

Validity and Reliability of the Future Decent Work Scale with Turkish Vocational and Technical High School Students¹

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Abstract

The working conditions of individuals in their workplaces must have human conditions. The characteristics that should be in a decent job are listed as safe working conditions, sufficient free time and rest hours, organizational values that complement family and social values, adequate compensation, and access to health services. The aim of this research is to study the validity and reliability of the Future Decent Work Scale on Vocational and Technical Anatolian High School students which measures individuals' perceptions of decent work that they can obtain in the future. Within the scope of the validity and reliability studies of the scale, data were collected from 545 Vocational and Technical Anatolian High School students. In order to test the construct validity of the scale, Confirmatory Factor Analysis (CFA) was used and criterion-related validity was examined. Cronbach Alpha and McDonald's Omega coefficients were calculated for reliability evidences. CFA results revealed that, the goodness of fit indices of the scale indicated good (GFI=.93, AGFI=.90) and acceptable ($\chi^2/df=3.943$, RMSEA=.074, SRMR=.069, CFI=.85) level of fit indices. The Cronbach Alpha internal consistency coefficient was calculated as .77 for the scale. These results show that the scale is a valid and reliable measurement tool on Vocational and Technical Anatolian High School students.

Keywords: Decent work, Decent work perceptions, Psychology of Working Theory, Vocational education, High school students.

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Introduction

The concepts of job and work are concepts that have existed in people's lives for centuries and are inevitable to continue their existence. One of the reasons for this is that these concepts have the potential to meet the three basic needs of the individual such as survival, social connection and self-determination needs (Blustein, 2013). Similarly, Duffy et al. (2016) emphasized that job and work have a basic function and that this function is the contribution of individuals to protect their physiological and psychological health, meet their needs and get satisfaction from their life. In this direction, it has been pointed out that a job must meet certain conditions to meet these needs of individuals (Blustein, 2008). Jobs that meet these conditions are defined as “decent work” (International Labor Organization [ILO], 1999). The ILO (1999, 2017) states that as the characteristics of decent work are fair wages, safe work environment, social protection for employees and their families and better opportunities in terms of personal and social aspects, a free work environment, equal opportunities for women and men. From this point of view, the Psychology of Working Theory (PWT, Duffy et al., 2016), which is based on the Psychology of Working Framework (Blustein, 2001; 2002; 2006; 2008; 2013), revealed five factors as following; safe working conditions, adequate free time and rest, organizational values that complement family and social values, adequate compensation, and permit access to health services. Accordingly, it is seen that decent work is a multidimensional structure that fulfills all these qualities and conditions, and the offering a definition for decent work, as well as making decent work possible for all people, becomes an important issue.

PWT (Duffy et al., 2016) focused on decent work and examined the processes of individuals to reach decent work in depth and presented a model that included these components. In this model, economic constraints, and marginalization (due to race, ethnic identity, social class, gender, etc.) that can be considered as contextual inputs are included as determinants of decent work. In addition, there are career adaptability and work volition, which can mediate the role of contextual inputs on accessing decent work, can be evaluated as psychological variables. The model points out to the role of four additional variables whose moderating role is emphasized, which have a potential to either strengthen or weaken the relationships between contextual variables (economic constraints and marginalization), psychological variables (career adaptability and work volition) and decent work. According to the model proposed, moderator variables were remarked as critical consciousness, proactive personality, social support, and economic conditions. Within the scope of the model, decent work can be treated as both a predictor and an outcome variable. In this regard, the model's outcome variables, in other words, the variables predicted by decent work are work fulfillment and well-being (Duffy et al., 2016). Individuals will meet their three basic needs (survival, social connection, self-determination) through decent work, and the ability to meet their needs will affect their work fulfillment and well-being (Buyukgoze-Kavas & Autin, 2019; Duffy et al., 2016; Kozan et al., 2019). As can be seen, this model, created within the framework of the theory, emphasizes the variables that can be effective in reaching and maintaining a job that offers decent conditions, and that reaching a decent job will contribute to general well-being.

In this theory, the predictors and outcome variables of decent work are briefly explained above. It is also emphasized that social class, privilege, and freedom of choice play a direct role in career choice (Duffy et al., 2016). For this reason, individuals who are members of a disadvantaged group based on their socioeconomic status, could not have sufficient access to financial and social capital (e.g., in terms of factors such as race, ethnic identity, social class, gender), and who are forced to make work-based transitions reluctantly may have problems in finding a job with decent conditions again. Considering the effects of decent work on important components of mental health such as well-being and life satisfaction (Blustein, 2013), it becomes an utmost importance to support disadvantaged individuals who may encounter many individual and environmental barriers in accessing decent work. International research reveals that especially in countries with low welfare levels and heavy working conditions, the well-being levels are low (Diener et al., 2015; Marks et al., 2006). In a study conducted by the American Psychological Association (APA, 2020) with 3500 working adults, it was stated that 78% of the participants regularly felt stressed due to factors such as high workload and lack of job security, and 20% of them had worse psychological health compared to the previous year. In addition, there are also studies concluded about the critical role of work experience in society, especially people

who are poor and in working class (Ali, 2013; Blustein et al., 2002; Noonan et al., 2007). Moreover, studies have determined that experiences of discrimination and marginalization negatively affect the career development process (Flores et al., 2011; Eggerth et al., 2012), and high barriers and work volition have negative effects on fulfilling the requirements of the career decision-making process (Blustein, 2008; Duffy et al., 2012; Duffy et al., 2015).

On the other hand, research on decent work within the framework of theory usually focuses on working adults and university students. In the study conducted by Kim et al. (2019), university students' perceptions of securing and maintaining decent work have significant relationships with economic resources, work volition, and career adaptability. In studies conducted in Turkey on decent work, it has been observed that there are positive associations between decent work and job and life satisfaction, and negative associations between decent work and attempting to quit work (Buyukgoze-Kavas & Autin, 2019; Işık et al., 2019; Kozan et al., 2019). As a result of the findings, it is seen that the relationships between the predictors of decent work (economic constraints and marginalization) and outcome variables (work fulfillment and well-being) suggested in the PWT (Duffy et al., 2016) are significant. However, it is suggested that the results of research on the model put forward by the theory should be investigated in different age groups and different cultures (Duffy et al., 2016). At this point, it is important to introduce a valid and reliable measurement tool to the relevant literature in investigating the perceptions of students in vocational and technical education, who may be considered disadvantaged in various aspects in the context of Turkey, which are explained in more detail below, regarding their future decent work experiences.

