

Sources of Meaning Inventory in Academia: An Inventory Development Study*

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ABSTRACT

This paper presents findings from an inventory development study of the 'Sources of Meaning Inventory in Academia' in order to make sense of the psychological processes underlying the experience of meaning in academia. With this inventory, the sources that make the work of academicians meaningful will be determined. By managing the determined sources, it will be possible for the academicians to attribute more meaning to their work and thus increases their performance and productivity. The study was carried out in 3 complementary stages. In Study 1 (n=815), an item pool was created, and after focus group interviews and expert opinions, trial measurements were made by the draft inventory. In Study 2 (n=352), the pilot study of the inventory was carried out and exploratory factor analysis was performed. In Study 3 (n=669), confirmatory factor analysis, reliability analysis and criterion-related validity analysis were performed. As a result of the 3 studies, an inventory consisting of 31 items and 5 dimensions was obtained. According to the model formed, the dimensions of the sources of meaning inventory in academia are 'passion for life', 'scientific contribution', 'benefiting', 'earning money and respect' and 'exploring and learning'. The dimensions of the source of meaning that are most related to the meaningfulness of the work were determined as 'benefiting' and 'passion for life'.

Keywords: Meaning of work, Sources of meaning, Sources of meaning in academia, Inventory development.

JEL Classification Codes: M12, I23, D23.

INTRODUCTION

What is the meaning of work for individuals? Why does work mean different things to different people? In today's business world, the importance of these questions has increased and also the answers of these questions have changed most of the definitions. Today it is known that if the work is meaningless to the employee the organizational performance and productivity will decrease significantly (Cropanzano & Wright, 2001; Dimitrov, 2012: 351; Peiro et al., 2019; Wright, Cropanzano & Bonett, 2007). Today, employees want more from their works and careers rather than to make money, they especially care that their works have meaning (Meinertsen, 2021). Changing dynamics about the performance of employees at work overtime (Darling & Chalofsky, 2004) have caused the traditional work definition to change as well. As a result of the change experienced, Graber and Johnson (2001) defined work not only with its challenging and interesting features, but also as a search for meaning and purpose, and defined work as a tool for one's self-realization and contribution to others. In the following years, business life, which covers a large part of human life (Baumeister, 1991;

Wrzesniewski, 2003; Wrzesniewski, Dutton & Debebe, 2003), even became the center of life and identity, has witnessed the search for meaning.

The meaning of work studies sought an answer to the question: 'What is the meaning of work for individuals?'. In various studies, the answer to this question evaluated with certain scales from the lowest to the highest, and the positive effects of the meaning of the work are tried to be revealed with many concepts in his/her work and non-work life. As a result of the researches, a certain knowledge about the meaning of the work has been formed and a significant level of knowledge has been gained about the effects of this concept. However, another question that needs to be asked has not been discussed yet. This question is: 'What is the source of the meaning of the work?' or 'What makes the work meaningful?' The focus of this research is to reveal the 'sources of the meaning of the work', which has not come to light until now. As a result of revealing the source of meaning, it will be possible to increase the meaning of the work with individual and organizational interventions to the source and effective organizational policies to be applied.

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Academia is one of the most suitable working environments for the search for meaning. Academicians are one of the professions that contribute the most to themselves, their environment, the institutions they are affiliated with, the society and future generations with their activities such as research, obtaining information, examining, transferring information, and presenting scientific information. For this reason, it is of great importance for academicians to find their work meaningful. In the literature, researches on the meaning of many professions have been made (Akgündüz, Adan Gök & Alkan, 2020; Bertosso et al., 2019; Beukes & Botha, 2013), and these studies have revealed the factors affecting meaningful work and the positive results of meaningful work. In the literature review on the meaning of work, qualitative and quantitative studies were also found on the meaning of work in teaching (Balci & Ağ, 2019; Demirkasimoğlu, 2015; Fourie & Deacon, 2015; Mert & Balci, 2019; Toptaş, 2018), and even Göçen & Terzi (2019) have developed a meaningful work scale for educational organizations. However, a limited number of studies on the meaning of work in academia have been identified (Alparslan, Polatçı & Yastioğlu, 2021; Balci, Öztürk & Akar, 2019). And in these studies, content analysis, which is one of the qualitative research methods, and self-evaluations of academicians about the meaning of their works were used.

There are scales measuring whether work is meaningful or not in the literature (Lee, 2015; Lips-Wiersma & Wright, 2012; Steger, Dik & Duffy, 2012), but no scale related to the source of the meaning of work has been found. Research on this subject remained at the theoretical level (Rosso, Dekas & Wrzesniewski, 2010: 108), empirical research and results could not be produced because the scale was not developed on the subject. It is of great importance to deepen qualitative and quantitative research on the source of the meaning of work, which is of great importance for business life. In line with this purpose, in order to fill the gap in the literature, a conceptualization of sources of meaning in academia was made by using qualitative and quantitative research methods, and the 'Sources of Meaning Inventory in Academia' was developed. With this inventory, the sources that make the work of academicians meaningful will be determined. By managing the determined sources, it will be possible for the academicians to attribute more meaning to their work and thus increases their performance and productivity.

CONCEPTUAL FRAMEWORK

Meaning of Work

In the past, the effect of the employee's feelings about the job and the value he places on his job on performance has been ignored. However, over time, what the job means for the individual has changed, and it has been determined that the feelings about the job as well as the factors related to the employee and the job affect job performance (Cartwright & Holmes, 2006: 202). In addition, it has been revealed that positive emotions related to work have

physical effects as well as psychological effects on the job and the individual (Morin, 2008).

