



The relationship between time perspective and career decision-making difficulties

Ayşe Fikriye Sarsıkoğlu¹

Accepted: 21 February 2023 / Published online: 13 March 2023

© The Author(s), under exclusive licence to Springer Science+Business Media, LLC, part of Springer Nature 2023

Abstract

Career decision-making difficulties (CDMD) are among the most researched concepts in career counseling literature. CDMD may cause individuals to avoid the decision-making process or to make a decision that is less suitable for them. How they interpret the past, how to evaluate the impact of the present on the future, and what to expect from the future can affect an individual's decision-making process. Studies on CDMD seem to focus on the future time perspective (TP) generally. However, this research study aimed to examine the relationship between the multidimensional nature of the TP and the CDMD of young adults. The study included 331 university students (73.4% women, 26.6% men) aged 18–25 years. The participants completed a Demographic form, the Zimbardo Time Perspective Inventory Short Form (ZTPI-SF), and the Career Decision-Making Difficulties Questionnaire (CDMDQ). As a result of canonical correlation analysis, three canonical correlations were significant. The results showed that different TP patterns were associated with CDMD. Suggestions for future theoretical and applied research in the field of career counseling and guidance are also presented.

Keywords Time perspective · Career decision-making · Career decision-making difficulties · Career indecision

Introduction

In emerging adulthood (Arnett, 2000), forming a vocational identity is a part of self-knowledge, and it is an important developmental task (Arnett, 2014). This developmental task faced by university students is a challenging and complicated task that requires making career-related decisions. During college years, most students experience dissatisfaction and indecision with their career choices. One of the most common reasons students apply to university counseling centers is career indecision (Erkan et al., 2011; Lipshits-Braziler et al., 2017). In Turkey, the final decision regarding career choice is generally made in the last year of high school. However, existing research in this field has aimed to identify the desire of university students in Turkey to change their career choice, their degree of satisfaction (Dogan et al., 2005), and the problem areas of university youth (Buyukgoze-Kavas, 2011; Gizir, 2005; Kalafat, 2014;

Koydemir & Demir, 2013; Kurt, 2008; Mutlu et al., 2019; Topkaya & Meydan, 2013; Turkum et al., 2004; Yerin-Güneri et al., 2003). The results of these research studies showed that most of the university students wanted to change the department or profession they studied at the time. For these reasons, since 2014, university students in Turkey have been allowed to remake their career choices, provided that their Higher Education Institutions Examination (HEIE) scores were suitable. Thus, for students who want to change departments (major/minor), the necessity of preparing and retaking HEIE is no longer an obstacle as long as their scores are sufficient. Many university students in Turkey are looking for career psychological counseling services to change their profession and to choose professions that are more suitable to their characteristics and that provide much larger employment opportunities (Akyol & Bacanlı, 2019; Bacanlı & Salman, 2018).

Career decision-making difficulties (CDMD) are one of the most researched topics in career counseling literature (Amir & Gati, 2006). A career-related decision is one of the most important decisions that individuals have to make in their lifetime (when encountering decisions such as choosing a profession, getting a job, or changing a job or profession). Career decision-making is a highly stressful

✉ Ayşe Fikriye Sarsıkoğlu
sariogluayf@gmail.com

¹ Faculty of Humanities and Social Sciences, Department of Psychology, Kastamonu University, Kastamonu, Turkey