Technical and vocational education and training (TVET) institutions are institutions established to meet the need for qualified intermediate staff (Sarkees-Wircenski et al., 1995) who have practical knowledge and skills in various fields (United Nations Educational, Scientific and Cultural Organization [UNESCO], 2012). Individuals attending TVET institutions receive training to develop their practical knowledge and skills related to the field they have chosen, in line with these purposes. The purpose of TVET was emphasized by the Turkish Ministry of National Education (MoNE, 2018) as providing individuals with the knowledge and skills in certain business areas and providing them with the skills, abilities, and competencies required their profession in line with the goals of the economy and the demands of the business world. As seen in the purpose, the main objective of TVET is to prepare students for the business and working world by providing them with the knowledge and skills in line with the economic goals and demands of the business world. In addition, TVET graduates are expected to have some skills such as teamwork, communication, ethical/social responsibility, analytical thinking, professionalism, technical knowledge, reading comprehension, critical thinking, problem solving, creativity and innovation (American Management Association [AMA], 2019; National Association of Colleges and Employers [NACE], 2017). As it is seen, students who continue their education in TVET institutions, learn the knowledge and skills required by their profession, on the other hand, they must improve themselves in terms of other skills expected by the business world in the 21st century. At this point, TVET plays an important role in preparing young people for work, improving their skills, and responding to the needs of the economy and labor market (Gelişli et al., 2016).

Vocational and Technical Anatolian High Schools (VTAHS) are the most common TVET institutions in Turkey. There are currently more than four thousand VTAHS in Turkey and more than one million students continuing their formal education in these institutions (MoNE, 2022). Students who start their education in VTAHS choose one of 54 different fields and branches in the 9th or 10th grade and get training that includes knowledge and skills specific to that field until they graduate. A general secondary education program is applied to all students in the 9th grade. From the 10th grade until graduation, students continue their education which they can gain knowledge and skills specific to the field they have chosen (MoNE, 2018). Students in the 9th, 10th and 11th grades receive theoretical and practical training in the general program and the field. In the 12th grade, students receive theoretical training at school once or twice a week; three or four days of on-the-job skills training and internship (MoNE, 2018). In this way, students have the opportunity to meet business life, use the knowledge and skills they have acquired in their fields, and acquire new knowledge and skills while doing their internship. Although one of the aims of TVET and VTAHS is to equip students with

knowledge and skills in a field of their choice, to prepare them for business life and to meet the need for skilled manpower (Strategy and Budget Presidency, 2019), there are many problems experienced by students in the TVET.

In the related literature, there are many studies on the problems experienced by TVET students. For example, Günbayı and Tokel (2014) listed the problems experienced in these high schools as lack of materials, inadequacy of workshops, incompatibility between theory and practice, excess number of students in practice, and financial inadequacies. Ergün (2018) stated that in VTAHS, functionality (e.g., graduate students do not want to do their jobs), insecurity (e.g., not getting a job because the student who comes to the institution for internship is not trusted), inadequacy (e.g., lack of trained staff, lack of students) and indifference (for example, the lack of sensitivity of the people involved in the upbringing of students). Çelebi and Deliktaş (2017) emphasized that there are many problem areas such as low economic opportunities of students, low industry-school cooperation, low job opportunities for graduate students. In their study, Ayaz and Karacan-Özdemir (2021) reported that the problems related to students are lack of interest and motivation, low self-efficacy belief, low academic achievement, and sociocultural structure (for example, the disadvantaged conditions of the region where students live, low expectations for the future of the students from their environment). Similarly, in their study, Yeşil and Tunç (2020) showed that low academic achievement, limited options, and disadvantaged conditions were among the problems of students. In addition to these problems, there are studies showing that there are several biases held by society such as only problematic students go to VTAHS or academic success in these schools is insignificant and it is easy to graduate from these schools (e.g., Kennedy et al., 2017; Lamb, 2011). Moreover, it has been stated that families believe VTAHS do not provide a future for their children (İsmail & Abiddin, 2014), and the society perceives these schools as schools attended by socioeconomically disadvantaged students (Oketch, 2007) or students with the potential to harm society (Buthelezi, 2018).

Based on these research findings related to TVET, considering the one of the main points of PWT in disadvantaged groups (for example, low socioeconomic level, minority groups, working class, disabled individuals, immigrations, women, etc.) and recommendation of examining decent work in different age groups and in different cultures (Duffy et al., 2016), it can be said that the evaluation of the future decent work perception of the students in TVET is extremely important in terms of taking precautions and carrying out the necessary studies. At this point, the necessity and need to adapt a measurement tool to evaluate this perception for TVET students, who have a unique context within the framework of the education they receive, and the problems pointed out in the relevant literature, come to the forefront. Accordingly, the aim of this study is to test the validity and reliability of the Future Decent Work Scale (Kim et al., 2019) on TVET students, which was developed on university students according to the PWT and adapted to Turkish by Keser and Büyüköze-Kavas (2022). The criterion-related validity of the scale will be tested with the life satisfaction variable, which was stated to be the outcome variable of decent work in the PWT (Duffy et al., 2019) and which was shown to have a significant relationship between decent work (Büyüköze-Kavas & Autin, 2019; Işık et al., 2019; Kozan et al., 2019).

Method

In this study, it was aimed to test the validity and reliability of the Future Decent Work Scale (Kim et al., 2019; Keser & Büyüköze-Kavas, 2022) on vocational and technical high school students. Information about the participants, data collection tools, data collection process and data analysis are given in this section.

Participants

The participants of the research consist of 545 students who continue their education at the 9th, 10th, 11th, and 12th grade levels from different Vocational and Technical Anatolian High Schools in Ankara districts. It is emphasized that around 300 participants would be sufficient to conduct factor analysis studies of the scale (Guadagnoli & Velicer, 1988; Nunnally, 1978). Comrey and Lee (1992) considered the number of participants between 500 and 1000 as very good for validity and reliability studies. Based on the literature, it can be said that the number of participants is sufficient to conduct validity and reliability studies of the scale. Participants in the study were reached by convenience

sampling method (Fraenkel et al., 2006). Demographic information about the participants is provided in Table 1.

Table 1.

