplings were preferred with the bootstrap method. To accept the research hypothesis, the values in the confidence interval (BCa CI) obtained as a result of the analysis should not include zero (0) in mediation analysis (MacKinnon, Lockwood, & Williams, 2004). We also see that social science studies usually performed at a confidence level of 95% (Gürbüz & Şahin, 2018, p. 128). In this context, the 95% confidence interval was deemed as the basis for the analysis.

## Results

All hypotheses of the study were tested and verified. Before conducting the mediation analysis, the Pearson correlation coefficient was used to calculate the relationships between all of the variables in the model, and the results are shown in Table 1.

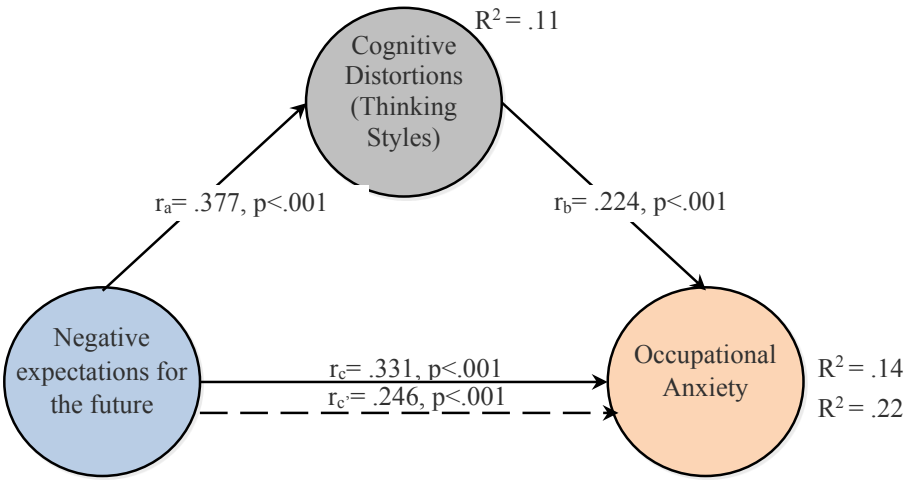
**Table 1.** Pearson Correlation Coefficients for Variables

| | Bivariate Correlation | | | Descriptive Statistic | | |
|---|---|---|---|---|---|---|
| | 1 | 2 | 3 | n | M | SD |
| 1. Negative expectations for the future | 1 | | | 261 | 3.12 | .77 |
| 2. Cognitive Distortions | .33** | 1 | | 261 | 3.10 | .88 |
| 3. Occupational Anxiety | .38** | .39** | 1 | 261 | 2.44 | .68 |

**$p$<.01

Table 1 shows that the variables have a positive and significant relationship. Following the correlation analysis, mediation analyzes were performed. The summary of the tested model for the mediating role of cognitive distortions in the correlation between negative future expectations and occupational anxiety is shown in Figure 1 based on the analysis.

**Figure 1.** Mediation of Cognitive Distortions and Unstandardized Beta Values in the Relationship Between Negative Future Expectations and Occupational Anxiety




As shown in Figure 1, the total effect of negative future expectations on occupational anxiety is statistically significant. ($r_c$= .331, 95%CI[.232, .423], SE= .05, t= 6.58, p< .001). That's being said, the effect of negative future expectations on cognitive distortions ($r_a$= .377,

95%CI[.245, .509], SE= .07, t= 5.64, p< .001), and the effect of cognitive distortions on occupational anxiety ($r_b$= .224, 95%CI[.136, .312], SE= .04, t= 5.02, p< .001) are statistically significant. The relationship between negative future expectations and occupational anxiety decreased when negative future expectations and cognitive distortions (mediator variable) were included in the model at the same time, although the degree of significance did not change ($r_{c'}$= .246, 95%CI[.146, .347], SE= .05, t= 4.83, p< .001). These results support the mediation hypothesis. The tested model is at a significant level ($F_{(2, 258)}$= 36.289, p< .001) and explains 22% of the total variance of occupational anxiety. The comparison of the direct and indirect effects of negative future expectations on occupational anxiety through cognitive distortions is presented in Table 2.