experience for some individuals, while others perceive it as a non-problematic and smooth process. CDMD has been defined as deviations from the ideal career decision-making process of an individual (Gati et al., 1996). The CDMD taxonomy developed by Gati et al. (1996) is based on the decision theory. According to the decision theory, researchers have created the “ideal career decision maker” model: a person who is aware of the need to make decisions, is willing to make decisions, and makes the appropriate decision. CDMD can influence the decision-making process of the ideal career decision-maker by (a) preventing the individual from making decisions or (b) leading to a less-than-optimal decision. The CDMD taxonomy is a hierarchical classification system that emphasizes how complex the decision-making process can be. It includes difficulties experienced before and during the decision-making process. Its ten difficulty categories are grouped into three major categories. The difficulties that may arise before making a career decision are grouped under the first major category, namely Lack of Readiness (LOR). These difficulties are (1) a lack of motivation to make career decisions, (2) general indecision about decision-making, and (3) dysfunctional expectations and ideas about making career decisions. The remaining two major categories refer to what can arise in the decision-making process. The second major category, namely Lack of Information (LOI), refers to a lack of knowledge of (4) the steps of the career decision-making process, (5) self, (6) occupations, and (7) ways of obtaining information. The third major category is Inconsistent Information (InI), which includes (8) inconsistent information about oneself and one’s profession, (9) internal conflicts, and (10) external conflicts. Various research has been conducted on examining the validity of the taxonomy (Kelly & Lee, 2002; Tien, 2001) and its related issues (Gati et al., 2011; Kleiman et al., 2004). Also, the CDMD taxonomy and the CDMDQ have been tested and validated in various cultures (Gati & Saka, 2001a, b; Hijazi, Tatar, and Gati, 2004; Mau, 2001; Sovet et al., 2015; Tien, 2005; Vertsberger & Gati, 2016; Willner et al., 2015). In addition, several researchers have conducted studies aimed at understanding the factors related to CDMD. Studies investigating the antecedents of CDMD have examined the relationship between depression (Walker & Peterson, 2012), anxiety (Jia et al., 2022; Park et al., 2017), the five-factor personality traits (Burns et al., 2013; Di Fabio et al., 2015), emotional intelligence (Di Fabio et al., 2015; Santos et al., 2018), the tolerance for uncertainty (Arbona et al., 2021; Storme et al., 2019; Xu & Tracey, 2015), and career decision-making self-efficacy (Morgan & Ness, 2003). Research in Turkey on CDMD was conducted on high school students (Dogan, 2010; Mutlu, 2011; Bacanli, 2012; Bacanli, Esici & Ozunlu, 2013). In university-level students, research (Salman & Kan, 2021)

and scale adaptation studies (Bacanli & Oztemel, 2017) on CDMD are quite scarce. It was observed that some CDMD studies focused on career research and planning behaviors and on the future time perspective (TP) (Ferrari et al., 2010; Jia et al., 2022; Park et al., 2018; Walker & Tracey, 2012). The studies found that the future TP is an important part of career decision-making (Ferrari et al., 2010) and career planning behaviors (Janeiro, 2010; Marko & Savickas, 1998). However, these studies considered TP to be one-dimensional and only focused on the future orientations of the study participants. How other psychological aspects of time might be related to career decision-making were not addressed in these studies. However, decision-making is not just about the moment when the decision is made. It is also related to how individuals perceive the past and what they hope for the future (Taber, 2013). In this context, understanding how the multidimensional nature of the past, present, and future perspectives affects CDMD can deepen knowledge in conceptualizing CDMD and in planning career interventions. The structure of the TP offers significant potential for interventions in the field of career counseling, but studies in this field are lacking (Boniwell & Zimbardo, 2015). Therefore, this study aimed to examine the relationship between TPs and CDMD.

Time perspective

The perception of time is certainly not a new concept in the literature. Aristotle asked, “In what sense if any, can time be said to exist?” He initiated the first serious analysis of time with this question, and many thinkers have since examined the concept of time (Gale, 2016). Kurt Lewin (1951, as cited in Mohammed & Marhefka, 2020) defined the TP as individuals’ opinion on their psychological future and past. TP has attracted the attention of researchers because of its far-reaching impact on thought, attitude, decision, and action. It has been examined in various study fields of psychology, including education, health, development, and social psychology. However, there is no consensus on the definition of the concept. TP has been defined in different ways, such as how the individual allocates attention to the past, present, and future (Shipp et al., 2009), to thoughts about the past, present, and future (Mello & Worrell, 2015), and to a temporal bias (Zimbardo & Boyd, 1999). Considering the common points of these definitions, TP can be defined as (1) subjective, (2) cognitive, (3) multidimensional, and (4) individual difference (Mohammed & Marhefka, 2020). One of the contemporary approaches to TP was proposed by Zimbardo and Boyd (1999). Their theory was based on Lewin’s theory that the perception of time influences human behavior. The TP influences the choices and actions of an individual and the TP to which the individual is prone may become

a dominant way of responding (Boniwell & Zimbardo, 2015; Boyd & Zimbardo, 2005). TP has been described as an often unconscious process in which life experiences (individual and social) are assigned temporal frames to give these events order, coherence, and meaning. Individuals encode, store, and remember experienced events using these cognitive frameworks. They also use it to form their expectations and goals (Zimbardo & Boyd, 1999). According to this approach, from a phenomenological and dynamic point of view, the TP is a mixture of cognition, emotion, and behavior. Temporal bias is the cognitive dimension, the attributes (positive-negative or hedonistic-fatalistic) of the time frames are the emotional dimension, and goal attainment and delayed gratification are the behavioral dimension (Zimbardo & Boyd, 1999).