Demographic Information of Students

Variables		n	%
Gender	Female	276	50.6
	Male	269	49.4
Grade	9	151	27.7
	10	155	28.4
	11	114	20.9
	12	125	22.9
Mother's educational level	Elementary School and Below	183	33.6
	Middle School-High School	310	56.9
	Associate degree and above	52	9.6
Father's educational level	Elementary School and Below	124	22.8
	Middle School-High School	358	65.7
	Associate degree and above	63	11.5
Socioeconomic status	Low	50	9.2
	Medium	443	81.3
	High	52	9.5
	Total	545	100

In Table 1 above, information about the gender, class, education levels mother and father and their perceived socioeconomic levels are given. Of the participants in the study, 50.6% were female (n=276) and 49.4% were male (n=269). In addition, it is seen that the rates of participants are close to each other according to grade levels, and the highest number of participants are 10th grade students. Below in Table 2, the distribution of students with regards to their field was provided.

Table 2.

Distribution of Students by Fields

Field	Female	Male	Total	%
Information Technologies	40	57	97	17.8
Biomedical	7	26	33	6.1
Office Management	34	3	37	6.8
Child Development	79	-	79	14.5
Electric-Electronics	1	26	27	5
Graphic Design	46	2	48	8.8
Machine Design Technology	6	97	103	18.9
Food and Beverage Services	47	41	88	16.1
Accommodation and Travel Services	4	16	20	3.7
Beautician	12	1	13	2.4
Total	276	269	545	100

In Table 2 above, information about the fields of students is given. Looking at the distribution according to the fields, it is seen that most of the participants in the research are from machine design technologies and the least number of participants are from beautician.

Instruments

Demographic Information Form. The form was created by the researchers and the participants were asked about the variables of gender, grade, parental education level, socioeconomic status, and field.

Future Decent Work Scale (FDWS). The scale was adapted to the Decent Work Scale developed by Kim et al. (2019) by Duffy et al. (2017) by arranging the time expressions of the scale items to be used by university students. The scale was adapted to measure students' perceptions of access to decent work in the future (Kim et al., 2019). The scale is scored in a 7-point Likert type (1- Strongly disagree, 7- Strongly agree) and consists of 15 items and 5 sub-dimensions in total. There are 3 items in each sub-dimension of the scale. The sub-dimensions in the scale are "Safe working conditions", "Access to adequate healthcare", "Adequate compensation", "Free time and rest" and "Complementary values" (Kim et al., 2019). There are four reverse items in the scale. Two of these items are in the "Adequate compensation" dimension and the other two in the "Free time and Rest" dimension. To test the construct validity of the scale, a confirmatory factor analysis (CFA) was utilized and fit indices were found to be satisfactory (TLI= .96, CFI= .97, SRMR= .04 and RMSEA= .05). To investigate reliability evidence, an internal consistency method was used through calculating the Cronbach Alpha and it was reported as .91 for the total scale (Kim et al., 2019). According to these results, the scale is a valid and reliable scale for university students.

The scale was adapted into Turkish by Keser and Büyükgöze Kavas (2022) on university students. CFA was performed to prove the construct validity of the scale. According to CFA results, TLI was calculated as .94, CFI .95, SRMR .05 and RMSEA .06. The Cronbach Alpha internal consistency coefficient for the entire scale was calculated as .86. When looking at the sub-dimensions, the Cronbach Alpha internal consistency coefficient is .82 for the Safe working conditions sub-dimension, .86 for the Access to adequate healthcare sub-dimension, .87 for the Adequate compensation sub-dimension, .84 for the Free time and rest sub-dimension, and .85 for the Complementary values sub-dimension. These results show that the scale is a valid and reliable measurement tool on university students in Turkey.

Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS). The BMSLSS was developed by Seligson et al. (2003) as the short form of the Multidimensional Student Life Satisfaction Scale (Huebner, 1994). The scale was developed to measure the level of life satisfaction perceived by children and adolescents regarding their family, friends, school, self and life environment. The scale consists of a total of 5 items in a 7-point Likert type (1-Terrible, 7-Delighted) and gives a total score. Explanatory factor analysis (EFA) was performed for the construct validity of the scale and a structure consisting of a single factor emerged. In addition, in the study conducted for criterion-related validity, it was stated that there were positive and significant relationships with positive affect, inverse and significant relationships with negative affect. The Cronbach Alpha internal consistency coefficient of the scale was calculated as .75 (Seligson et al., 2003).

BMSLSS was adapted into Turkish by Siyez and Kaya (2008). The validity and reliability studies of the scale were conducted with students aged between 9-16. For the validity evidence of the scale, an EFA was performed, and it was revealed that the scale had a similar structure with the original form. In addition, the criterion-related validity of the scale was ensured by negative relationships with depression and positive relationships with personality (Siyez & Kaya, 2008). The Cronbach Alpha internal consistency coefficient of the Turkish version of the scale was calculated as .89 and the test-retest reliability coefficient as .82. Within the scope of this study, this scale was used to test the criterion-related validity of FDWS.

Data Collection Process

First up, ethical approval was obtained from the ethics commission of a state university to ensure the protection of the rights of the participants. Then, official permission was obtained from the Education Research and Development Department of the Ministry of National Education (MoNE) for the scales

to be applied in schools. After obtaining the necessary permissions, the researchers contacted school administrators and school psychological counseling and guidance services. Data were collected from students who continue their education in vocational and technical high schools in the fall semester of 2022-2023. All scales were applied in the classrooms with the permission of the teachers. It took approximately 20 minutes for the participants to answer the scale set. The data of the study were collected by the researcher.

Data Analysis

In this study, validity, and reliability studies of the FDWS were conducted with students attending vocational and technical high schools. Before conducting the analyses, missing data screening and normality assumption checks (Kurtosis-skewness values, histogram graphs, extreme data, and Normal Q-Q Plot graphs) were performed, and descriptive information regarding participants were also reported in the findings.

For the construct validity evidence, a CFA was performed, and criterion-related validity was tested via calculating the correlation between FDWS and life satisfaction. In order to test the reliability of the scale, the Cronbach Alpha internal consistency value for the total score and sub-dimensions were calculated. Values related to validity and reliability are given below Table 3, Figure 1, Table 4 and Table 5. SPSS 24 was used while analyzing the data. In addition, AMOS 22 (Arbuckle, 2013) was used in the CFA examinations of the scale.

Findings

Results of Confirmatory Factor Analysis

CFA was applied to test the construct validity of the scale. The goodness of fit values taken as criteria during the analyses and the goodness of fit indices obtained as a result of the CFA applied on the data obtained from the VTAHS students regarding the scale are given in Table 3.

Table 3.

