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RESEARCH ARTICLE

Proactive Career Behaviors Scale: A Study of Validity and Reliability

Hacı Arif DOĞANÜLKÜ[a] Oğuzhan KIRDÖK[b]

[a]Çukurova University, Adana, Türkiye. [b]Çukurova University, Adana, Türkiye.

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ABSTRACT

This study aims to develop a valid and reliable tool to assess proactive career behaviours in university students. The participants of the study included three different groups of students enrolled at a public university in Turkey. A total of 999 students, 448 males and 551 females, participated in the study. The psychometric properties of the scale were analysed using confirmatory factor analysis, exploratory factor analysis, internal consistency coefficient, criterion-related validity, and test-retest methods. The exploratory factor analysis yielded a structure comprising 24 items across six factors. This six-factor structure explained 71.73% of the variance. The six-factor structure of the scale was validated through confirmatory factor analysis. The reliability analysis, measured using Cronbach's alpha, showed values ranging from .83 to .91 for the whole scale and its sub-scales. In conclusion, the Proactive Career Behaviour Scale has been proven to be a valid and reliable tool for administration among university students.

Today, career has become an area of development associated with almost every aspect of life. Therefore, planning their career well is now much more critical for individuals, especially for university students who have not yet started working life but are in the preparation phase for this (Zhang et al., 2023). Different from the past, the current business world expects university students to develop several new career competencies (Koen et al., 2012; Sultana, 2022). In this regard, proactive career behaviours represent one of the essential competencies anticipated for development (Sultana, 2022).

Proactive career behaviours, which are considered one of the important career competencies for the 21st century (Sylva et al., 2019), began to be the subject of research in the late 1990s (Frese et al., 1997; Seibert et al., 1999), when research on proactive career behaviours was very limited. As such, no studies at that time had investigated the proactive career behaviours of university students. As research on proactive career behaviours was conducted, the proactive career behaviours of university students were found to be a source of positive effects in the transition to work life (De Vos et al., 2009). Proactive career behaviours were also reported to have a significant relationship with career adaptability (Korkmaz, 2023) and visions about the future (Doğanülkü, 2024). Proactive career behaviours also help university students to successfully manage their career (Agrawal & Pradhan, 2023) and positively contribute to employability (Valls et al., 2020). With the

CORRESPONDING AUTHOR Hacı Arif DOĞANÜLKÜ, adoganulku@gmail.com, ORCID:0000-0003-2055-7511, Çukurova University, Adana, Türkiye.

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positive effects of proactive career behaviours on university students, recent years have included more frequent research on this issue (e.g. Doğanülkü & Korkmaz, 2023; Korkmaz, 2023; Okolie et al., 2023; Zhang et al., 2023).

Besides these studies mentioned above, several theories also make assumptions about proactive career behaviours, which involve two career theories in particular. The first one is Career Structuring Theory (Savickas, 2005), which emphasizes four basic career adaptation skills such as control, curiosity, concern, and confidence (Savickas, 2005). Individuals can adopt to and influence their environment through career adaptation skills. Career Structuring Theory emphasizes that individuals' proactive career behaviours emerge as a result of exhibiting these four basic career adaptation skills (Hirschi et al., 2015; Savickas, 2005). In other words, practices that improve individuals' career adaptability could enable them to display more proactive career behaviour. Another important career theory that offers perspective on proactive career behaviours is "Social Cognitive Career Theory-(SCCT)" (Lent et al., 2002). In terms of SSCT, proactive behaviour within the career self-management framework is considered a key active component that combines cognitive, social, and personality mechanisms with a variety of career development and sustainability outcomes (Lent et al., 2022). In other words, displaying proactive career behaviours is considered an active agent for individuals to reveal their potential.

Proactive career behaviours include active participatory actions that people take to achieve goals related to their professional and career life (De Vos et al., 2009). An analysis of the literature on proactive career behaviours shows that proactive career behaviours are initially evaluated under four basic dimensions: career planning processes, skill-talent development activities, networking, and idea consultation (Claes & Ruiz-Quintanilla, 1998). Later studies developed a process model of proactive career behaviours by drawing on a broader field of proactivity research (Crant, 2000, De Vos et al., 2009; Grant & Ashford, 2008; Raabe et al., 2007). In this process model, proactive career behaviours consist of six factors under cognitive and behavioural components.

While cognitive components refer to planning processes that include career exploration activities, goal setting, and developing specific plans, behavioural components refer to activities aimed at networking, mentor support, and skill development activities (Claes & Ruiz-Quintanilla, 1998; De Vos et al., 2009, Sonnentag, 2017). The dimensions under the cognitive components refer to the insights that individuals develop in line with their career aspirations, and the dimensions under the behavioural components refer to the behaviours initiated to manage career (De Vos et al., 2009). In other words, behavioural components are clear and observable actions undertaken by people to obtain their career objectives (King, 2004).

Career exploration is defined as a lifelong process indicating that individuals collect information about their careers and test hypotheses about themselves and their environment to achieve their career goals, especially during transition periods of life (Zikic & Hall, 2009). Goal setting is the situation in which an individual anticipates and decides on the career-related outcomes he or she wants to achieve (Greenhaus et al., 1995). In other words, the individual determines the point she wants to reach in the future with the information she obtains as a result of career exploration activities. Developing specific plans is defined as developing plans to support individuals to obtain their career objectives (Seibert et al., 2013). Creating a system of commands for behaviour and action is an indicative of the function of developing specific plans. The literature acknowledges networking as one of the most basic proactive career behaviours. Networking refers to the actions individuals take to initiate, maintain and preserve connections with different people who can support them in their professional endeavours (Forret & Dougherty, 2004). Mentor support refers to a developmental relationship between a younger and less experienced individual and an older and more experienced mentor (Eby et al., 2013). It also involves consulting experienced people and receiving support from them during the career journey (Eby et al., 2013). Skill development activities refer to activities aimed at initiatives and interventions leading individuals to master and become competent in various tasks in their careers (Claes & Ruiz-Quintanilla, 1998). These activities could also be considered participation of individuals in activities that aim to improve themselves and provide them with unique skills to be successful.