Research has been conducted to determine whether work is just a way of making money and sustaining a life for individuals, or more. In some of these studies, the following question was asked to individuals in business life: 'If you had inherited enough money to live comfortably without working, would you still work or would you quit your job?' Results supported the idea that work gives people a sense of purpose in life and connects them to a larger society and a higher purpose beyond themselves. It has also been found that meaningful work plays an important role in creating and maintaining a healthy sense of self-esteem and personal identity (Harpaz, 2002; Morse & Weiss, 1955).

Different perspectives have been developed in defining and conceptualizing the concept of the meaning of work. According to Chalofsky (2003), one of the leading researchers on the meaning of work; it is a way of expressing the meaning and purpose of life through activities in the work process. The meaning of work with other definitions; 'a significant and positive evaluation of the work based on the subjective experiences and interactions the employee has had in the work environment' (Rosso et al., 2010) or 'a feeling about the reasons the person has for his/her job, what he/she seeks to achieve with his/her job, and continuity in his/her job' (Isaksen, 2000: 87). In its most general form, the meaning of work is the answer to that question: 'What is the meaning of work for individuals?' Contrary to the past, individuals attach more importance to the meaning of their jobs than their income, promotion opportunities, working conditions and job security (Bhatnagar & Aggarwal, 2020; Cascio, 2003).

Individuals' attitudes towards their jobs and the meaning they attribute differ, and it is known that there are different dimensions of the meaning of work in the literature. In this context, the meaning of work dimensions developed by Chalofsky (2003), Rosso et al. (2010), Steger et al. (2012), and Lips-Wiersma and Wright (2012) were examined. According to Chalofsky (2003: 77), who is the pioneer of meaningful business studies, meaningful work is a psychological structure that brings a person to 'integrated wholeness' consisting of three dimensions: sense of self, work itself and sense of balance. In the following years, Miller (2008: 93) added the sense of contribution dimension to these three dimensions and dealt with meaningful work in four dimensions. The coming together of these four dimensions enables one to reach wholeness in one's life. Rosso et al. (2010: 95-108) defined the meaning of work in four dimensions. These are the self, other person, work context and spiritual life. Steger et al. (2012: 324-325) examines the meaning of work in three different aspects. These are positive meaning in work, meaning making through work and greater good motivation. With a similar perspective, Lips-Wiersma and Wright (2012: 678) examined the meaning of work in seven dimensions. These are listed as unity with others,

-serving others, expressing full potential, developing and becoming self, reality, inspiration and balancing tension.

The results of the research reveal the positive results of finding the job meaningful both at the individual and organizational level. Looking at the individual consequences of meaningful work, it affects job satisfaction (Bhatnagar & Aggarwal, 2020; Campbell, 1976; Fox, 1980; Frankl, 1996; Hagmaier & Abele, 2012; Kamdron, 2005; Littman-Ovadia & Steger, 2010; Lobene & Meade, 2013; May et al., 2004; Sparks & Schenk, 2001; Steger & Dik, 2010; Steger et al., 2012; Wrzesniewski et al., 1997), happiness (Bhatnagar & Aggarwal, 2020; Golparvar & Abedini, 2014), psychological well-being (Chartwright & Holmes, 2006; Golparvar & Abedini, 2014; Keleş, 2017; Melton & Schulenberg, 2008), hope (Feldman & Snyder, 2005), motivation (Hackman & Oldham, 1980), mental health (Arnold et al., 2007), career development (Dik & Duffy, 2009; Dobrow & Tosti-Kharas, 2011; Domene, 2012; Reich, 2001), and individual performance (Hackman & Oldham, 1980; Wrzesniewski, 2003) on the positive direction; and frustration (Chartwright & Holmes, 2006), stress and depression (Elangovan, Pinder & McLean, 2010; Locke & Taylor, 1990; Treadgold, 1997), and cynicism and burnout (Creed et al., 2014; Hagmaier & Abele, 2012; Holbeche & Springett, 2004) on the negative direction. Considering the organizational consequences of the meaningfulness of work, it affects participation in decisions (Bhatnagar & Aggarwal, 2020; Campbell, 1976; May et al., 2004), organizational commitment (Fox, 1980; Mendes & Stander, 2011), organizational citizenship behavior (Schlechter & Maharaj, 2007) and positive organizational outcomes such as organizational performance, productivity and efficiency (Bunderson & Thompson, 2009; Neck & Milliman, 1994) on the positive direction; turnover intention (Dinç et al., 2019; Duffy, Dik & Steger, 2011) and absenteeism (Wrzesniewski, vd., 1997) on the negative direction.

Sources of Meaning at Work

The statements 'My job is meaningful to me', 'I have a meaningful career', 'My job is important to society' are the statements made by the employee who finds his/her job meaningful. And they bring many positive organizational outcomes such as job satisfaction, motivation and high performance (Dan, Roşca & Mateizer, 2020; Maharaj & Schlechter, 2007; Roberson, 1990). Every day, new studies are added to the studies that reveal the individual and organizational positive results of the meaningfulness of the work, and the importance given to the concept and the researches on this subject are constantly increasing (Rosso et al., 2010: 93). However, the same is not the case for the sources that cause the meaning of the work. There is limited research on the sources of the meaning of work (Dimitrov, 2012).