Criterion values for CFA and goodness of fit indices of FDWS

Fit Indices	Good fit	Acceptable fit	Estimated model
χ^2/df	≤ 2	2-5	3.943
RMSEA	$\leq .05$	$\leq .08$.074
SRMR	$\leq .05$	$\leq .08$.069
GFI	$\geq .90$	$\geq .85$.93
AGFI	$\geq .90$	$\geq .85$.90
CFI	$\geq .90$	$\geq .85$.85

(Source: Hu & Bentler, 1999; Jöreskog & Sörbom, 1993; Marsh et al., 1988; Schreiber et al., 2006)

As can be seen in Table 3 above, the goodness-of-fit indices of FDWS are χ^2/df ($\chi^2=311.496$, $df=79$, $p=.00$)=3.943, RMSEA=.074, SRMR=.069, GFI=.93, AGFI=.90 and CFI=.85. When the goodness of fit indices were examined, it was seen that the χ^2/df , RMSEA, SRMR, and CFI values were at an acceptable level of fit (Marsh et al., 1988; Schreiber et al., 2006), while the GFI and AGFI values had a good fit level (Hu & Bentler, 1999; Jöreskog & Sörbom, 1993). The model obtained as a result of the CFA is given in Figure 1 below.

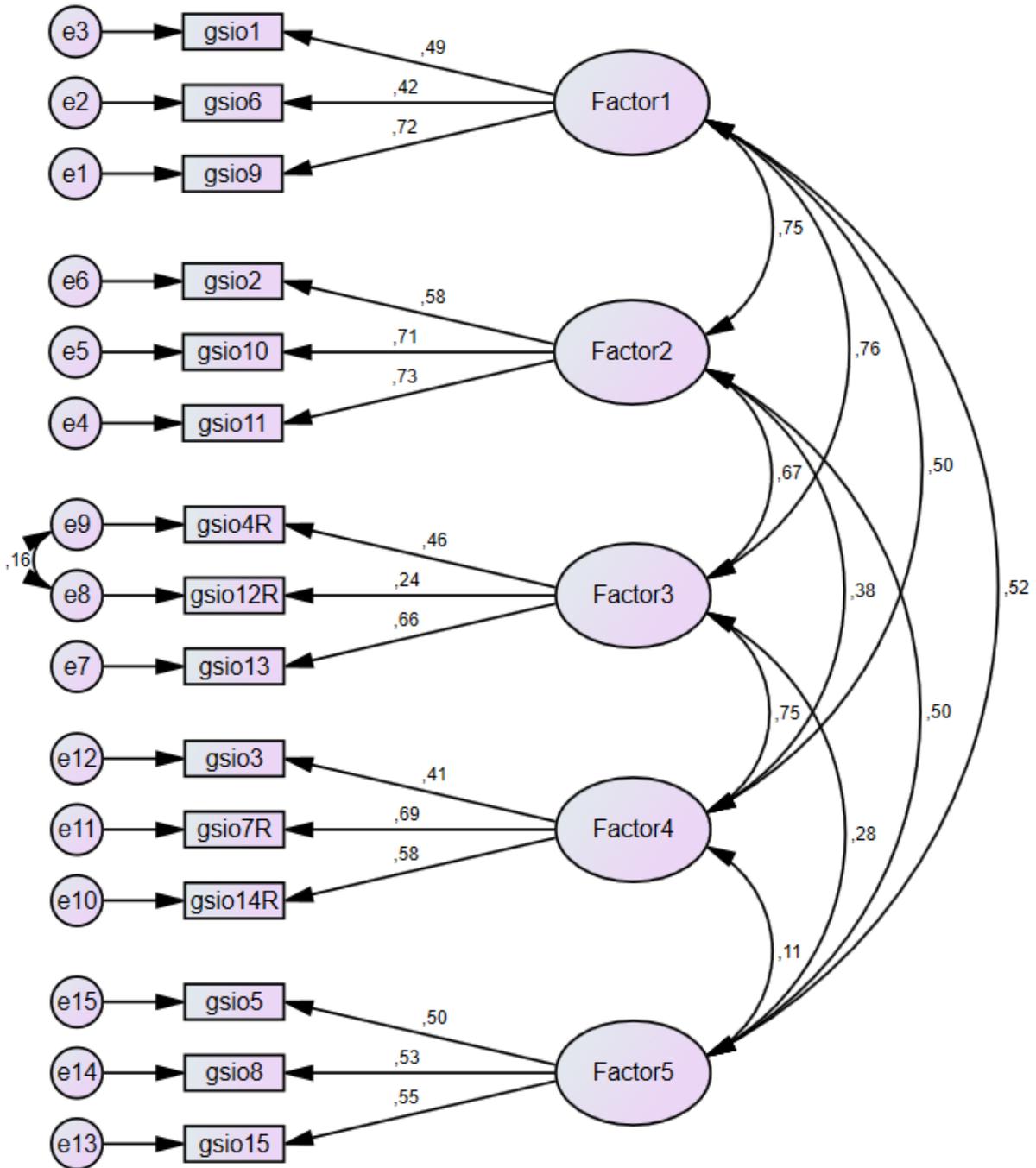


Figure 1. CFA Model of FDWS

As seen in Figure-1 above, item factor loadings obtained as a result of CFA are above .40 except one item (12th item under the third factor) (Hu & Bentler, 1999; Jöreskog & Sorbom, 1993; Schreiber et al., 2006). The 12th item below the critical value of .40 was not removed from the scale in order to preserve the original structure of the scale and as there should be at least three items in one factor (Büyüköztürk, 2013; Harrington, 2009). However, in order to improve the goodness of fit indices, a modification process was performed between e8 and e9, which have high error coefficients (Tabachnick & Fidell, 2014, p. 776).

Results of Criterion-Related Validity Analysis

The criterion-related validity of the FDWS was tested with the life satisfaction variable, which is one of the related concepts according to the PWT (Duffy et al., 2016). The results of criterion-related validity are given in Table 4.

Table 4.

Correlations of the FDWS and its sub-dimensions with the BMSLSS

FDWS	BMSLSS
Total score	.34**
Safe working conditions	.25**
Access to adequate healthcare	.22**
Adequate compensation	.28**
Free time and rest	.22**
Complementary values	.16**

*p<.05, **p<.01

As seen in Table 4, the correlations between criterion variables and FDWS were positive and statistically significant (p<.01), which can be considered as validity evidence for the FDWS.