An analysis of the literature on proactive career behaviours, along with the research findings mentioned above, reveals that university students exhibiting these behaviours experience positive influences in their career development. Besides, individuals are expected to exhibit these behaviours in terms of career development tasks. In this regard, reliable and valid measurement tools to reveal university students' proactive career behaviour levels are crucial, which help them to have an idea about the nature, form, duration, and direction of the services to be offered. However, an analysis of the literature revealed no measurement tools suitable for Turkish culture to measure university students' proactive career behaviours. Only the "Career Engagement Scale" adapted by Korkmaz et al. (2020) seems to be capable of measuring university students' proactive career behaviours. This scale was developed by Hirschi et al. (2014) in their study conducted with a group of German university students, but they also stated a limitation on the applicability of the scale in other countries and languages. Besides, different from western societies, Turkish society maintains a collectivistic cultural structure (Tagay et al., 2016), which may be reflected in the way Turkish individuals display proactive behaviours with the effect of cultural structure (Smale et al., 2019). Therefore, one of the main purposes of the current study is to develop a measurement tool that is unique to Turkish culture and capable of measuring proactive career behaviours in the local literature.

The "Career Engagement Scale" (Korkmaz et al., 2020), which is used in the local literature to measure university students' level of proactive career behaviours, is a one-dimensional scale. However, the proactive career behaviours process model includes six main proactive career behaviours, each of which has special importance (De Vos et al., 2009). Individuals or groups may be good at exhibiting one proactive career behaviour but not others. Therefore, another important motivation for conducting the current study is to develop a statistically reliable and valid measurement tool that informs about the level of each proactive career behaviour of Turkish university students.

Method

Participants and Procedure

The individuals involved in the present research consist of university students enrolled in Çukurova University in the 2022-2023 academic year. Students were included in the study using a convenient and easily accessible sampling method. Written informed consent was received from the participants, and no personal information was requested. The research followed the principles in the Declaration of Helsinki and received approval and registration from the Çukurova University Ethics Committee (E95704281/604/02/02-443120). During the scale development process, data were collected from three different groups at different times.

Table 1 presents findings in relation to participating individuals within the scope of the validity analysis conducted in the study.

Table 1. Participating Individuals' Characteristics

	Variables		f	%
Exploratory factor analysis	Gender	Female	210	53.4
		Male	183	46.6
		Total	393	100
	School year	1	59	15.1
		2	113	28.8
		3	132	33.6
		4	89	22.6
		Total	393	100
Confirmatory factor analysis	Gender	Female	193	56.2
		Male	150	43.8
		Total	343	100
	School year	1	45	13.1
		2	176	51.3
		3	85	24.8

Table 1 *(Continued)*

		4	37	10.8
		Total	343	100
Criterion-related validity	Gender	Female	148	56.2
		Male	115	43.8
		Total	263	100
	School year	1	43	16.3
		2	82	31.2
		3	71	27
		4	67	25.5
		Total	263	100

As shown in Table 1, exploratory factor analysis was conducted on a sample of 393 students to examine the factor structure of the Proactive Career Behaviours Scale. The participants' ages ranged from 18 to 25, with an average age of 22.2 years. The model fit of the six-factor structure, derived from exploratory factor analysis, was assessed through first-level and second-level confirmatory factor analyses using data from 343 students. The participants' ages ranged from 18 to 24, with an average age of 20.7 years. Finally, for the criterion-related validity study, the measurement tools were administered to a group of 263 students. The participants' ages ranged from 18 to 26, with an average age of 21.4 years. Hence, 999 students participated in the study during the scale development process. Additionally, Cronbach's alpha coefficient, calculated for the reliability analysis of the scale, was determined using data from 343 participants for the confirmatory factor analysis. Another reliability analysis, the test re-test process, was conducted similarly by recollecting data three weeks later from 214 participants in the group of 343 people from whom data were collected for confirmatory factor analysis.

Data Collection Tools

In addition to the Proactive Career Behaviour Scale developed in this study, the “Career Engagement Scale” (CES) and the “Career Adaptability Scale” (CAS) were also used as data collection tools.

The Career Engagement Scale (CES). The Career Engagement Scale (CES), which was developed by Hirschi et al. (2014), assesses the extent to which individuals engage in proactive career behaviours. Korkmaz et al. (2020) adapted the CES into Turkish. The adaptation study was conducted with university students. The CES consists of nine items responded on a five-point Likert scale and measures single dimension. The response options for the scale range from "(1) hardly ever" to "(5) very frequently." Higher scores obtained from the scale indicate a greater level of proactive career behaviours. Cronbach's alpha coefficient determined during the reliability analysis of the adaptation study was .88 for the whole scale. In this study, Cronbach's alpha coefficient was found to be .90.

The Career Adaptability Scale (CAS). CAS was developed by Eryılmaz and Kara (2016) to measure individuals' career adaptability. The scale is responded on a five-point Likert scale with options ranging from “not at all suitable” to “very suitable.” Higher scores obtained from the scale indicate higher career adaptability. The CAS consists of two sub-scales including "career exploration" and "career planning" and consists of 10 items. Cronbach's alpha values obtained from the reliability analysis during the development phase were .85 for the overall scale, .84 for career exploration, and .71 for career planning. In this study, Cronbach's alpha values were .85 for the career exploration sub-scale, .74 for the career planning sub-scale, and .81 for the whole scale.

Proactive Career Behaviours Scale Development Process

The procedures recommended by DeVellis (2016) were implemented during the development of the Proactive Career Behaviours Scale, which included 1) setting the object of measurement, 2) generating the item pool, 3) setting the format for measurement, 4) expert panel review of the pool, 5) creating the trial form of the scale and piloting with the target audience, 6) evaluating the items, and 7) optimizing scale length. First of all, the determination of the structure to be measured requires considering the development of the measurement tool based on theoretical foundations related to the phenomenon to be measured. This provides great convenience in clarifying the scale development process (DeVellis, 2016). In this regard, the relevant literature and theoretical framework were reviewed in detail during the development of the Proactive Career Behaviours Scale. These reviews indicated that the most detailed explanations of proactive career behaviours

are put forward in the proactive career behaviours process model proposed by De Vos et al. (2009). In the process model, proactive career behaviours are discussed under six basic factors: career exploration, goal setting, developing special plans, networking, mentor support, and skill development activities (De Vos et al., 2009).

The process model proposed by De Vos et al. (2009) includes a pool of 48 items developed based on these six fundamental dimensions. Determining the scaling method is the next stage in the scale development process. Likert scale is one of the most frequently used item formats. Utilizing a Likert-type scale allows the declarative statement to benefit from response options that reflect different degrees of agreement or approval with the statement (DeVellis, 2016). Likert-type scales could be 3-point, 5-point, or 7-point. Considering that the number of categories was neither too few nor too many, a 5-point Likert form with options including "never, rarely, sometimes, often, almost always" was preferred during the development of the Proactive Career Behaviours Scale.