Another essential issue for defining the TP is stability: trait or state? Stolarski et al. (2018) presented a hybrid model influenced by situations as well as a habitual tendency. For instance, in the event of the death of a loved one the past is the focus, while the future is the focus when making new year plans. The concept of the balanced TP (Zimbardo & Boyd, 1999), which proposes a flexible temporal framework in accordance with the requirements of the situation, supports this hybrid model as well.

Tps struggle with measurement and definitional problems. Many researchers have measured the structure in various ways, but most studies focused on examining a single dimension of time. Zimbardo and Boyd (1999) developed the Zimbardo Time Perspective Inventory (ZTPI), which they built on a theoretical foundation that encompasses the multidimensional structure of time and integrates the motivational, emotional, cognitive, and social processes. They described the characteristic features of each of the five TPs in this theory. Past-negative represents a pessimistic and discouraging perspective based on negative life events or adverse restructuring of life experiences. Past-positive represents an intimate, pleasant, and emotional view of the past. Future time refers to anxiety about achieving goals, deferring satisfaction, and avoiding wasted time. Present-hedonistic has little concern for future results and is geared toward pleasure and excitement in the present. Present-fatalistic is related to a belief that the future is predetermined. It refers a sense of despair for the future and the unawareness of the relationship between present behaviors and future outcomes (Zimbardo & Boyd, 1999).

Research has shown that temporal bias is associated with a variety of psychological and behavioral outcomes. The future TP is the most researched time category. In a meta-analysis (with 212 participants), the future TP was positively associated with grade point average (GPA), life satisfaction, exercise, and financial knowledge. It was also negatively associated with anxiety, depression, substance

abuse, and risky behaviors (Kooij et al., 2018). There are also various studies in the literature examining the TP with its multidimensional structure. A relationship was found between past-positive, past-negative, and present-fatalistic TPs and psychopathology measures (van Beek et al., 2011). A relationship was also found between past-positive, past-negative, present-hedonistic, and present-fatalistic TPs and mindfulness (Drake et al., 2008). It was found that individuals who evaluated the past positively (high past positive score and low past negative score) and enjoyed the present (high present hedonistic score) had higher life satisfaction (Zhang & Howell, 2011). These results showed that various temporal frames can affect judgment and decisions in different ways. The findings also revealed that a multidimensional assessment of temporal frames will provide more comprehensive predictions than a one-dimensional perspective.

Time perspective on career decision-making difficulties

Studies in this field have focused on examining the relationships between future time orientation and CDMD. Super (1974) suggested future orientation or career planning as the main dimension of vocational maturity (Marko & Savickas, 1998). Savickas et al. (1984) considered the TP an individual diversity in career decision-making. Marko and Savickas (1998) developed an intervention that strengthened future orientation and career planning attitudes by developing a sense of continuity among the past, present, and future. This intervention suggested future orientation or career planning as a key element of career maturity, because imagining oneself having a career requires a time orientation that associates past experiences and current behaviors with one's expected future (Marko & Savickas, 1998). In the literature, several studies on CDMD specifically focused on planning and the future TP (Ferrari et al., 2010; Jia et al., 2022; Park et al., 2018; Walker & Tracey, 2012). The results were that the future TP is an important part of career planning and exploration (Janeiro, 2010; Marko & Savickas, 1998) and career indecision (Ferrari et al., 2010). However, these studies examined the TP as one-dimensional and did not examine how other psychological aspects of time might be related to career decision-making. Taber (2013) examined the relationship between adults' CDMD and their TP and found that different temporal orientations were associated with CDMD. Lukács and Orosz (2013) examined the relationship between high school students' career indecisions and their TPs using variable-centered and person-centered analyses. According to the results of the study, high school students who intensively planned for the future experienced less general career indecision, and those who had strong beliefs about fate experienced more CDMD.