Results of Reliability Analysis

Cronbach Alpha and McDonald's Omega coefficients were calculated for the total scale regarding the reliability of the FDWS. McDonald's Omega coefficient is one of the recommended reliability methods for the multidimensional scales (Hayes & Coutts, 2020). The reliability coefficients for the scale and its sub-dimensions are given in Table 5 below.

Table 5.

Cronbach Alfa and McDonald's Omega coefficients of FDWS and sub-dimensions

Scale and sub-dimensions	Cronbach Alfa (α) coefficients	McDonald's Omega (ω) coefficients
FDWS	.77**	.78
Safe working conditions	.52**	.54
Access to adequate healthcare	.70**	.71
Adequate compensation	.50**	.51
Free time and rest	.55**	.61
Complementary values	.54**	.55

**p<.01

As seen in the table, the Cronbach Alpha coefficient for the total score is .77 and the McDonald's Omega coefficient is .78, for the Safe working conditions sub-dimension is .52 and the .54, for the Access to adequate healthcare sub-dimension is .70 and .71, Adequate compensation sub-dimension is .50 and .51, for the Free time and rest sub-dimension is .55 and .61, Complementary values sub-dimension is .54 and the .65. The Cronbach Alpha coefficient for the total score and the "Access to Adequate Healthcare" sub-dimension was found to be above the critical value of .70, while the reliability coefficients of the other sub-dimensions were below the critical value (Nunnally & Berstein, 1994).

Discussion, Conclusion, and Suggestions

Duffy et al. (2017) developed the Decent Work Scale to measure the concept of decent work according to the PWT (Duffy et al., 2016). Kim et al. (2019) adapted the Decent Work Scale (Duffy et al., 2017) as the Future Decent Work Scale to university students and to measure university students' perceptions of future decent work. This scale was adapted to Turkish through utilizing a sample of university

students in Turkey by Keser and Büyükgöze-Kavas (2022). In the PWT (Duffy et al., 2016), it is emphasized that the work-based experiences of individuals who take part in world of work and are planned to be involved should be examined. Considering that vocational and technical high school students choose an area to gain certain knowledge and skills in a working field (MoNE, 2018) and receive education, it can be said that these students are potential candidates for business life and world of work after graduation. At this point, to researchers' knowledge, there is no available measurement tool in the related literature to measure the work-based experiences and future decent work perceptions of vocational and technical high school students based on PWT (Duffy et al., 2016). Accordingly, in this study, the validity and reliability of the Future Decent Work Scale (Kim et al., 2019; Keser & Büyükgöze-Kavas, 2022) adapted to the Turkish sample to measure the future decent work perceptions of university students was tested on vocational and technical high school students.

Within the scope of this study, considering the certain demographic variables included such as gender, class, field, and the district where the school is located in the sample group it can be concluded that a relatively heterogeneous group was reached to use the scale in TVET students. With the aim of validating to use the scale for TVET students, a CFA was conducted and the findings pointed out a conceptually existing structure (McArdle, 1996) and the proposed model showed acceptable fit indices (χ^2/df , RMSEA, SRMR, GFI, AGFI, CFI) (Hu & Bentler, 1999; Jöreskog & Sorbom, 1999; Marsh et al., 1988; Schreiber et al., 2006). As a result of CFA to test the construct validity of the scale, the five-factor structures consisting of its sub-dimensions "Safe working conditions", "Access to adequate healthcare", "Adequate compensation", "Free time and rest" and "Complementary values" were also confirmed for TVET students. However, the fact that an item in the "Adequate compensation" dimension had a loading below .30 (Büyüköztürk, 2013; Harrington, 2009) indicates that it does not work for the sample group used in this study. This item is "I will feel I am not paid enough based on my qualifications and experience" and a reverse item. This statement indicates that students do not believe that they will earn an adequate compensation in the future, even if they have high qualifications and experience, while evaluating their perceptions of accessing a decent job in the future. It can be said that there are several possible reasons why this item has a low load in the data obtained from TVET students. First explanation is that the students may not have understood it correctly as it was a reverse item. In addition, since the students are still in the education process, it can be listed as the fact that students at 9, 10 and 11th grades have little or no work-based experience and their perceptions of wage expectations from their future jobs may not be fully formed. Another reason can be the fact that students are in adolescence and their feelings and thoughts about the future tend to change irregularly as the self and identity development of individuals in adolescence process (Steinberg, 2007). On the other hand, it can be said that the intelligibility of this item in its Turkish translation is difficult. This item can be considered as "I will feel I am paid enough based on my qualifications and experience" a statement and this item can be revised in future research. However, as stated before, the relevant item was not removed from the scale in order not to deteriorate the structure intended to be measured in the original scale and the fact that number of items that should be included in a factor was at least three (Büyüköztürk, 2013).

The criterion-related validity of the scale is tested with the life satisfaction variable as alleged to be closely related to the concept of decent work in PWT framework (Duffy et al., 2016) and a pile of studies have supported this relationship as well (Büyükgöze-Kavas & Autin, 2019; Işık et al., 2019; Kozan et al., 2019). The results of the present study indicated that there are significant and positive relationships between life satisfaction and the whole scale as well as its sub-dimensions. This result confirms the relationship between decent work and life satisfaction as hypothesized in the PWT (Duffy et al., 2016). In addition, previous research on the theory (Büyükgöze-Kavas & Autin, 2019; Işık et al., 2019; Kozan et al., 2019) also have supported the significant relationship between life satisfaction and decent work. Based on the theory and research findings, it is seen that the criterion-related validity results are both supported by the studies and show similar results with the results of previous studies. This result showed that the criterion-related validity of the scale is ensured for TVET students. In addition, to researchers' knowledge, this study is one of the first attempts to examine the relationship between decent work perception and life satisfaction of vocational and technical high school students in the context of PWT in Turkey (Duffy et al., 2016) and therefore, hopefully, the results of the study will provide a substantial contribution to the literature.