The 48 items in the item pool were arranged in line with the preferred scaling format and turned into a form to be presented for expert opinion. This form, along with the information text, was first presented to five academics who specialize in the field of Guidance and Psychological Counselling and work on career development. Six items were removed from the item pool based on the evaluations of field experts, and the final form was reduced to 42 items. This 42-item form was sent to two separate language experts. Revisions were made in line with the suggestions received from language experts, and necessary language revisions were completed. After these stages, 42 items in the item pool were turned into a pilot form for pilot administration. This form was administered to a group of 30 people to determine its comprehensibility. During the administration process, the feedback provided by the students was noted, and the items that were challenging to understand were re-analysed to give their final form. After this stage, the scale was administered to the target population for reliability and validity analysis. The scale includes no reverse-coded items, and higher scores indicate increased proactive career behaviours.

Validity and Reliability Study of the Proactive Career Behaviours Scale

The validity of the Proactive Career Behaviours Scale was assessed through expert opinions, construct validity, and criterion-related validity. Exploratory factor analysis and confirmatory factor analysis were carried out for construct validity. Exploratory factor analysis seeks to identify a limited number of meaningful structures from a larger set of items that can collectively explain the data (Büyüköztürk et al., 2009). Confirmatory factor analysis is employed to assess how well factors derived from various variables, grounded in a theoretical framework, align with actual data (Kline, 2016). Internal consistency was calculated, and the test-retest method was employed for the reliability assessment of the scale.

Data Analysis

Initially, the data collected from the participants were examined to determine whether there were any missing data, and the data of the three individuals with missing data were removed. These data were then entered into the SPSS 26.0 program on the computer. Then, extreme values were examined, normality and linearity assumptions were analysed, and multicollinearity analysis was performed. The data from four participants in the exploratory factor analysis group, the data from two participants in the confirmatory factor analysis, and the data from six participants in the criterion-related validity analysis group were removed from the data set because they had extreme values that would affect normality. Exploratory factor analysis to identify the latent structure of the scale was performed using SPSS 26.0, while confirmatory factor analysis for assessing model fit was conducted with AMOS 24.0. The goodness of fit for the model was assessed using the following criteria: $\chi^2/df < 5$, TLI > .90, CFI > .90, GFI > .90, RMSEA < .10, and SRMR < .08 (Marcoulides & Schumacher, 2001; Tabachnick & Fidell, 2007). Pearson correlation analysis was used when performing criterion-related validity analysis and test-retest analysis. Additionally, Cronbach's alpha was computed to evaluate the internal consistency of the scale.

Results

Results Regarding the Validity of the Scale

Both construct validity and criterion-related validity were assessed as part of the validity for the Proactive Career Behaviours Scale.

Construct Validity

In terms of construct validity, exploratory factor analysis was initially conducted to identify the factor structure of the scale. Confirmatory factor analysis was conducted to assess the accuracy of this factor structure of the scale.

Exploratory Factor Analysis. To determine the factor structure of the Proactive Career Behaviours Scale, a 42-item version of the scale was administered to the participants, followed by exploratory factor analysis. In the exploratory factor analysis, Kaiser-Meyer-Olkin (KMO) and Bartlett's Test of Sphericity were conducted to assess the appropriateness of the data collected from the study group for factor analysis. The KMO test gives statistical insights into the appropriateness of the sample size for exploratory factor analysis of the gathered data. Multivariate normality of the data can be demonstrated with Bartlett's Sphericity (Büyüköztürk, 2016; Çokluk et al., 2016). The KMO value indicates a medium value of 0.60, a good value of 0.70, a very good value of 0.80, and an excellent value of 0.90 (Kalaycı, 2006). In exploratory factor analysis, the eigenvalues of the items should be at least 1, each factor should contribute a minimum of 5% to the total variance of the scale, and that the item factor loading values should be no less than .40 while determining which items to be included in the scale. Additionally, items should load onto a single factor, and for those with adequate factor loading values across two or more factors, there must be a minimum difference of .10 (Stevens, 2009; Tavşancıl, 2010). Finally, when a measurement tool is developed, non-orthogonal techniques should be used when it is assumed that the factors in the measurement tool may be related to each other in the exploratory factor analysis. The most prominent non-orthogonal techniques are Direct Oblimin and Promax techniques (Seçer, 2018). The literature regarding the Proactive Career Behaviours Scale to be developed emphasizes that the factors are potentially interrelated (De Vos et al., 2009). Therefore, this study used the ProMax technique. Taking these requirements into consideration, firstly KMO and Bartlett's test of sphericity were conducted. Table 2 presents the test results.

Table 2. Results of the KMO and Bartlett's Test of Sphericity

KMO		.93
Barlett’s Sphericity Test	$\chi 2$	11260.449
	sd	86
	p	.000

The KMO value approaching 1 indicates that the sample size is adequate, while a significant χ^2 value from Bartlett's Test of Sphericity suggests that the data satisfy the criteria for multivariate normality. The 42-item scale was organized into 6 factors with eigenvalues exceeding 1, and these factors explained 66.94% of the overall variance. However, the analysis revealed 13 items that were not associated with any factors and were redundant; these items were subsequently excluded. After 13 items were removed, exploratory factor analysis was repeated with the remaining 29 items. To assess the appropriateness of the data collected from the study group for factor analysis, KMO and Bartlett's test of sphericity were conducted once more, and the results are demonstrated in Table 3.

Table 3. Results of the KMO and Bartlett's Test of Sphericity

KMO		.91
Barlett’s Sphericity Test	$\chi 2$	7037.600
	sd	406
	p	.000

As seen in Table 3, The KMO value nearing 1 indicates the adequacy of the sample size. According to Bartlett's Test of Sphericity, $\chi 2$ is significant and the data meet multivariate normality. The exploratory factor analysis revealed that 29 items were grouped into 6 factors with eigenvalues greater than 1, which accounted for 70.46% of the variance (Table 4).