Defined and classified by Gati et al. (1996), CDMD emphasizes individual differences with the assumption that the individual may experience a single difficulty or a combination of difficulties. The TPs proposed by Zimbardo and Boyd (1999) have a phenomenological and dynamic view that considers individual differences. In addition, the two concepts, whose relationship is examined in this study, are process-oriented. Gati et al. (1996) modeled difficulties as difficulties that may occur before (the past) and during decision-making (the present) and considered the impact of expectations of and concerns for the future. Both CDMD and TP are dynamic and process-oriented concepts.

TP has an impact on significant thoughts, judgments, attitudes, decisions, and actions. How an individual interprets the past, how s/he evaluates the impact of the present on the future, and what s/he expects from the future can affect his/her decision-making processes. Career interventions are designed for individuals who have a high level of future time orientation. However, individuals with low levels of future TP and high levels of other TPs cannot benefit enough from these interventions (Marko & Savickas, 1998). One of the main purposes of career counseling is to facilitate the process of career decision-making by helping clients cope with CDMD. (Gati et al., 1996). Young adulthood is a developmental period in which many important decisions about career and identity are made. Therefore, understanding how the multidimensional nature of past, present, and future perspectives impacts young adults' CDMD can deepen knowledge of CDMD and assist in planning career interventions for young adults.

Method

Participants

The participants of the study included 331 university students (243 women- 73.4%; 88 men- 26.6%) recruited using convenience sampling, who studied at different faculties in a university in Turkey in the 2021–2022 academic year. The data of the study were collected from a large state university located in a developed industrial trade city in the inner region of Turkey. Attracting students from all over the country, this university is one of the research universities in Turkey. Participants studied under the Faculty of Arts and Sciences (21 participants – 6.4%), the Faculty of Education (143 participants – 43.2%), the Faculty of Law (65 participants – 19.6%), the Faculty of Health Sciences (13 participants – 3.9%), Engineering Faculties (12 participants – 3.6%), and the Faculty of Economics and Administrative Sciences (77 participants – 23.3%). The ages of the participants varied between 19 and 25 years ($M_{age}=21.24$,

$SD=1.44$). One hundred six (32%) participants were in their first-year, 118 (35.6%) were in their second-year, 47 (14.2%) were in their third-year, and 60 (18.1%) were final-year students. The participants defined their socioeconomic levels as low (46 participants – 13.9%), medium (276 participants – 83.4%), and high (9 participants – 2.7%).

Procedure

An online questionnaire was designed after ethical approval was obtained for the study. Students were contacted through classroom announcement groups and were invited to participate in an online survey that aimed to examine the role of an individual's perspective of the past, future, and present in career decision-making. The announcement invitation text contained essential information explaining the purpose of the research, privacy issues, and the right to withdraw from the survey at any time without penalty. A hyperlink to the online questionnaire was sent with the invitation text. The questionnaire took almost 20 min to complete and it included a consent form, several demographic questions, two measures that were used for the study, and an information sheet.

Measures

Career decision-making difficulties questionnaire (CDMDQ) The original CDMDQ was developed by Gati and Saka (2001) to evaluate CDMD. Bacanlı (2016) adapted the scale for Turkish adolescents. Thereafter, the Turkish version was adapted for young adults by Bacanlı and Oztemel (2017). The CDMDQ is a nine-point Likert-type scale consisting of 34 items, two of which are control items. The results of the analysis showed that the Turkish versions were similar to those of the original CDMDQ. Accordingly, the CDMDQ consisted of three major categories and 10 sub-categories.

Lack of Readiness (LOR), the first of the major categories, including as sub-categories lack of motivation (M), general indecisiveness (GI), and dysfunctional beliefs (B). A sample item for the first category was “I know that I should choose a career, but I have no motivation to make a decision.” Lack of Information (LOI), the second of the major categories, including as sub-categories career decision-making process (P), self (S), occupations (O), and ways of obtaining information (WOI). A sample item for the second category was “I don't know that to consider when deciding on a profession; so it's hard for me to make a career decision.” Inconsistent Information (InI), the third of the major categories including as sub-categories unreliable information (UI), internal conflicts (IC), and external conflicts (EC). A sample item

for the second category was “I have conflicting information about the characteristics of a particular career or training programme, so it’s hard for me to make a career decision.” High scores indicated that the individual had more difficulties. The Cronbach alpha internal consistency coefficients calculated for the CDMDQ were 0.64 (LOR), 0.95 (LOI), 0.93 (InI), and 0.94 (whole scale) (Bacanlı & Öztemel, 2017). In this study, the Cronbach alpha coefficients calculated for the CDMDQ were 0.79 (LOR), 0.97 (LOI), 0.95 (InI), and 0.96 (whole scale).