The concept of the source of the meaning of the work indicates where the meaningfulness of the work is based on (Rosso et al., 2010: 93-95), in other words, which factors enable the work to be perceived as meaningful. The factor or factors that affect the meaning or meaninglessness

experienced by the individual in his/her work (Rosso et al., 2010: 95) are the sources of meaning of the work. If the individual can reach the sources of meaning in his current work, he will find his work meaningful, otherwise his work will not make sense for the individual.

Determining the sources of meaning of the job is of great importance in terms of increasing the level of employees finding their jobs meaningful. In this way, managers will create meaningful conditions for work, reduce employee turnover, increase employee satisfaction with work and life, and gain competitive market advantage with customer loyalty (Dimitrov, 2012: 353). As it is seen, many positive results can be obtained both individually and organizationally by identifying and managing the sources of meaning.

In some studies, the dimensions made by various researchers about the meaning of work are also expressed as the source of the meaning of work. In particular, the four dimensions in the meaning of work model developed by Rosso et al. (2010) are also expressed as the sources of meaning at work (Mercurio, 2019: 30; Rosso, 2010: 95). Bailey and Madden (2016), on the other hand, approached the concept of the source of the meaning at work from a different angle and listed the factors that make up the meaning of work as a whole as organizational meaning, relational meaning, task meaning and profession meaning. Dimitrov (2012) tried to identify the sources of the meaning at work in the tourism sector with qualitative research. As a result of the research, he stated that the dimensions of sources of meaning at work are work itself and pride in the product, the social environment, the self and spirituality at work and becoming a humane organization.

On the other hand, Rosso et al. (2010) also examined the factors that make work meaningful and named them mechanisms of meaning. According to them, these mechanisms consist of seven factors: authenticity, self-efficacy, self-esteem, purpose, belongingness, transcendence, and cultural and interpersonal sensemaking.

Sources of Meaning in Academia

For employees to find their business life meaningful, they need to find the sources of meaning in their business life. This also applies to scientists working in academia. There are limited studies on the factors underlying academicians' finding their work meaningful (Alparslan et al., 2021; Balcı et al., 2019). In these studies, the sources of meaning in the academy were tried to be discovered with qualitative research methods, and no further progress was made.

Balcı et al. (2019) conducted a qualitative research on the factors that make the work of academicians meaningful. As a result of the interviews, it was stated that the academicians mostly saw the individual development and teaching function as the source of the meaning of the work. Alparslan et al. (2021) developed a model for the first time as a result

of qualitative research on academics' sources of meaning at work. They named the model as 'Model of Sources of Meaning in Academia' and brought together ten different sources of meaning. They discussed the source of meaning in four dimensions: 'internal', 'external', 'contribution-oriented' and 'development-oriented'. While the internal meaning sources are the factors that trigger the internal motivation of the person and make the essence meaningful, the external meaning sources express the sources that the person finds meaningful in the external context, apart from the essence. While contribution-oriented people, that is, those who take care of others in their work, believe that it is meaningful to contribute to life and people, development-oriented people live more self-focused and find their own development/success, personal victory and emotional states important/meaningful. According to this classification, an important model has been brought to the literature in the context of meaning sources (Figure 1).

approvals were obtained before commencement. And IBM SPSS V24 and jamovi programs were used in all analyzes.

Study 1 was carried out between June and July 2020 in order to develop the items by following the inductive and deductive approach (Hinkin, 1995) during the creation of the item pool. Survey research design was used to obtain the data. Data were collected from the field using the online survey technique. In the content of the questionnaire, there was an open-ended question in order to determine the meaning that the academicians attributed to their profession, together with the questions containing the socio-demographic-professional information of the participants. The questionnaire was delivered to the participants via a link in the digital environment. The created questionnaire and its link were sent to all universities in Turkey with an

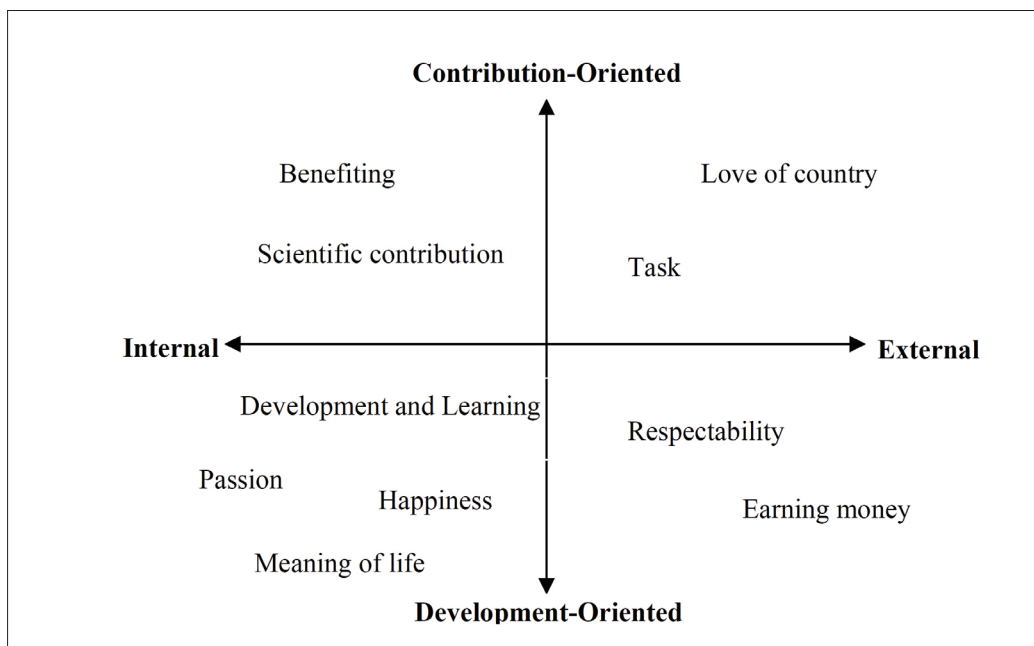


Figure 1. Model of Sources of Meaning in Academia (Alparslan et al., 2021)