Table 4. Eigenvalues and Variance Values of Factors

Factors	Factor Eigenvalue	Explained Variance (%)	Total Variance (%)
Factor 1	9.74	33.61	70.46
Factor 2	3.13	10.79	
Factor 3	2.23	7.69	
Factor 4	2.08	7.19	
Factor 5	1.76	6.07	
Factor 6	1.47	5.07	

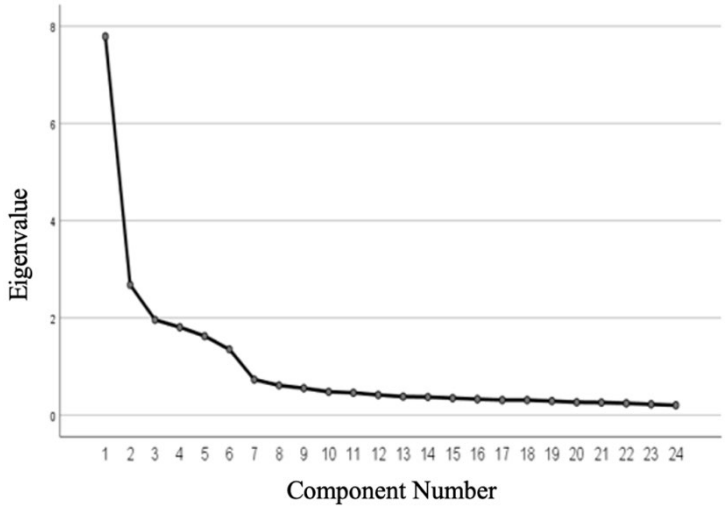
Considering DeVellis's (2016) recommendation on making the scale length appropriate, exploratory factor analysis was conducted again by removing five items with item factor loadings less than .50 to increase the practicality and quality of the 29-item scale version. As in other procedures, KMO and Bartlett's Sphericity Test were first conducted and the results showed that the number of participants was appropriate and the data met multivariate normality (Table 5).

Table 5. Results of the KMO and Bartlett's Test of Sphericity

KMO		.89
Barlett's Sphericity Test	$\chi 2$	5204.265
	sd	276
	p	.000

Consistent with the initial exploratory factor analysis, 24 items were organized into 6 factors with eigenvalues greater than 1, and these factors explained 71.73% of the total variance. By removing five items with factor loadings below .50, the percentage of the remaining items explaining the total variance increased by approximately 1.5 points (Table 6). The examination of the scree plot reveals a 6-factor structure with eigenvalues exceeding 1 (Figure 1).

Figure 1. Scree Plot Graph of Proactive Career Behaviours Scale



The proactive career behaviours process model (De Vos et al., 2009) served as the theoretical framework during the development of the Proactive Career Behaviours Scale. Taking into account the six fundamental proactive career behaviours (career exploration, goal setting, developing special plans, networking, mentor support, and skill development activities) outlined in this model, a pool of items was developed and the created items were submitted for expert review. The six-dimensional structure reached

following the exploratory factor analysis showed parallelism with the 6 basic proactive career behaviours in the proactive career behaviours process model, which is the theoretical framework used when creating the item pool. Accordingly, each factor was named by the item contents using the names of the proactive career behaviours in the process model. In this direction, factor 1 is named as career exploration, factor 2 as goal setting, factor 3 as developing special plans, factor 4 as networking, factor 5 as mentor support, and factor 6 as skill development activities. Following the final exploratory factor analysis, the eigenvalues of the 6-factor structure and the variances they explain are presented in Table 6.

Table 6. Eigenvalues and Variance Values of Factors

Factors	Factor Eigenvalue	Explained Variance (%)	Total Variance (%)
Factor 1	7.79	32.45	71.73
Factor 2	2.68	11.16	
Factor 3	1.96	8.16	
Factor 4	1.80	7.53	
Factor 5	1.62	6.77	
Factor 6	1.35	5.64	

As seen in Table 6, this structure of the measurement tool, consisting of 24 items and 6 factors, explains 71.73% of the total variance value. The order of variance values explained by the factors, from highest to lowest, is factor 1 (32.45%), factor 2 (11.16%), factor 3 (8.16%), factor 4 (7.53%), factor 5 (6.77%) and factor 6. (5.64%). In the scale development process, the variance explained by each factor is recommended to be a minimum of 5% (Stevens, 2009). As seen in Table 6, the variance values for all factors are above 5%. Table 7 presents the factor load values for each item in the scale, along with the common variances they account for, item-total correlation coefficients, and their mean and standard deviation values.

Table 7. Item Factor Loadings, Common Variance, Item Total Correlation, and Mean and Standard Deviation Values of the Proactive Career Behaviours Scale

I	Factor Loadings						Common Variance	Item Total Correlation	Average	Standard Deviation
	F1	F2	F3	F4	F5	F6				
I1	.85						.73	56	3.50	.99
I2	.84						.73	57	3.68	.85
I4	.77						.68	52	3.17	1.10
I6	.74						.67	57	3.70	.91
I9		.64					.47	40	3.66	.86
I12		.82					.68	42	3.67	.91
I13		.86					.73	43	3.67	.92
I14		.88					.77	41	3.79	.91
I17			.85				.74	64	3.54	.97
I18			.89				.77	61	3.47	1.02
I19			.86				.73	60	3.53	1.00
I20			.89				.79	62	3.54	1.01
I22				.66			.66	63	3.46	.93
I23				.56			.60	63	3.50	.91
I26				.89			.76	50	3.13	1.14
I27				.87			.69	46	3.27	1.06
I29					.89		.75	59	3.20	1.05
I30					.86		.77	64	3.15	1.05
I31					.83		.71	62	3.19	1.06
I35					.81		.68	59	2.93	1.08
I36						.84	.77	63	2.90	1.17
I38						.82	.74	58	3.16	1.06
I39						.86	.77	61	3.04	1.17

Table 7 *(Continued)*

I41	.83	.70	58	3.11	1.15

Note 1: *Every correlation is significant at the p < .001 threshold.*
Note 2: *Load values less than .50 are not shown in the table.*
Note 3*: I: Items.*

As shown in Table 7, item factor loadings range from .56 to .89. Item factor load values of .32 or higher suggest that the loadings are adequate (Çokluk et al., 2016; Tabachnick & Fidell, 2007). The lowest common variance explained by the items was .47, while the highest variance was found to be .79. An analysis of the item-total correlations shows that the values are between .40 and .64. Item-total correlations of .30 and above reflect that the scale items are effective in differentiating the measured feature (Büyüköztürk, 2016). Therefore, the scale is sufficient in terms of item-total correlation. Correlation values between the factors were calculated to reveal the relationship between the sub-scales of the Proactive Career Behaviours Scale. The results are shown in Table 8.