Zimbardo Time Perspective Inventory-Short Form (ZTPI-SF) : The original ZTPI was developed by Zimbardo and Boyd (1999), and the short version was formed by Kostal et al. (2016). Kocayörük and Simsek (2020) adapted the scale for university students in Turkey. The ZTPI-SF is a five-point Likert-type scale consisting of 15 items. According to the analysis results, the Turkish version of the ZTPI-SF consists of five factors as in the original scale. Sample items of the scale were as follows: for past-negative “I often think of what I should have done differently in my life”; for past positive “Familiar childhood sights, sounds, smells often bring back a flood of wonderful memories”; for present fatalistic “My life is controlled by forces I cannot influence”; for present hedonistic “I take risks to make my life exciting”; and for future “When I want to achieve something, I set goals and consider specific means for reaching those goals.” The test-retest coefficients calculated for the ZTPI-SF were 0.62 (past-positive), 0.55 (past-negative), 0.57 (present-hedonistic), 0.60 (present-fatalistic), and 0.69 (future) (Kocayörük & Şimşek, 2020). In this study, the Cronbach alpha coefficients calculated for the ZTPI-SF were 0.68 (past-positive), 0.77 (past-negative), 0.69 (present-hedonistic), 0.71 (present-fatalistic), and 0.80 (future).

Demographic form (DF) The DF was developed by the researcher for this study. The form included questions about gender, faculty and department, grade level, and socio-economic level.

Data Analysis

Firstly, the skewness and kurtosis values of each variable were determined to test the normality assumption of the distribution of the collected data. Canonical correlation analysis (CCA) was used to examine the relationship between TPs and CDMD. CCA is a statistical technique used to examine the complex relationship between multiple independent and dependent variables and can be thought of as a descriptive technique rather than testing a hypothesis. It can be considered as an explanatory technique that works

in parallel with structural equation modeling, which is a statistical technique that confirms the theoretical structure revealed by research (Tabachnick & Fidell, 2013).

Results

Preliminary analyses

Before the analysis of the data, missing data, outliers, and the assumption of normality were examined to evaluate the hypothetical assumptions of the CCA. Thereafter, homoscedasticity and linearity assumptions were tested. Missing data were examined, which was less than 5%. As a result of the Little’s Missing Completely at Random (MCAR) test performed to identify whether these missing values were missing at random, the Little’s MCAR result was non-significant ($p=-0.72$) suggesting that there was no relation between the missingness of the data. Mean values were inserted for the estimation of missing data. In the data set, it was found that there was no value with z-score less than -3 or greater than 3, that is, no outliers. Accordingly, it can be said that it met the common criteria accepted in the literature. (Tabachnick & Fidell, 2013). The Mahalanobis distances of the data were calculated and compared according to the critical chi-square value. According to the number of variables, it was concluded that the critical value was 37.697 and, 10 data exceeding this value were deleted. To examine the normality assumption of the data, the skewness and kurtosis coefficients of the variables were calculated. The skewness and kurtosis values were between -1 and 1 for all variables. This result indicated that the normality assumption was met for all variables (Tabachnick & Fidell, 2013). The distributions of residues using SPSS were tested to assess the homoscedasticity assumption. Accordingly, the homoscedasticity and linearity assumptions were met for all variables (Tabachnick & Fidell, 2013). In Table 1, the correlation coefficients between the variables, $\bar{X}$ and Ss, and the skewness and kurtosis values are presented.

Confirmatory factor analysis (CFA)

CFA was conducted to demonstrate that the measures had the intended structure in the sample of this study. The CFA of the ZPTI indicated that $\chi^2=209.346$; $df=80$; $p=0.00$; $\chi^2/sd=2.6$, RMSEA=0.070, and GFI=0.92, SRMR=0.063. The CFA of the CDMDQ indicated that $\chi^2=1292.663$; $df=419$; $p=0.00$; $\chi^2/sd=3.08$; RMSEA=0.079, GFI=0.81, SRMR=0.053.