In this research, it is aimed to develop the 'Sources of Meaning Inventory in Academia' in order to make sense of the psychological processes underlying the experience of meaning in academia. By this inventory, the resources that make the work of the academicians meaningful will be determined and it will be possible for the academicians to attribute more meaning to their work by managing these resources.

METHODS

Procedure

In this study, which was carried out to develop the Sources of Meaning Inventory in Academia, the three-stage inventory development process suggested by Hinkin (1995) was followed: (1) creating an item pool, (2) structuring the inventory, and (3) evaluating the inventory. Different analyzes were carried out at each stage. Ethical

official letter. The scale was finalized after the creation of the item pool, focus group discussion, expert opinion and pre-pilot application.

As a pilot application, Study 2 was carried out to determine the sub-dimensions of the measured structure in the measurement tool and to test the construct validity. The online survey technique was also used in the Study 2 conducted between December 2020 and January 2021. An online questionnaire containing the questions about the socio-demographic information of the participants and the 53-item 'Sources of Meaning Inventory in Academia' formed in Study 1 were delivered to the participants.

Structural status of the inventory was revealed by exploratory factor analysis on the collected data, then Study 3 was started in order to verify the factor structure of the inventory and test the validity of the criteria. In

the research carried out between February 2021 and April 2021, the online questionnaire, which includes the questions regarding the demographic and professional information of the participants, as well as the 'Sources of Meaning Inventory in Academia' and the 'Meaningfulness of Work Scale' used for criterion-related reliability, was sent to all universities in an official letter.

RESULTS

Study 1

Participants

815 questionnaires were collected from academicians living in 75 different cities of Turkey. Regarding the sample characteristics, 58% were male, 41% were between 31-39 age range. According to the academic titles 15% were professor, 14% were associated professor, 24% were assistant professor, 21% were research assistant and 26% were lecturer.

Establishing The Item Pool

In the process of creating the item pool, first of all, the theoretical framework was created. Then, inductive and deductive approaches suggested by Hinkin (1995) were used during the item development phase to determine the items that were supposed to measure the theoretical construct that was aimed to be measured. In the inductive approach, in order to determine the meanings attributed to the academia, the academicians were asked, 'What does your work/profession mean to you?' through a questionnaire. Thus, the qualitative data obtained from 815 academicians were subjected to content analysis. In the content analysis, the coding process was used to analyze the expressions containing the meanings attributed by the academicians to their work/profession (Strauss & Corbin, 1990). As a result of this analysis, expressions of similar nature were gathered under the same code and a total of 38 codes (source of meaning) were obtained (Table 1).

In the deductive approach, other meaning classifications and contents in the literature, which are thought to include some of the characteristics of the meaning sources of the academia were searched (Balci et al., 2019; Lips-Wiersma & Wright, 2012; Miller, 2008; Rosso et al., 2010; Steger et al., 2012; Toptaş, 2018). Thus, 29 more items that could be the source of meaning for the academia were added and an item pool containing 67 items was created. Then, for the face validity (Şencan, 2005), the simplicity and clarity of the items, that they did not measure more than one feature/judgment, that all of them consisted of positive statements, and that they were easy to answer were checked.

Configuring the Measurement Tool

At this stage of the study, the created item pool (67 items) was presented to the focus group discussion and expert opinion. The focus group discussion was carried out with 12 academics working in the basic fields of social, health and science from three different universities. And two different focus group interviews were held in groups of 6 each. In both focus group discussions, the first question was 'Is your academic life meaningful?', and the second question was 'What is the source of meaning in your academic life?' The participants were encouraged to think with the question, and then the item pool created with the codes obtained as a result of the qualitative research was shared with the participants. At this stage, each item was discussed and joint decisions were made. In order to make some items more understandable, revision suggestions, and suggestions for adding and removing items were taken. The meetings were ended where it was thought that the production of ideas had ended. After the focus group discussions, the authors came together and combined the suggestions, evaluated them and created a draft inventory of 65 items.

Table 1. The Meanings Academicians Attributed to Their Professions (Code List)

Success	Educate people	Sanctity of the profession	Prestige
Contributing to others	Be beneficial to humanity	Heritage	Responsibility
Contributing to science	Love the profession/job	Happiness	Passion
Make difference	Dignity	Struggle	Serve the country
Livelihood	Be a good person	Honor/pride	Future of the country
Build a future	Career	Learn	Motivation to produce
Task	Self-actualization	Teach	Conduct of life
My dream	Explore/ Curiosity	Feel special	Take pleasure/ enjoy
The meaning of life	Self-improvement	Freedom	
Peace	Spiritual pleasure	Earning money	

N=815

Note: Codes are given in alphabetical order.