Table 8. Correlations between the Proactive Career Behaviours Scale Sub-scales

Sub-Dimensions	**1**	**2**	**3**	**4**	**5**	**6**
1. Career exploration	-					
2. Goal setting	.24**	-				
3. Developing special plans	.47**	.36**	-			
4. Networking	.41**	.35**	.43**	-		
5. Mentor support	.44**	.28**	.39**	.34**	-	
6. Skill development activities	.41**	.29**	.33**	.34**	.52**	-

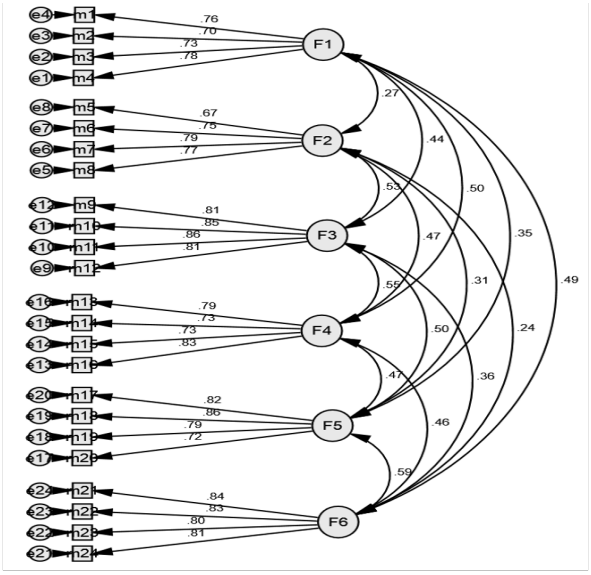
Note. ***p < .01*

An examination of Table 8 reveals significant correlations among all sub-scales of the Proactive Career Behaviours Scale, with values ranging from .24 to .52. It is recommended that the correlation coefficient between the sub-scales should not be .85 or above in terms of multicollinearity problem (Çokluk et al., 2016). Therefore, the results indicate no multicollinearity problem.

Confirmatory Factor Analysis. The fit of the six-dimensional structure of the Proactive Career Behaviours Scale, derived from exploratory factor analysis, was assessed through first-level and second-level confirmatory factor analysis. Meydan and Şeşen (2011) state that when confirmatory factor analysis is performed, second-level multi-factor models of multidimensional scales should also be tested. Therefore, first, confirmatory factor analysis was conducted at the first level, followed by the second-level confirmatory factor analysis.

The goodness of fit values from the first-level confirmatory factor analysis indicate that the model falls within an acceptable range [$\chi 2$ (237, N = 343) = 476.308; p < .001; $\chi 2$/ df = 2.01; TLI = .94; CFI = .95; GFI = .90; RMSEA = .05; SRMR = .04]. Figure 2 illustrates the model for the first-level confirmatory factor analysis, which consists of six factors.

Figure 2. Coefficients of the Diagram for the First-level Confirmatory Factor Analysis Model

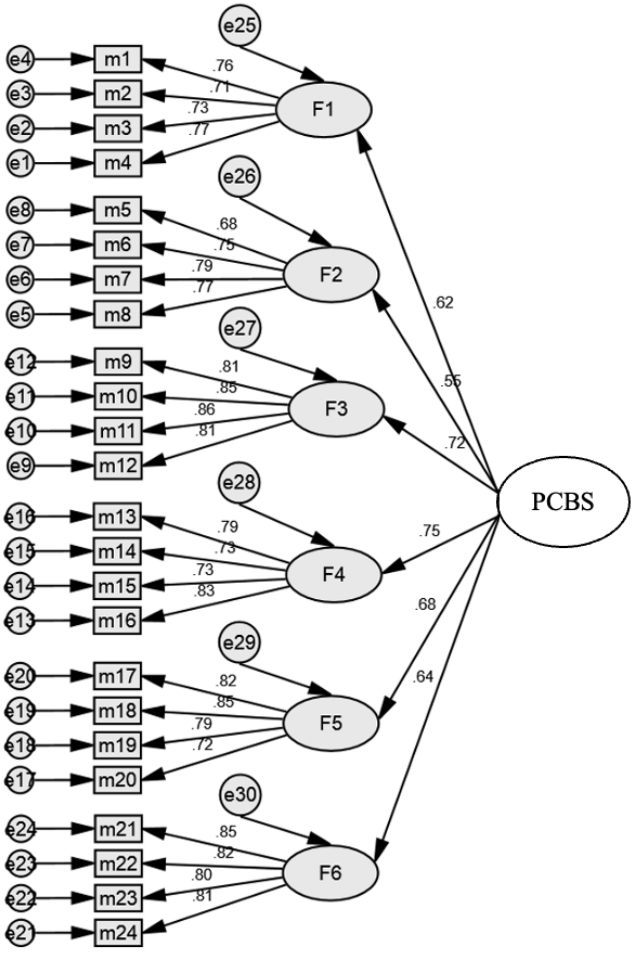


Note. F1: Career exploration. F2: Goal setting. F3: Developing special plans. F4: Networking. F5: Mentor support. F6: Skill development activities.

An analysis of the factor load values of the model shows that they range from .67 to .86. Given that the minimum item-factor loading value suggested in the literature is .30, the item-factor loadings in the model are deemed acceptable (Çokluk et al., 2016). In addition, item-factor load values of .46 and above indicate a good measurement (Büyüköztürk, 2016). Therefore, the outcomes of the first-level confirmatory factor analysis indicate that the measurement is reliable.

After the first-level confirmatory factor analysis was completed, a second-level confirmatory factor analysis was performed. The goodness of fit values from the second-level confirmatory factor analysis indicate that the model falls within an acceptable range [$\chi 2$ (246, N = 343) = 539.074; $p < .001$; $\chi 2/ df = 2.19$; TLI = .93; CFI = .94; GFI = .88; RMSEA = .06; SRMR = .06]. Figure 3 illustrates the model for the second-level confirmatory factor analysis, which consists of six factors.

Figure 3. Coefficients of the Diagram for the Second-level Confirmatory Factor Analysis Model



Note. PCBS: Proactive Career Behaviours Scale. F1: Career exploration. F2: Goal setting. F3: Developing special plans. F4: Networking. F5: Mentor support. F6: Skill development activities.

An analysis of Figure 3 shows that the factor load values within the model range from .68 to .86. Given that the literature suggests a minimum item-factor load value of .30, the item-factor load values in the model are deemed acceptable (Çokluk et al., 2016). In addition, item-factor load values of .46 and above indicate a good measurement (Büyüköztürk, 2016). Therefore, the second-level confirmatory factor analysis results also show a good measurement. These results reveal the suitability of the scale in terms of validity criteria.