The reliability of the scale was tested with the Cronbach Alpha reliability coefficient in terms of internal consistency. The reliability coefficient for the scale was found to be above the acceptable value of .70 (Nunnally & Berstein, 1994). At this point, it can be said that the scale is a reliable measurement tool for TVET students in line with the internal consistency value of the scale. On the other hand, when the reliability coefficients of the sub-dimensions in the scale are examined, it is seen that the "Access to Healthcare" sub-dimension has an acceptable value. It was concluded that the reliability coefficients of the other sub-dimensions, "Safe Working Conditions", "Adequate compensation", "Free Time and Rest" and "Complementary values" were below .70. As Tavakol and Dennick (2011) cited, the low number of items are one of the reasons for the low Cronbach's alpha values. There are 3 items in each sub-dimension in the scale (Kim et al., 2019). The low number of items in the sub-dimensions (Tavakol & Dennick, 2011) can be treated as one of the reasons why the reliability coefficients are below the critical value. In addition, considering the developmental characteristics of the students, the presence of reverse items in the scale may have negatively affected the answers of the students and, thus in return, the reliability of the scale. Another reason may be the developmental characteristics of adolescents, since the study group was adolescents. Since it is thought that the self and identity development of individuals continue during adolescence, their feelings and thoughts about the future may change irregularly (Steinberg, 2007). In addition, lack of interest and motivation and low academic achievement (Ayaz & Karacan-Özdemir, 2021) are among the problems experienced by TVET students. These problems can lead to situations such as students' random answers to items due to loss of interest and motivation (responding to one item at the highest level while giving the lowest response to the other and repeating it for all scales), answering without understanding what they have read, giving quick answers to finish quickly, which will reduce reliability.

Looking at the studies on decent work, it is seen that in the context of PWT (Duffy et al., 2016), individuals use the scale as a total score to measure perceptions of decent work and evaluate the results over a total score (see Buyukgoze-Kavas & Autin, 2019; Duffy et al., 2020; Işık et al., 2019; Kim et al., 2022; Kozan et al., 2019; Wan & Duffy, 2022). Based on the research, the fact that the reliability values of the scale for the total score for the TVET students in this study are above the acceptable level indicates that the scale is a reliable tool in measuring the future decent work perceptions of the TVET students. On the other hand, McDonald's Omega coefficient was calculated to test the reliability of the scale and its sub-dimensions (Hayes & Coutts, 2020). For a scale to be accepted as a reliable scale, it is stated that the omega critical value is minimum .50 (Reise et al., 2013). When the Omega coefficients related to the scale and sub-dimensions are examined, it is seen that the scale and sub-dimensions are at acceptable values. As a result, CFA, criterion-related validity, Cronbach's alpha, and McDonald's Omega coefficients analyzed to test the psychometric properties of the scale showed that the scale is a valid and reliable measurement tool for to be used on vocational and technical high school students.

This study bears some limitations. Firstly, it can be shown that the data of the study does not cover VTAHS students from all regions of Turkey. The data were collected from VTAHSs located in different regions of Ankara. From this point of view, the psychometric properties of the scale can be re-tested with a dataset that includes VTAHS students from other regions of Turkey. Another limitation is that the reliability evidences were provided only through Cronbach alpha and McDonald's Omega methods. In future studies, in addition to these methods, different reliability calculation methods such as test-retest can be included in the analyses.

In addition to these limitations, the study has some strengths in terms of its contributions to the related literature. Duffy et al (2016) suggested examining the experiences of decent work of each group that is involved or wants to take part in the world of work. Testing the psychometric properties of the scale to investigate the future decent work perceptions of students continuing TVET in Turkey based on the Psychology of Working Framework (Blustein, 2008; 2013) and Theory (Duffy et al., 2016) can be considered as a strong aspect of the research. In addition, within the framework of the theory, it is suggested that the decent work model be tested in cultures different from the American culture (Duffy et al., 2016). At this point, testing the study in Turkish culture contributes to the relevant literature. Considering all these strengths and limitations, new studies can be designed with variables such as

economic constraints, marginalization, career adaptability and work volition in the model proposed by the theory about the expectations of decent work of TVET students based on PWT.

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Ethic statement: In this study, we declare that the rules stated in the "Higher Education Institutions Scientific Research and Publication Ethics Directive" are complied with and that we do not take any of the actions based on "Actions Against Scientific Research and Publication Ethics". At the same time, we declare that there is no conflict of interest between the authors, which all authors contribute to the study and that all the responsibility belongs to the article authors in case of all ethical violations.

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References

- American Management Association. (2019). *Executives Say 21st Century Needs More Skilled Workers*. <https://www.amanet.org/articles/executives-say-21st-century-needs-more-skilled-workers/>
- American Psychological Association. (2020). *Stress in America*. <https://www.apa.org/news/press/releases/2020/10/stress-mental-health-crisis>
- Arbuckle, J. L. (2013). *Amos 22.0 user's guide*. IBM SPSS. https://www.sussex.ac.uk/its/pdfs/SPSS_Amos_User_Guide_22.pdf
- Ayaz, A., & Karacan Özdemir, N. (2021). A case study of a Turkish vocational high school, and the challenges for teachers. *Journal of Vocational Education & Training*, 1-20. <https://doi.org/10.1080/13636820.2021.1895873>
- Ali, S. R. (2013). Poverty, social class, and working. In D. L. Blustein & D. L. Blustein (Eds.), *The Oxford handbook of the psychology of working* (pp. 127–140). Oxford University Press.
- Buthelezi, Z. (2018). Lecturer experiences of TVET college challenges in the Post-Apartheid Era: A case of unintended consequences of Educational Reform in South Africa. *Journal of Vocational Education and Training*, 70(3), 364–383. <https://doi.org/10.1080/13636820.2018.1437062>.
- Buyukgoze-Kavas, A., & Autin, K. L. (2019). Decent work in Turkey: Context, conceptualization, and assessment. *Journal of Vocational Behavior*, 112, 64–76. <https://doi.org/10.1016/j.jvb.2019.01.006>
- Büyüköztürk, Ş. (2013). *Sosyal bilimler için veri analizi el kitabı* (18. basım). PegemA Yayıncılık.
- Blustein, D. L. (2001). Extending the reach of vocational psychology: Toward an inclusive and integrated psychology of working. *Journal of Vocational Behavior*, 59, 171–182. <http://doi.org/10.1006/jvbe.2001.1823>
- Blustein, D. L., Chaves, A. P., Diemer, M. A., Gallagher, L. A., Marshall, K. G., Sirin, S., & Bhati, K. S. (2002). Voices of the forgotten half: The role of social class in the school-to-work transition. *Journal of Counseling Psychology*, 49, 311–323. <http://doi.org/10.1037/0022-0167.49.3.311>
- Blustein, D. L. (2006). *The Psychology of Working: A new perspective for career development, counseling and public policy*. Routledge.
- Blustein, D. L. (2008). The role of work in psychological health and well-being: A conceptual, historical, and public policy perspective. *American Psychologist*, 63, 228–240. <http://doi.org/10.1037/0003-066X.63.4.228>
- Blustein, D. L. (2013). *The psychology of working: A new perspective for a new era*. In D. L. Blustein (Ed.), *Oxford handbooks online*. <http://www.oxfordhandbooks.com/view/http://dx.doi.org/10.1093/oxfordhb/9780199758791.001.0001/oxfordhb-9780199758791-e-001>
- Comrey, A. L. & Lee, H. A. (1992). *First cours in factor analysis*. Lawrence Erlbaum Associates, Inc.
- Çelebi, M., & Deliktaş, M. (2017). Meslek liselerinde yaşanan sorunlar ve öğretmenlerin tükenmişlik düzeyleri ile ilişkisi – Kayseri ili örneği. Ö. Demirel ve S. Dinçer (Ed.), *Eğitim bilimlerinde yenilik ve nitelik arayışı* (ss. 225-240). Pegem.
- Diener, E., Oishi, S., & Lucas, R. E. (2015). National accounts of subjective well-being. *American Psychologist*, 70, 234–242. <http://doi.org/10.1037/a0038899>
- Duffy, R. D., Diemer, M. A., Perry, J. C., Laurenzi, C., & Torrey, C. L. (2012). The construction and initial validation of the Work Volition Scale. *Journal of Vocational Behavior*, 80(2), 400–411. <https://doi.org/10.1016/j.jvb.2011.04.002>