Expert opinion is important for the content validity of the inventory. In this context, the 65 item inventory was submitted to expert opinion at the last stage of content validity. From 6 faculty members working in 2 psychology, 2 education and 3 management and organization fields contributed to the inventory according to their expertise. In line with the opinion of the experts, the content validity ratio was used in order to obtain more reliable results from the subjective opinions in order to make the decision to remain or remove the items from the inventory. For the reliability of the evidence for content validity, the Lawshe method, which is generally preferred (Ayre & Scally, 2014; Lawshe, 1975) was used in the calculation of the compliance rate. The content validity ratio (CVR) specific to each item was calculated with the data obtained from the evaluations of the experts. Although there are different critical values for the CVR ratio according to the number of experts (Ayre & Scally, 2014: 85), in order for the item to remain in the inventory, it is recommended that the CVR value should not be below 0.78 at the $\alpha=0.05$ significance level (Polit & Beck, 2006). In this study, after calculating the CVR values, five items below the critical value of 0.78 were removed from the inventory. In addition, expression changes were made in some items in line with the general suggestions from the experts. Thus, the draft inventory consisting of 60 items took its final form.

Preparation of the Inventory and Trial Measurement

The main purpose of the trial measurement is to test the face validity of the items, whether they are perceived in the same way or not by the participants (Yurdabakan & Çüm, 2017: 116). At this stage, a questionnaire containing 60 items was created. In the questionnaire form, an explanation was given to the participants about reviewing all sources of meaning and answering the questionnaire by considering the importance of each source of meaning while performing their profession. A 10-point Likert-type rating was used in the selection of inventory options as '1=Not at all Important ... 10=Extremely Important'. After the preparation of the questionnaire form, a trial measurement was made to 103 academicians. After the application was completed, 7 items that were not found appropriate by the participants, could not be answered easily and were not sufficiently understandable were removed from the inventory. In the last case, an inventory consisting of 53 items was obtained.

Study 2

Participants

358 academicians participated in Study 2, which was conducted for the pilot application. 6 questionnaires with incomplete or extreme values were removed from the data set, and in the last case, analyzes were carried out on 352 data. In the study, 46% of the participants were women, and 49% were between the ages of 23 and 36, while 51% were between the ages of 37 and 66, 91% were working in public universities and 54% were in social sciences area.

Findings Related to Exploratory Factor Analysis (EFA)

In the 53 item inventory, EFA was performed using the varimax rotation technique to determine the factors (implicit structure) and to test the relationships between the items in this latent structure (Tabachnick & Fidell, 2013). Before proceeding to the factor analysis, the correlation between the items was checked and it was determined that the items did not show a correlation above 0.8 (Field, 2013). In addition, the Barlett test, Kaiser-Meyer-Olkin test were used to control the factorability of the scale, and the anti-image correlation was examined. As a result of Bartlett test, chi-square test is significant [$\chi^2(66) = 8852,353$; $p < .000$], the KMO value is very good ($0.926 > 0.80$), and the lowest value was found to be 0.816 (> 0.50) when the diagonal values were examined in the anti-image correlation matrix. Findings regarding the factorability of the measurement tool show that the data are suitable for factor analysis (Field, 2013).

The number of dimensions was not limited while performing the factor analysis. While deciding on the factor structure, the scree plot was examined and the dimensions with an eigenvalue above 1 were evaluated. As a result of the analysis, a 5-factor structure was revealed. Then, the factor loadings of the items were examined, and it was determined that there were items with a factor load of less than 0.40, with a load value in more than one factor, and with a difference between factor loads of less than 0.10 (Tabachnick & Fidell, 2013). Relevant items were removed from the scale one by one and the analysis was repeated each time. In the last case, 16 items were excluded from the analysis; considering the theoretical framework, a structure consisting of 37 items with 5 factors was obtained and it was seen that these factors explained 56.070% of the total variance.

When Table 2 is examined, it is seen that 11 items in the first factor, 10 items in the second factor, 8 items in the third factor, 5 items in the fourth factor and 3 items in the fifth factor. The factor loadings of the items ranged from 0.43 to 0.82. The factors explain 38.422%, 8.271%, 6.090%, 5.290% and 3.742% of the variance, respectively. By examining the meanings of the items collected in the factors on the basis of the theoretical framework; the first factor was named as 'passion for life', the second factor as 'scientific contribution', the third factor as 'benefiting', the fourth factor as 'earning money and prestige' and the fifth factor as 'exploration and learning'. The Cronbach Alpha (α) internal consistency value was calculated for the estimation of reliability in the context of each dimension. As a result of the reliability analysis, Cronbach's alpha values ranged from 0.81 to 0.92.

In addition, item analysis based on item-total correlation and item analysis based on lower and upper groups were performed to test internal consistency reliability (Table 3).