Criterion-Related Validity

Another method used within the scope of validity reviews included the criterion-related validity method. While criterion-related validity analysis of the Proactive Career Behaviours Scale was conducted, the one-dimensional "Career Engagement Scale" (Korkmaz et al., 2020) and the two-dimensional (career planning and career exploration) "Career Adaptability Scale" (Eryılmaz & Kara, 2016) were used. Table 9 displays the correlation values among the scales.

Table 9. Correlation Values for Total and Sub-Scale Scores of Measurement Tools

Variables	1	2	3	4	5	6	7	8	9	10	11
1. Career exploration	-										
2. Goal setting	.52**	-									
3. Developing special plans	.65**	.67**	-								
4. Networking	.52**	.41**	.49**	-							
5. Mentor support	.62**	.47**	.58**	.68**	-						
6. Skill development activities	.60**	.32**	.47**	.52**	.56**	-					
7.CAS-Career exploration	.49**	.43**	.47**	.39**	.44**	.39**	-				
8.CAS-Career planning	.43**	.38**	.44**	.37**	.42**	.34**	.62**	-			
9.CES	.51**	.36**	.53**	.49**	.59**	.55**	.61**	.61**	-		
10.CAS	.45**	.46**	.51**	.42**	.48**	.41**	.83**	.86**	.67**	-	
11.PCBS	.81**	.71**	.80**	.78**	.83**	.76**	.53**	.50**	.65**	.58**	-

Note 1. ***p* < .01*

Note 2. *CAS:* Career Engagement Scale. *CES:* Career Adaptability Scale. *PCBS:* Proactive career behaviours Scale.

An analysis of Table 9 shows that there are moderate and significant relationships between the PCBS and CES ($r = 0.65$, $p < 0.01$) and between the PCBS and CAS ($r = 0.58$, $p < 0.01$). It was also concluded that there were moderate and significant relationships between the PCBS and the career exploration ($r = .53$, $p < .01$) and career planning ($r = .50$, $p < .01$) sub-scales of the CAS. Besides, all sub-scales of the PCBS (career exploration, goal setting, developing specific plans, mentor support, networking and skill development activities) were found to be positively and significantly related to the CES and CAS. In summary, increased PCBS is associated with increased CES and increased CAS.

Results Regarding the Reliability of the Scale

Cronbach's alpha internal consistency coefficient was calculated from the data collected from 343 people for confirmatory factor analysis to conduct the reliability analysis of the Proactive Career Behaviours Scale. In addition, reliability analyses based on the test-retest method were calculated with the data obtained from the Proactive Career Behaviours Scale, which was administered to a group of 214 people with three-week intervals. Table 10 presents the analysis results.

Table 10. Cronbach's alpha Internal Consistency Coefficients and Test-Retest Correlations for the Proactive Career Behaviours Scale Total and Sub-Scale Scores

Sub-scale	Cronbach's Alpha	Test-Retest Correlation
Career exploration	.83	.70
Goal setting	.84	.82
Developing special plans	.89	.73
Networking	.85	.73
Mentor support	.87	.69
Skill development activities	.89	.71
Proactive Career Behaviours Scale Total	.91	.86

Note. *All correlations are significant at the p < .01 level.*

As seen in Table 10, Cronbach's alpha values for both the Proactive Career Behaviours Scale as a whole and all sub-scales of the scale range between .83 and .91. Taber (2018) reports that values between .76 and .95 are quite high in terms of reliability. In other words, the internal consistency coefficients of the Proactive Career Behaviours Scale indicates that the scale is reliable. Test-retest correlation values range between .69 and .86. High positive correlation values resulting from test-retest correlations also show the stability of the scale across time (Erkuş, 2005).

Discussion, Conclusion and Recommendations

The purpose of the current research was to produce a reliable and valid tool for evaluating the proactive career behaviours of university students. In this regard, first of all, a comprehensive literature review was conducted to create an item pool for the feature to be measured. The created item pool was revised using the opinions of five field experts and two language experts. Then, a pilot test was conducted on a small group of participants to test the comprehensibility of the items. Following the pilot test, revisions were made based on the feedback received, and the scale was administered to the target audience for validity and reliability analysis. An analysis of the data collected from the participants indicated a measurement tool with valid and reliable psychometric properties consisting of 24 items with 6 factors.

Proactive career behaviours are one of the most important competencies expected from individuals in the career-field in the 21st century (Sylva et al., 2019). Demonstration of these behaviours is considered one of the important elements of a successful career path. Employers expect individuals to take the initiative and be proactive and show proactive behaviours (Brown et al., 2006). Proactive career behaviours are behaviours that have developmental features in both the professional and personal development journey (Doğanülkü, 2024). Proactive career behaviours have an important function, which makes measurement tools that reveal the level at which these behaviours are exhibited by individuals important. Only by using these measurement tools can information be collected about proactive career behaviours, which have an important function for individuals. Therefore, it is very important that these scales comply with validity and reliability criteria. This study aims to develop a scale to serve this function.

Recent employment problems in Turkey cause individuals to experience difficulties in transitioning to work life (Çivilidağ, 2019). Proactive career behaviours facilitate and accelerate the transition to business life (De Vos et al., 2009). Additionally, proactive career behaviours are an important predictor of successful career management (Agrawal & Pradhan, 2023). Therefore, there is a need for practices and studies that improve the proactive career behaviours of university students, to both increase the employment of individuals and support them in carrying out a successful career process. In this regard, measurement tools to provide information about various proactive career behaviour levels of university students have an important role. There are different proactive career behaviours, and each of them is critically important. Therefore, the measurement tool to measure proactive career behaviours should be capable of providing information about the level of each of these behaviours. Thus, by having information about which proactive career behaviours of university students need to be developed, the direction, size, and duration of interventions could be designed to improve these.

Two scales that are frequently used in studies conducted abroad stand out in proactive career behaviours. The Proactive Career Behavior Scale developed abroad by Strauss et al. (2012) is one of these, and this scale consists of 13 items and four sub-scales, which include career planning, skill development, career

consultation, and networking. Another commonly used tool to measure proactive career behaviours is the "Career Engagement Scale" developed by Hirschi et al. (2014). This scale, which included nine items and is one-dimension, was adapted to Turkish by Korkmaz et al. (2020). In other words, the scale does not provide information about the level of each proactive career behaviour of individuals but provides information about the general level of proactive career behaviours. No other measurement tools apart from this were found to have been adapted and developed to measure the proactive career behaviours of Turkish university students. The scale we developed addresses more areas in terms of content compared to these two scales and can measure six different proactive career behaviours. In summary, this research attempted to eliminate this deficiency by developing a measurement tool that would provide information about the level of each of the different proactive career behaviours of Turkish university students.