- Duffy, R. D., Douglass, R. P., & Autin, K. L. (2015). Career adaptability and academic satisfaction: Examining work volition and self efficacy as mediators. *Journal of Vocational Behavior, 90*, 46-54. <https://doi.org/10.1016/j.jvb.2015.07.007>
- Duffy, R. D., Blustein, D. L., Diemer, M. A., & Autin, K. L. (2016). The Psychology of Working Theory. *Journal of Counseling Psychology, 63*(2), 127–148. <https://doi.org/10.1037/cou0000140>
- Duffy, R. D., Allan, B. A., England, J. W., Blustein, D. L., Autin, K. L., Douglass, R. P., Ferreira, J., & Santos, E. J. R. (2017). The development and initial validation of the Decent Work Scale. *Journal of Counseling Psychology, 64*(2), 206–221. <https://doi.org/10.1037/cou0000191>
- Duffy, R. D., Kim, H. J., Allan, B. A., & Prieto, C. G. (2020). Predictors of decent work across time: Testing propositions from Psychology of Working Theory. *Journal of Vocational Behavior, 123*, 103507. <https://doi.org/10.1016/j.jvb.2020.103507>
- Eggerth, D. E., DeLaney, S. C., Flynn, M. A., & Jacobson, C. J. (2012). Work experiences of Latina immigrants: A qualitative study. *Journal of Career Development, 39*(1), 13-30. <https://doi.org/10.1177/0894845311417130>
- Ergün, H. (2018). Okul müdürleri ve işveren gözüyle mesleki eğitimin sorunları. *MANAS Sosyal Araştırmalar Dergisi, 7*(3), 191-206. <https://dergipark.org.tr/en/download/article-file/638771>
- Flores, L. Y., Mendoza, M. M., Ojeda, L., He, Y., Meza, R. R., Medina, V., Ladehoff, J. W., & Jordan, S. (2011). A qualitative inquiry of Latino immigrants' work experiences in the Midwest. *Journal of Counseling Psychology, 58*(4), 522–536. <https://doi.org/10.1037/a0025241>
- Fraenkel, J.R., & Wallen, N.E. (2006). *How to design and evaluate research in education*. McGraw-Hill.
- Gelişli, Y., Beisenbayeva, L., Sultanbek, Z. M., & Ussenova, A. (2016). Vocational education systems in Turkey and the world: New trends and problems. *International Journal on New Trends in Education and Their Implications, 7*(3), 1-10. http://www.ijonte.org/FileUpload/ks63207/File/01.yucel_gelisli.pdf
- Guadagnoli E, & Velicer, W, F. (1988). Relation of sample size to the stability of component patterns. *Am Psychol Assoc. 103*, 265–75. <https://doi.org/10.1037/0033-2909.103.2.265>
- Günbayı, İ., & Tokel, A. (2014). Teknik ve meslek liselerinde meslek derslerinin etkililiğine ilişkin yönetici, öğretmen ve öğrenci görüşleri. *Eğitim ve Öğretim Araştırmaları Dergisi, 3*(4), 59-73. <http://www.jret.org/FileUpload/ks281142/File/06.gunbayi.pdf>
- Harrington, D. (2009). *Confirmatory factor analysis*. Oxford university press.
- Hayes, A. F., & Coutts, J. J. (2020). Use omega rather than Cronbach's alpha for estimating reliability. But..., *Communication Methods and Measures, 14*(1), 1-24. <https://doi.org/10.1080/19312458.2020.1718629>
- Hu, L. T., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional criteria versus new alternatives. *Structural Equation Modeling: A Multidisciplinary Journal, 6*(1), 1-55. <https://doi.org/10.1080/10705519909540118>
- Huebner, E. S. (1994). Preliminary development and validation of a multidimensional life satisfaction scale for children. *Psychological Assessment, 6*(2), 149–158. <https://doi.org/10.1037/1040-3590.6.2.149>
- International Labor Organization. (1999, June 30). *Report of the director-general: Decent work*. <https://www.ilo.org/public/english/standards/relm/ilc/ilc87/rep-i.htm>
- International Labor Organization. (2017, January 12). *Decent work*. <https://www.ilo.org/ankara/areas-of-work/dw/lang--en/index.htm>