**Table 2.** Comparison of the Direct and Indirect Effects of Negative Future Expectations on Occupational Anxiety through the Mediation of Cognitive Distortions

| Effects | Point Estimate | SE | t | *p* | 95% BCa CI |
|---|---|---|---|---|---|
| Indirect Effect | .0845 | .0236 | - | - | [.0417, .1324] |
| Total Effect | .3309 | .0502 | 6.5853 | .000 | [.2319, .4298] |
| Direct Effect | .2464 | .0509 | 4.8377 | .000 | [.1461, .3466] |

Potential indirect effect in the tested model was determined as per the confidence intervals obtained by the Bootstrap method. Table 2 pointed out that the indirect effect of negative expectations on occupational anxiety is significant, inferring that cognitive distortions mediate the relationship between the two variables since the accelerated confidence interval values (BCa CI) do not include zero (0) as a result of Bootstrap analysis (point estimation= .0845, 95% BCa CI [.0417, .1324]). The standardized effect size of the mediation effect (K2) was found to be .097. In this context, we can say that the value found in the present study has a medium effect size.

## Conclusion, Discussion and Suggestions

As an outcome of the study, all four hypotheses evaluated were found to be supported. It has been observed that negative future expectations directly affect cognitive distortions (h1) and occupational anxiety (h3), and cognitive distortions directly affect occupational anxiety (h2). However, one of the important findings of the study is negative future prospections indirectly affect occupational anxiety through the mediation of cognitive distortions. According to the study's results, those who believe they will not be able to obtain the job/profession they desire may suffer occupational anxiety. In fact, Sahin's (2011) study of pre-service teachers validates these findings. The study mentioned above results stated that 80% of the participants have negative thoughts about their future careers. Unlike this conclusion, Balaman and Gelibolu's (2018) study shows that future expectations and occupational anxiety are unrelated. It is believed to be linked to the small sample size (50 students) and the variation of the study in question. In her study, Eftun-Yıldız (2018) found that anxiety and positive future prospects negatively correlate. This finding supports the acceptability of negative future expectations' effect on occupational anxiety, as asserted by this study. In their research, Mi and Song (2019) found that children's cognitive distortions directly affect their anxiety levels. Ota et al. (2020) state that cognitive distortions are associated with depressive symptoms and greatly influence

them. Studies demonstrate that cognitive distortions are correlated to anxiety (Robert, Combalbert, & Pennequin, 2018; Yüksel & Bahadir-Yilmaz, 2018). As a result of their research, MacLeod, Tata, Kentish, Carroll, and Hunter (1997) concluded that anxiety has a positive relationship with negative future predictions. Moore, MacLeod, Barnes, and Langdon (2006) suggested that individuals with depressive symptoms exhibit less positive future expectations and their negative predictions are high.

According to the result of the research, university students who have more negative expectations for the future and employ cognitive distortions frequently are more likely to experience occupational anxiety. It is likely that an increase in the individual's anxiety level may cause stress and cause different problems. In fact, according to a study conducted with pre-service teachers by Bozgün and Akn-Köstereliolu (2018), occupational anxiety is a predictor of burnout. When coping with such issues, young people often surrender to pessimism and despair (Kara, 2018).

## Practical Implications and Future Research

The findings of this study show that negative expectations about the future negatively affect occupational anxiety. The process takes place through cognitive distortions. For this reason, it can be suggested to teacher candidates to organize psychoeducational activities for their negative expactations and cognitive distortions in order to make professional anxiety functional. As a result, it is suggested that providing awareness training sessions on negative predictions and cognitive distortions might be advantageous. Passing on cognitive methods such as identification of negative thoughts, showing benefits and harms of thoughts, guided discovery by Socratic questioning, cognitive restructuring, alternative thinking, evidence-contrary evidence, double-standard through psychoeducational programs to young people, which are employed for changing dysfunctional thoughts and are included in cognitive approaches (Leahy, 2015, p.33-36) is predicted to prevent occupational anxiety from becoming dysfunctional. The limitation of in-depth analysis in quantitative research methods also applies to this research. For this reason, it is recommended to conduct future studies that would employ qualitative or mixed research designs.

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