The current study revealed two important recommendations that may be related to individuals' careers as well as individuals who conduct research and practices in the field of career. Proactive career behaviours are important not only for college students but also for blue-collar and white-collar workers (Bauer et al., 2019). In other words, individuals working for career success are expected to exhibit proactive career behaviours. However, career behaviours demonstrated in a student position and an employee position indicate differences. The Proactive Career Behaviours Scale developed in this research is aimed at university students. Therefore, researchers are recommended to develop the Proactive Career Behaviours Scale Working Individuals Form. The other recommendation presented within the scope of the study is for the staff working in university career centres. One of the important functions of university career centres is to support students and graduates to be proactive and show proactive behaviours (Niles, 2002). In this context, it is suggested that practitioners working in career centres should first apply this scale to the university students and graduates and obtain information about the level of their proactive career behaviours. These measurements enable to identify the proactive career behaviours lacking in students and graduates and design intervention programmes accordingly, which is believed to improve the quality of the services provided to them.

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References

Agrawal, S., & Pradhan, S. (2023). Transformational leadership and career success: a moderated mediation model of proactive career behavior and role ambiguity. *South Asian Journal of Business Studies*. Advance online publication. https://doi.org/10.1108/SAJBS-12-2021-0432

Bauer, T. N., Perrot, S., Liden, R. C., & Erdogan, B. (2019). Understanding the consequences of newcomer proactive behaviors: The moderating contextual role of servant leadership. *Journal of Vocational Behavior, 112*, 356–368. https://doi.org/10.1016/j.jvb.2019.05.001

Brown, D. J., Cober, R. T., Kane, K., Levy, P. E., & Shalhoop, J. (2006). Proactive personality and the successful job search: A field investigation with college students. *Journal of Applied Psychology, 91*, 717–726. https://psycnet.apa.org/doi/10.1037/0021-9010.91.3.717

Büyüköztürk, Ş. (2016). *Sosyal bilimler için veri analizi el kitabı* (22. bs.). Pegem Akademi.

Büyüköztürk, Ş., Kılıç-Çakmak, E., Akgün, Ö., Karadeniz, Ş., & Demirel, F. (2018). *Bilimsel araştırma yöntemleri* (25. Baskı). Pegem Akademi.

Çivilidağ, A. (2019). A phenomenological approach to the unemployment problem: from the views of young unemployed undergraduates. *Mediterranean Journal of Humanities*, *9*(2), 197–217. https://doi.org/10.13114/MJH.2019.485

Claes, R., & Ruiz-Quintanilla, S. A. (1998). Influences of early career experiences, occupational group, and national culture on proactive career behavior. *Journal of Vocational Behavior, 52,* 357–378. https://doi.org/10.1006/jvbe.1997.1626

Çokluk, Ö., Şekercioğlu, G., & Büyüköztürk, Ş. (2016). *Sosyal bilimler için çok değişkenli istatistik SPSS ve LISREL uygulamaları* (4. bs.). Anı Yayıncılık.

Crant, J. M. (2000). Proactive behavior in organizations. *Journal of Management, 26*(3), 435–462. https://doi.org/10.1177/014920630002600304

De Vos, A., De Clippeleer, I., & Dewilde, T. (2009). Proactive career behaviours and career success during the early career. *Journal of Occupational and Organizational Psychology, 82*, 761–777. https://doi.org/10.1348/096317909X471013

DeVellis, R. F. (2016). *Scale development: Theory and applications* (4th ed.). Sage Publications.

Doğanülkü, H. A. (2024). Life goals and proactive career behaviors: The mediating role of visions about the future and the moderating role of intolerance of uncertainty. *Current Psychology, 43*, 72–84. https://doi.org/10.1007/s12144-022-03236-2

Doğanülkü, H. A., & Korkmaz, O. (2023). The role of proactive personality and general self-efficacy in proactive career behavior: A mediation model. *International Journal for Educational and Vocational Guidance*. Advance online publication. https://doi.org/10.1007/s10775-023-09597-9

Eby, L. T., Allen, T. D., Hoffman, B. J., Baranik, L. E., Sauer, J. B., Baldwin, S., Morrison, M. A., Kinkade, K. M., Maher, C. P., & Evans, S. C. (2013). An interdisciplinary meta- analysis of the potential antecedents, correlates, and consequences of protégé perceptions of mentoring. *Psychological Bulletin, 139*, 441–476. https://doi.org/10.1037/a0029279

Erkuş, A. (2005). *Bilimsel araştırma sarmalı*. Seçkin Yayınları

Eryılmaz, A., & Kara, A. (2016). Investigation of psychometric properties of Career Adaptability Scale. *The Online Journal of Counseling and Education, 5*(1), 29–39.

Forret, M. L., & Dougherty, T. W. (2004). Networking behaviors and career outcomes: Differences for men and women?. *Journal of Organizational Behavior, 25*(3), 419–437. https://doi.org/10.1002/job.253

Frese, M., Fay, D., Hilburger, T., Leng, K., & Tag, A. (1997). The concept of personal initiative: Operationalization, reliability and validity in two German samples. *Journal of Occupational and Organizational Psychology, 70*(2), 139–162. https://doi.org/10.1111/j.2044-8325.1997.tb00639.x

Grant, A. M., & Ashford, S. J. (2008). The dynamics of proactivity at work. *Research in Organizational Behavior, 28*, 3–34. https://doi.org/10.1016/j.riob.2008.04.002

Greenhaus, J. H., Callanan, G. A., & Kaplan, E. (1995). The role of goal setting in career management. International *Journal of Career Management, 7*(5), 3–12. https://doi.org/10.1108/09556219510093285

Hirschi, A., Freund, P. A., & Herrmann, A. (2014). The career engagement scale: Development and validation of a measure of proactive career behaviors. *Journal of Career Assessment, 22(*4), 575–594. https://doi.org/10.1177/1069072713514813

Hirschi, A., Herrmann, A., & Keller, A. C. (2015). Career adaptivity, adaptability, and adapting: A conceptual and empirical investigation. *Journal of Vocational Behavior, 87*, 1–10. https://doi.org/10.1016/j.jvb.2014.11.008

Kalaycı, Ş. (2006). *SPSS uygulamalı çok değişkenli istatistik teknikleri*. Asil Yayın Dağıtım.