Table 2. Exploratory Factor Analysis and Reliability Results

Dimension	Item	Fac. Loads	Eigenvalue	Exp.Variance (%)	α
Passion for Life	Item 1	.791	14.216	38.422	0.92
	Item 2	.686			
	Item 3	.639			
	Item 4	.631			
	Item 5	.630			
	Item 6	.599			
	Item 7	.570			
	Item 8	.545			
	Item 9	.518			
	Item 10	.479			
	Item 11	.430			
Scientific Contribution	Item 12	.711	3.060	8.271	0.85
	Item 13	.683			
	Item 14	.639			
	Item 15	.579			
	Item 16	.576			
	Item 17	.558			
	Item 18	.541			
	Item 19	.524			
	Item 20	.520			
	Item 21	.501			
Benefiting	Item 22	.814	2.253	6.090	0.87
	Item 23	.776			
	Item 24	.644			
	Item 25	.638			
	Item 26	.627			
	Item 27	.561			
	Item 28	.553			
	Item 29	.549			
Earning Money and Respect	Item 30	.823	1.957	5.290	0.83
	Item 31	.744			
	Item 32	.666			
	Item 33	.649			
	Item 34	.470			
Exploring and Learning	Item 35	.768	1.384	3.742	0.81
	Item 36	.730			
	Item 37	.429			
Total Explained Variance:		56.070			
<i>N</i> = 352; α = Cronbach Alfa					

Table 3. Item Analysis Results

Dimension*	Item	Adj. Item Total Correlation (N=352)	27% Upper Group (N=95)		27% Lower Group (N=95)		t	Cohen's d
			Ort.	S.	Ort.	S.		
1	Item 1	.793	9.74	.687	6.34	2.086	15.085***	2.20
	Item 2	.706	9.55	.987	5.29	2.466	15.604***	2.27
	Item 3	.741	9.85	.412	6.96	1.850	14.884***	2.15
	Item 4	.714	9.94	.245	7.75	1.707	12.375***	1.80
	Item 5	.751	9.84	.512	7.00	1.564	16.831***	2.44
	Item 6	.740	9.71	.713	6.68	1.953	14.164***	2.06
	Item 7	.699	9.78	.687	7.23	1.795	12.918***	1.88
	Item 8	.693	9.91	.388	7.58	1.654	13.346***	1.94
	Item 9	.695	9.91	.294	7.78	1.538	13.235***	1.92
	Item 10	.591	9.92	.347	8.42	1.403	10.077***	1.46
	Item 11	.637	9.96	.202	8.42	1.135	12.990***	1.89
2	Item 12	.649	9.99	.103	8.91	1.158	9.087***	1.31
	Item 13	.647	9.96	.202	8.76	1.191	9.679***	1.40
	Item 14	.579	9.98	.144	8.96	1.020	9.659***	1.40
	Item 15	.562	9.82	.601	8.66	1.190	8.463***	1.23
	Item 16	.534	9.89	.371	9.02	1.000	7.985***	1.15
	Item 17	.527	9.47	.966	7.48	1.873	9.202***	1.33
	Item 18	.568	9.99	.103	8.79	1.287	9.057***	1.31
	Item 19	.545	9.92	.453	8.61	1.240	9.634***	1.40
	Item 20	.584	9.86	.402	8.28	1.404	10.536***	1.53
	Item 21	.605	9.95	.224	7.97	1.660	11.517***	1.67
3	Item 22	.742	9.98	.144	8.24	1.706	9.890***	1.44
	Item 23	.721	9.86	.612	7.47	2.072	10.778***	1.56
	Item 24	.633	9.69	.800	6.80	2.350	11.365***	1.65
	Item 25	.654	9.97	.176	8.79	1.020	11.102***	1.61
	Item 26	.664	9.89	.371	7.38	1.793	13.389***	2.00
	Item 27	.611	9.86	.518	8.09	1.186	13.321***	1.94
	Item 28	.677	9.92	.453	8.44	1.310	10.358***	1.51
	Item 29	.543	9.86	.475	8.13	1.223	12.907***	1.87
4	Item 30	.680	8.79	1.624	6.02	2.021	10.408***	1.51
	Item 31	.617	8.21	2.036	4.82	2.352	10.619***	1.54
	Item 32	.709	9.60	.856	6.60	2.381	11.558***	1.68
	Item 33	.513	8.80	1.843	4.94	2.259	12.916***	1.87
	Item 34	.657	9.00	1.902	5.22	2.307	12.319***	1.79
5	Item 35	.750	9.97	.228	8.65	1.039	12.052***	1.76
	Item 36	.720	9.98	.144	8.42	1.087	11.919***	2.01
	Item 37	.525	9.97	.176	8.52	1.175	13.842***	1.73

N=352; ***p<.001. df=188

*Note: Dimension 1= Passion for Life; Dimension 2= Scientific Contribution; Dimension 3= Benefiting; Dimension 4= Earning Money and Respect; Dimension 5= Exploring and Learning

Table 4. Confirmatory Factor Analysis and Reliability Results

Please indicate how important the sources of meaning in the work presented below mean to you, in order of importance. (1=Not at all important, 10=Very important)

Dimension	Item	Fac. Loads*	α			
Passion for Life	1 My way of life	.693	0.881			
	2 Discover myself	.770				
	3 Make life meaningful	.632				
	4 My inspiration	.789				
	5 Way of expressing myself	.743				
	6 My energy source	.671				
	7 My source of spiritual pleasure	.706				
Scientific Contribution	8 To contribute to science	.720	0.857			
	9 To research	.642				
	10 To leave useful works	.752				
	11 To contribute to other researchers with my research	.660				
	12 To transfer knowledge and experience	.601				
	13 To be a known academic in my field	.631				
	14 To do work that I'm proud of	.708				
Benefiting	15 To be successful	.637	0.843			
	16 To benefit the university/institution	.659				
	17 To serve the region I live in	.642				
	18 To raise beneficial generations for society	.632				
	19 To represent my country with my profession	.725				
	20 To contribute to practitioners in the field	.716				
	21 To educate students	.609				
Earning Money and Respect	22 To serve humanity	.727	0.829			
	23 To earn financial gain	.642				
	24 To earn additional income as a result of my work	.690				
	25 To have a title	.804				
Exploring and Learning	26 To gain power	.730	0.832			
	27 Love of learning	.656				
	28 The excitement of learning and teaching	.633				
	29 Being open to innovations	.679				
	30 To specialize	.730				
	31 To provide professional development	.776				
Goodness of Fit Indices		X ² /df	SRMR	CFI	TLI	RMSEA
		1419/419 (3.39)	0.445	0.91	0.90	0.0597
Acceptable Values**		3 < X ² /df < 5	< 0.80	> 0.90	> 0.90	< 0.80