- Ismail, A., & Abiddin, N. Z. (2014). Issues and challenges of Technical and Vocational Education and Training in Malaysia towards human capital development. *Middle-East Journal of Scientific Research* 19(2), 7–11. <https://doi.org/10.5829/idosi.mejsr.2014.19.icmrp.2>.
- Işık, E., Kozan, S., & Işık, A. N. (2019). Cross-cultural validation of the Turkish version of the decent work scale. *Journal of Career Assessment*, 27(3), 471-489. <https://doi.org/10.1177/1069072718763636>
- Jöreskog, K. G., & Sörbom, D. (1993). *LISREL 8: Structural equation modeling with the SIMPLIS command language*. Scientific Software International
- Kennedy, G. W., Udoetuk, U. S., & Ufot, S. I. (2017). Challenges of technical vocational teacher education and teaching in Nigeria: The need for intervention. *International Journal of Education and Evaluation*, 3(7), 71–82. <https://iiardpub.org/get/IJEE/VOL.%203%20NO.%207%202017/CHALLENGES%20OF%20TECHNICAL.pdf>
- Keser, A., & Büyükgöze-Kavas, A. (2022). Gelecekteki insana yakışır iş ölçeği: geçerlik ve güvenilirlik çalışması. *Kariyer Psikolojik Danışmanlığı Dergisi*, 5(1), 19-33.
- Kim, H. J., Duffy, R. D., Lee, S., Lee, J., & Lee, K. H. (2019). Application of the psychology of working theory with Korean emerging adults. *Journal of Counseling Psychology*, 66(6), 701–713. <https://doi.org/10.1037/cou0000368>
- Kim, H. J., McNeil-Young, V. A., Wang, D., Duffy, R. D., & Underhill, B. D. (2022). Women of Color and decent work: An examination of psychology of working theory. *The Career Development Quarterly*, 70(2), 125-137. <https://doi.org/10.1002/cdq.12291>
- Kozan, S., Işık, E., & Blustein, D. L. (2019). Decent work and well-being among low-income Turkish employees: Testing the psychology of working theory. *Journal of Counseling Psychology*, 66(3), 317–327. <https://doi.org/10.1037/cou0000342>
- Lamb, S. (2011). TVET and the Poor: Challenges and possibilities. *International Journal of Training Research*, 9(1–2), 60–71. <https://doi.org/10.5172/ijtr.9.1-2.60>.
- Marsh, H. W., Hau, K.-T., & Wen, Z. (2004). In search of Golden Rules: Comment on hypothesis-testing approaches to setting cutoff values for fit indexes and dangers in overgeneralizing Hu and Bentler's (1999) findings. *Structural Equation Modeling*, 11(3), 320–341. https://doi.org/10.1207/s15328007sem1103_2
- McArdle, J. J. (1996). Current directions in structural factor analysis. *Current Directions in Psychological Science*, 5(1), 11-18. <https://doi.org/10.1111/1467-8721.ep107726>
- Turkish Ministry of National Education. (2018). *Türkiye’de mesleki ve teknik eğitimin görünümü*. http://mtegm.meb.gov.tr/meb_iys_dosyalar/2018_11/12134429_No1_Turkiyede_Mesleki_ve_Teknik_Egitimin_Gorunumu.pdf
- Turkish Ministry of National Education. (2022). *Mesleki eğitim haritası*. <http://meslekiegitimharitasi.meb.gov.tr/index.php>
- National Association of Colleges and Employers. (2017). *The Key Attributes Employers Seek on Students’ Resumes*. <https://www.nacweb.org/about-us/press/2017/the-key-attributes-employers-seek-on-students-resumes/>
- Noonan, A. E., Hall, G., & Blustein, D. L. (2007). Urban adolescents’ experience of social class in relationships at work. *Journal of Vocational Behavior*, 70, 542–560. <http://dx.doi.org/10.1016/j.jvb.2007.01.005>
- Nunnally, J, C. (1978). *Psychometric theory*. McGraw-Hill.
- Nunnally, J. & Bernstein, I. (1994). *Psychometric theory*. McGraw-Hill.
- Oketch, M. O. (2007). To vocationalise or not to vocationalise? Perspectives on current trends and issues in Technical and Vocational Education and Training (TVET) in Africa. *International*

- Journal of Educational Development*, 27(2), 220–234. <https://doi.org/10.1016/j.ijedudev.2006.07.004>.
- Reise, S. P., Bonifay, W. E., & Haviland, M. G. (2013). Scoring and modeling psychological measures in the presence of multidimensionality. *Journal of Personality Assessment*, 95(2), 129-140. <https://doi.org/10.1080/00223891.2012.725437>
- Sarkees-Wircenski, M., Scott, J. L., & Donnely Sarkees, M. (1995). *Vocational special needs* (3 rd. ed.). American Technical Publishers.
- Schreiber, J. B., Nora, A., Stage, F. K., Barlow, E. A., and King, J. (2006). Reporting structural equation modeling and confirmatory factor analysis results: A review. *The Journal of Educational Research*, 99(6), 323–338. <https://doi.org/10.3200/JOER.99.6.323-338>
- Seligson, J.L., Huebner, E.S. & Valois, R.F (2003). Preliminary validation of the Brief Multidimensional Students' Life Satisfaction Scale (BMSLSS). *Social Indicators Research*, 61, 121–145. <https://doi.org/10.1023/A:1021326822957>
- Siyez, D. M., & Kaya, A. (2008). Validity and reliability of the brief multidimensional students' life satisfaction scale with Turkish children. *Journal of Psychoeducational Assessment*, 26(2), 139–147. <https://doi.org/10.1177/0734282907307802>
- Steinberg, L. (2007). Risk taking in adolescence: New perspectives from brain and behavioral science. *Current Directions in Psychological Science*, 16(2), 55-59. <https://doi.org/10.1111/j.1467-8721.2007.00475.x>
- Tabachnick, B. G. & Fidell, L. S. (2014). *Using multivariate statistics* (6th ed.). Pearson.
- Tavakol, M., & Dennick, R. (2011). Making sense of Cronbach's alpha. *International journal of medical education*, 2, 53-55. <https://doi.org/10.5116/ijme.4dfb.8dfd>
- Presidency of the Republic of Turkey Presidency of Strategy and Budget. (2019). *Eleventh development plan* (2019-2023). https://www.sbb.gov.tr/wp-content/uploads/2022/07/Eleventh_Development_Plan_2019-2023.pdf
- United Nations Educational, Scientific and Cultural Organization. (2012, November 28). *The International Standard Classification of Education* (ISCED). <http://uis.unesco.org/sites/default/files/documents/international-standard-classification-of-education-fields-of-education-and-training-2013-detailed-field-descriptions-2015-en.pdf>
- Yeşil, H. & Tunç, B. (2020). Öğrencilerin toplumsal köken özellikleri ve istenmeyen davranışlar: Meslek liselerinde bir durum analizi. *e-Kafkas Journal of Educational Research*, 7(2), 185-206. <https://doi.org/10.30900/kafkasegt.750179>
- Wan, W., & Duffy, R. D. (2022). Decent work and turnover intentions among Chinese Millennials: A longitudinal study. *Journal of Career Development*, 08948453221133831. <https://doi.org/10.1177/0894845322113383>
- Warne, R. T. (2011). An investigation of measurement invariance across genders on the Overexcitability Questionnaire–Two. *Journal of Advanced Academics*, 22(4), 578-593. <https://doi.org/10.1177/1932202X11414821>