Table 1 Correlation coefficients between the variables, $\bar{X}$ and S_s , and skewness and kurtosis values

Variables	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
1. Past Negatives	1														
2. Past Positives		1													
3. Present Fatalistic			1												
4. Present Hedonistic				1											
5. Future					1										
6. LOR - M						1									
7. LOR - GI							1								
8. LOR - B								1							
9. LOI - P									1						
10. LOI - S										1					
11. LOI - O											1				
12. LOI - WOI												1			
13. InI - UI													1		
14. InI - IC														1	
15. InI - EC															1
Mean	3.5	3.6	2.1	3.5	3.7	3.3	4.8	4.9	3.8	3.5	3.7	3.5	3.6	3.6	3.4
SD	0.93	0.83	0.84	0.81	0.83	1.93	2.20	2.06	2.58	2.48	2.50	2.54	2.51	2.36	2.58

** $p < 0.05$ *** $p < 0.001$

Canonical correlation between time perspective and career decision-making difficulties

CCA was used to explore the relationship between TPs and CDMD of young adults. Firstly, multivariate significance tests were analyzed, which indicated the canonical models constructed in this study possessed statistical significance. According to the results of the analysis, there were five canonical variables and three were found to be significant. For the first Wilks' $\lambda = 0.52$, $F(50, 1444.54) = 4.38$, and $p < 0.001$, for the second Wilks' $\lambda = 0.74$, $F(36, 1189.68) = 2.77$, and $p < 0.001$, and for the third Wilks' $\lambda = 0.84$, $F(24, 922.89) = 2.35$, and $p < 0.001$. The calculated canonical correlation coefficients were 0.54 (40% overlapping variance), 0.35 (14% overlapping variance), and 0.32 (12% overlapping variance), respectively.

The results of the CCA are presented in Table 2. As suggested by Tabachnick and Fidell (2013), among the three canonical variable pairs that were found to be significant according to the CCA results, those with a canonical load of 0.30 and above were commented. The first pair of canonical variates showed that lower levels of present-hedonistic (-0.61) and past-negative (-0.85) were related with less LOR - M (-0.63), LOR - GI (-0.79), LOR - B (-0.34), LOI - P (-0.93), LOI - S (-0.84), LOI - O (-0.73), LOI - WOI (-0.76), InI - UI (-0.77), InI - IC (-0.80), and InI - EC (-0.76). The second canonical variate showed that lower levels of past-positive (-0.33), past-negative (-0.44), present-hedonistic (-0.32), and future (-0.66) and higher levels of present-fatalistic (0.60) were related with fewer problems regarding LOR - B (-0.79). The third canonical variate showed that higher levels of past-positive (0.46), present-fatalistic (0.37), present-hedonistic (0.81), and future (0.43) were related with more problems regarding LOR - M (0.55).

Discussion

The aim of this research was to examine the relationship between past, present, and future perspectives and CDMD. The findings of this research revealed three models of relationships between the five TPs and CDMD.

The first pair of canonical variables showed that the past-negative and present-fatalistic TPs were associated with all sub-dimensions of the CDMDQ. Accordingly, individuals who show a tendency to assess the past negatively and think that they cannot shape their future with their actions have lower motivation, are more indecisive, have more dysfunctional beliefs about career decision-making, and have less information about the career decision-making process, themselves, career alternatives, and ways of obtaining additional information. In addition, these individuals have

Table 2 Canonical correlation between time perspective and career decision-making difficulties

	Variate 1		Variate 2		Variate 3	
	Coef.	r_s	Coef.	r_s	Coef.	r_s
TP						
Past Negatives	−0.77	−0.85	−0.54	−0.44	−0.34	−0.25
Past Positives	−0.05	−0.13	−0.08	−0.33	0.24	0.46
Present Fatalistic	−0.46	−0.61	0.59	0.60	0.45	0.37
Present Hedonistic	−0.08	−0.05	−0.13	−0.32	0.67	0.81
Future	0.17	0.24	−0.51	−0.66	0.20	0.43
CDMD						
LOR- M	−0.63	−0.63	0.28	0.26	10	0.55
LOR - GI	−0.29	−0.79	−0.36	−0.27	−0.7	−0.23
LOR - B	−0.03	−0.34	−0.78	−0.79	0.38	0.28
LOI - P	−0.54	−0.93	0.05	0.07	0.12	0.03
LOI - S	−0.06	−0.84	0.41	0.23	−10	−0.01
LOI - O	0.16	−0.73	−0.45	0.04	0.14	0.10
LOI-WOI	−0.03	−0.76	0.11	0.10	0.32	0.11
InI - UI	−0.08	−0.77	−0.21	0.08	0.48	0.17
InI - IC	−0.01	−0.80	0.59	0.26	−0.03	0.01
InI - EC	−0.24	−0.76	−10	0.12	−0.08	0.01