N=669;

* $p < 0.001$

** Hu & Bentler (1999); Byrne (2016)

Item-total correlation is expected to be higher than 0.30 (Karagöz, 2019: 1004). In this study, it was in the range of 0.513 – 0.793. In item analysis based on lower and upper groups, it is recommended that the upper group averages be larger and there should be a significant difference between the lower and upper groups in order for the items to have the distinguishing feature (Karagöz, 2019: 1011). In the 27% lower-upper group comparison, it was determined that there was a significant difference between the averages of the lower-upper groups ($p < 0.001$) and the t values were positive. Cohen's d effect size was calculated to determine the size of the differences between the groups. The Cohen's d effect size values of the items vary between 1.23 and 2.44, and the difference between the groups has a large effect size (Cohen's $d > 0.80$). Therefore, it can be said that the inventory has internal consistency and that all items are sufficient to distinguishing feature to be measured.

In addition, normality was tested for the mean scores of the dimensions determined as a result of CFA and correlation analysis was performed. The skewness values ranged from -.655 to -1.249, and the kurtosis values (kurtosis) ranged between .661 and -1.789. Therefore, normality was achieved (Tabachnick & Fidell, 2013). Correlation analysis was carried out in order to reveal the interdimensional relationships. Significant and positive relationships were found between all dimensions ($p < 0.001$).

Study 3

Participants

670 academicians from 68 universities participated in the last stage of the research. 1 questionnaire, which was determined as an extreme value in the data set, was removed from the data set, and in the last case, descriptive statistics were examined on the data of 669 participants and hypothesis tests were carried out. Considering the gender distribution of the academicians participating in the research, 52.8% of the participants were male, 37% were in the age range of 36-44, 89% were working in public universities and 47% were in social sciences area.

Confirmatory Factor Analysis (CFA) Findings and Reliability Analysis

The jamovi 1.6.23 (The jamovi Project, 2021) package program was used in the analysis of the collected data. In order to create additional evidence for the construct validity of the measurement tool, whose factor structure was revealed by exploratory factor analysis, CFA was performed using the maximum probability method on the data obtained from Study 3. Before starting the analysis, the assumption of normal distribution was tested.

As a result of the EFA performed in the previous step, a structure consisting of 37 items and 5 factors was obtained. In this stage, 2 items removed from the inventory because of lower factor loads included in the

CFA analysis. Therefore, the structure of the Sources of Meaning Inventory in Academia, which consists of 39 items and 5 factors, was tried to be verified with CFA (Table 4).

As a result of the CFA, the standard regression coefficients and modification suggestions were examined due to the poor model fit values, and 8 items with a standard regression coefficient below 0.60 and which impair the goodness of fit according to the modification suggestions were excluded from the scale.

When Table 4 is examined, it is seen that the factor loadings of the items in the last case ranged from 0.609 to 0.776 ($p < 0.001$). As the goodness of fit values showed acceptable results [$\chi^2/df = 1419/419$ (3.39), SRMR=0.445, CFI=0.91, TLI=0.90 and RMSEA=0.0597] (Hu & Bentler, 1999; Byrne, 2016), the structure of the inventory was confirmed.

The Cronbach Alpha internal consistency coefficient (α) was calculated to test the reliability of the inventory whose structure was confirmed as a result of CFA. The α coefficient of the dimensions is in the range of 0.83 – 0.88. Values indicate that internal consistency reliability is achieved (Field, 2013). In the analysis, the item-total correlation values for all dimensions and the correlation map showing the inter-item correlation were examined. It was determined that all of the item-total correlations in all dimensions were above the threshold value of 0.25 (Karagöz, 2019) and the correlation values between the items were in the range of 0.30 – 0.80 (Tabachnick & Fidel, 2013). Values indicate that internal consistency reliability is provided.

Criterion-Related Reliability

Criterion-related validity was examined as concurrent validity (DeVellis, 2017). In order to test the criterion-related validity of 669 data obtained with Study 3, besides the 'Sources of Meaning Inventory in Academia' whose structure was validated by this research, The Meaningfulness of Work Scale which was developed by Steger et al. (2012) and validated in Turkish by Fındıklı et al. (2017), was used. As a result of the CFA performed with the meaningfulness of work scale, its structure as a one-dimensional scale was confirmed [$\chi^2/df = 66.5/13$, CFI=0.971, TLI=0.953, RMSEA=0.0784]. The Cronbach Alpha reliability coefficient value of the scale was determined as 0.86.

Correlation analysis was performed to test concurrent validity. According to the findings (Table 5), it is seen that there are positive and significant relationships between all dimensions of the sources of meaning inventory in academia and the meaningfulness of work scale ($p < 0.001$). Thus, it can be said that concurrent validity is ensured. The final version of the scale is presented in Appendix 1.