King, Z. (2004). Career self-management: Its nature, causes and consequences. *Journal of Vocational Behavior, 65*(1), 112–133. https://doi.org/10.1016/S0001-8791(03)00052-6

Kline, R. B. (2016). *Principle and practice of structural equation modelling* (4. ed.). The Guilford Press

Koen, J., Klehe, U. C., & Van Vianen, A. E. (2012). Training career adaptability to facilitate a successful school-to-work transition. *Journal of Vocational Behavior, 81*(3), 395–408. https://doi.org/10.1016/j.jvb.2012.10.003

Korkmaz, O. (2023). Lone wolf personality, career adapt-abilities, proactive career behaviors, and life satisfaction: A serial mediation analyses through the career construction model of adaptation. *Ahmet Keleşoğlu Eğitim Fakültesi Dergisi*, *5*(1), 194-212. https://doi.org/10.38151/akef.2023.50

Korkmaz, O., Kırdök, O., Alkal, A., & Akça, M. Ş. (2020). Kariyer Adanmışlık Ölçeği: Proaktif kariyer davranışlarının ölçümünün geçerlik ve güvenirlik çalışması. *International Social Sciences Studies Journal, 6*(72), 4668- 4677. https://doi.org/10.26449/sssj.2570

Lent, R. W., Brown, D. J., & Hackett, G. (2002). Social cognitive career theory. In D. J. Brown (Eds.), *Career choice and development* (pp. 255–311). Jossey-Bass.

Lent, R. W., Morris, T. R., Wang, R. J., Moturu, B. P., Cygrymus, E. R., & Yeung, J. G. (2022). Test of a social cognitive model of proactive career behavior. *Journal of Career Assessment, 30*(4), 756–775. https://doi.org/10.1177/10690727221080948

Marcoulides, G., & Schumacher, R. (2001). *New developments and techniques in structural equation modeling*. Lawrence Erlbaum Associates Publishers.

Meydan, C. H., ve Şeşen, H. (2011). *Yapısal eşitlik modellemesi AMOS uygulamaları*. Detay Yayıncılık.

Niles, S. G. (2002). *Adult career development: Concepts, issues and practices*. National Career Development Association.

Okolie, U. C., Mlanga, S., Nwosu, H. E., Mezieobi, K., Okorie, C. O., & Abonyi, S. O. (2023). Work placement supervisor support and students' proactive career behaviors: the moderating role of proactivity. *Journal of Career Development, 50*(1), 168–184. https://doi.org/10.1177/08948453211073913

Raabe, B., Frese, M., & Beehr, T. A. (2007). Action regulation theory and career self- management. *Journal of Vocational Behavior, 70*(2), 297–311. https://doi.org/10.1016/j.jvb.2006.10.005

Savickas, M. L. (2005). The theory and practice of career construction. In S. D. Brown, & R. W. Lent (Eds.), *Career development and counseling: Putting theory and research to work* (pp. 42-70). Wiley.

Seçer, İ. (2018). *Psikolojik test geliştirme ve uyarlama süreci: SPSS ve LISREL uygulamaları*. Anı yayıncılık.

Seibert, S. E., Crant, J. M., & Kraimer, M. L. (1999). Proactive personality and career success. *Journal of Applied Psychology, 84*(3), 416–427. https://doi.org/10.1037/0021-9010.84.3.416

Seibert, S. E., Kraimer, M. L., Holtom, B. C., & Pierotti, A. J. (2013). Even the best laid plans sometimes go askew: Career self-management processes, career shocks, and the decision to pursue graduate education. *Journal of Applied Psychology, 98*, 169–182. https://doi.org/10.1037/a0030882

Smale, A., Bagdadli, S., Cotton, R., Dello Russo, S., Dickmann, M., Dysvik, A., ... & Unite, J. (2019). Proactive career behaviors and subjective career success: The moderating role of national culture. *Journal of Organizational Behavior, 40*(1), 105–122. https://doi.org/10.1002/job.2316

Sonnentag, S. (2017). Career Proactivity. In K. Parker and U. K. Bindl (Eds.), *Proactivity at work (*pp. 49–76). Routledge.

Stevens, J. (2009). *Applied multivariate statistics for the social sciences*. Lawrence Erlbaum Associates

Strauss, K., Griffin, M. A., & Parker, S. K. (2012). Future work selves: how salient hoped-for identities motivate proactive career behaviors. *Journal of Applied Psychology, 97*(3), 580–598. http://dx.doi.org/10.1037/a0026423

Sultana, R. G. (2022). Four 'dirty words' in career guidance: From common sense to good sense. International *Journal for Educational and Vocational Guidance*, 1–19. https://doi.org/10.1007/s10775-022-09550-2

Sylva, H., Mol, S. T., Den Hartog, D. N., & Dorenbosch, L. (2019). Person-job fit and proactive career behaviour: A dynamic approach. *European Journal of Work and Organizational Psychology, 28*(5), 631–645. https://doi.org/10.1080/135943 2X.2019.1580309

Tabachnick, B. G., & Fidell, L. S. (2007). *Using multivariate statistics*. Pearson.

Taber, K. S. (2018). The use of Cronbach's alpha when developing and reporting research instruments in science education. *Research in Science Education*, *48*, 1273–1296. https://doi.org/10.1007/s11165-016-9602-2

Tagay, Ö., Voltan-Acar, N., & Nalbant, A. (2016). Practicality of logotherapy concepts and techniques in Turkish culture. *Ege Journal of Education*, *17*(1), 105–126. https://doi.org/10.12984/eed.53493

Tavşancıl, E. (2010). *Tutumların ölçülmesi ve SPSS ile veri analizi* (4. bs.). Nobel Yayınları.

Valls, V., González-Romá, V., Hernandez, A., & Rocabert, E. (2020). Proactive personality and early employment outcomes: The mediating role of career planning and the moderator role of core self-evaluations. *Journal of Vocational Behavior*, *119*, 103424. https://doi.org/10.1016/j.jvb.2020.103424

Zhang, Y., Wang, Q., Zhang, Y., Xu, C., & Xu, Z. (2023). Protean career orientation and proactive career behaviors during school-to-work transition: Mechanism exploration and coaching intervention. *Journal of Career Development*, *50*(3), 547-562. https://doi.org/10.1177/08948453221113545

Zikic, J., & Hall, D. T. (2009). Toward a more complex view of career exploration. *The Career Development Quarterly, 58*(2), 181–191. https://doi:10.1002/j.2161-0045.2009.tb00055.x