Table 5. Descriptive Statistics and Correlations

Variables	1	2	3	4	5	6
1. Passion for Life	1					
2. Scientific Contribution	.587***	1				
3. Benefiting	.683***	.640***	1			
4. Earning Money and Respect	.431***	.335***	.355***	1		
5. Exploring and Learning	.693***	.694***	.763***	.308***	1	
6. Meaning of Work	.508***	.403***	.516***	.213***	.485***	1
Mean	8.49	9.20	8.91	6.63	9.21	4.28
Standard deviation	1.23	.787	1.02	2.02	.794	.575
Skewness	-.707	-1.00	-.880	-.507	-.856	-.585
Kurtosis	-.048	-.462	-.181	-.098	.049	-.146

*N=669; *** $p < 0.001$*

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

In the literature, the meaning of work is expressed as a significant and positive evaluation of work based on subjective experiences and interactions in the work environment (Rosso et al., 2010). The source of meaning of the work examines the factors that enable the individual to perceive the work as meaningful. Determining the sources of meaning of the work is of great importance in terms of increasing the level of employees finding their jobs meaningful. By identifying the sources of meaning, managers will create meaningful conditions for the work, decrease the employee turnover rate, increase the work-life satisfaction of the employees and gain competitive market advantage with customer loyalty (Dimitrov, 2012: 353). Examining the sources of meaning causes many positive results both individually and organizationally.

Although it has great importance in terms of individual and organizational aspects, there are not enough studies on the sources of meaning of work yet. While there are many studies on the positive results of the meaning of work in the literature (Bhatnagar & Aggarwal, 2020; Bunderson & Thompson, 2009; Chartwright & Holmes, 2006; Dik & Duffy, 2009; Dinç et al., 2019; Dobrow & Tosti-Kharas, 2011; Domene, 2012; Hagmaier & Abele, 2012; Littman-Ovadia & Steger, 2010; Lobene & Meade, 2013; Melton & Schulenberg, 2008; Mendes & Stander, 2011; Uzunbacak & Akçakanat, 2018), research on the source of meaning is limited (Bailey and Madden, 2016; Mercurio, 2019; Rosso et al., 2010). In these studies, the theoretical framework was generally tried to be defined; empirical research is thought to be insufficiently focused.

The aim of this study is to develop an inventory in order to determine the sources of meaning of the work in the academic profession. In this way, the factors that make the academic profession meaningful will be revealed and it will be possible to manage these factors in a way that produces positive results.

In the study, the scale development process consisting of qualitative and quantitative stages was followed, and the Sources of Meaning Inventory in Academia was developed, consisting of 5 dimensions (passion for life, scientific contribution, benefiting, earning money and respect, exploring and learning) and 31 items. There are 7 items in the passion for life dimension, 8 items in the scientific contribution dimension, 7 items in the benefiting dimension, 4 items in the earning money and respect dimension, and 5 items in the exploring and learning dimension of the inventory.

There are scales to evaluate the meaning of work in the literature (Lee, 2015; Lips-Wiersma & Wright, 2012; Steger et al., 2012), but no scale has been found to determine the source of the meaning of work. For this reason, research on the source of meaning of the work remained at the theoretical level (Rosso et al., 2010: 108), and empirical research and results could not be produced because the scale was not developed on the subject. It is of great importance to deepen qualitative and quantitative research on the source of the meaning of work, which is of great importance for business life. The most important contribution of this study is that it fills the gap in the literature on this subject by presenting an inventory of meaning sources.

In future research, individual and organizational results that are affected by the sources of meaning can be revealed by using the Sources of Meaning

Inventory in Academia. Differences in sources of meaning can be studied according to the demographic and socio-cultural characteristics of academics, their fields of study and seniority. By means of this inventory, the meaning sources that reveal more positive results can be determined and the development of the said meaning source(s) can be achieved. On the other hand, by determining the sources of meaning that will be beneficial for the academia, significant contributions can be made to the career orientation and personnel selection processes in public and foundation universities.

In this study, the sources of meaning were examined through academics, who are considered as one of the most suitable environments for the search for meaning. The reason for this is to focus on academics and to make a comprehensive inventory of academics by examining the sources of meaning belonging to this profession group in depth. However, this situation also constitutes the most important limitation of the research. In future studies, inventories can be developed for the sources of meaning in different occupational groups, as well as an inventory that can cover all occupational groups in general.

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Appendix 1: Sources of Meaning Inventory in Academia

How important the sources of meaning in the work presented below mean to you?

1. My way of life
2. Discover myself
3. Make life meaningful
4. My inspiration
5. Way of expressing myself
6. My energy source
7. My source of spiritual pleasure
8. To contribute to science
9. To research
10. To leave useful works
11. To contribute to other researchers with my research
12. To transfer knowledge and experience
13. To be a known academic in my field
14. To do work that I'm proud of
15. To be successful
16. To benefit the university/institution
17. To serve the region I live in
18. To raise beneficial generations for society
19. To represent my country with my profession
20. To contribute to practitioners in the field
21. To educate students
22. To serve humanity
23. To earn financial gain
24. To earn additional income as a result of my work
25. To have a title
26. To gain power
27. Love of learning
28. The excitement of learning and teaching
29. Being open to innovations
30. To specialize
31. To provide professional development