more inconsistent information about and experience more internal and external conflicts in the decision-making process. Taber (2013) stated that the composition of the past-negative, present-fatalistic, and present-hedonistic time orientation is associated with CDMD and pointed out the difficulties of both the individual's readiness to make decisions and the decision-making action itself. Zimbardo and Boyd (1999) stated that individuals who evaluate the past negatively are less motivated to strive for future rewards. In the same study, it was found that the individuals who scored high in the present-fatalistic perspective were not satisfied with their life at the time and thought that they could not change it in the future. The low academic grade point averages of these individuals were interpreted as an indicator of their low motivation for the future. Therefore, individuals who evaluate their past negatively and pessimistically may think that they do not have the power to change their future. Moreover, recalling similar situations in the past can be nostalgic and positive, or discouraging and negative, and can affect how the decision making process interpreted. (Zimbardo & Boyd, 1999). Indeed, Lukács & Orosz (2013) found that the past-negative time orientation was associated with career indecision and the need for information. It can be said that the TP pattern that emerged in the first canonical pair in the current study was related to the individual's low motivation and participation in decision-making, to not having the information they needed for the decision-making process, and to conflicts within themselves and with others, which make decision-making difficult.

The second pair of canonical variables showed that high past (positive and negative), present-hedonistic, and future tense perspectives and low present-fatalistic TPs were

associated with CDMD related to dysfunctional beliefs. Individuals with the TP pattern that emerged in this canonical variation plan their futures and have the belief that they can plan and control the future. Present-hedonistic-oriented individuals enjoy being productive and creative today for a future-oriented activity (Bonniwell & Zimbardo, 2015). They also evaluate their past experiences positively and negatively, focusing on the historical continuity of the self. When individuals have such a pattern, they may have difficulty with dysfunctional beliefs, such as believing that only one career suits them and that the impact of the career they choose will last a lifetime. As mentioned earlier, there is a significant shortcoming in studies that directly examine the relationship between CDMD and the five TPs. Previous research has considered TP as one-dimensional and only examined the relationship between Future TP and CDMD. Therefore, it is difficult to compare and explain the findings of the current study with respect to previous research. However, based on various studies (Bonniwell & Zimbardo, 2015; Kooij et al., 2018) conducted on TPs, TP is effective in the career decision-making process and in the decision and judgemental processes. The TP pattern that emerged in the second pair of canonical variables includes a goal-seeking, ambitious, and stressful future orientation (Zimbardo & Boyd, 1999), and a past orientation that is cautious of the change and is focused on the continuity of the self (Bonniwell and Zimbardo, 2015). By assigning superior characteristics to their career decision, individuals with this TP pattern may be unrealistically glorifying the meaning and importance of their decision. Dysfunctional career beliefs can cause individuals to avoid starting their career decision-making process, to regret their career decision, or to feel a

lack of commitment to their chosen path (Hechtlinger et al., 2019).

The third pair of canonical variables showed that higher levels of past-positive, present-fatalistic, present-hedonistic, and future TPs were associated with more CDMD related to lack of motivation. In other words, the individual enjoys and feels excited about the present, evaluates the past from a positive and emotional point of view, and makes some plans for future rewards. In addition, the individual thinks that s/he cannot afford to change the future, even at a low level. Thus, when the individual has such a pattern, s/he is more reluctant to make career decisions, gives less importance to making career decisions, and experiences a lack of motivation, which is characterized by thinking that time will bring the right decision. The TP pattern that occurred in the third pair of canonical variables includes present hedonistic, present fatalistic, past positive, and future-oriented. Present hedonistic individuals live in the moment, seek excitement, and are less concerned with the results of their actions. A present fatalistic individual is anxious and desperate (Bonniwell and Zimbardo, 2015). A past-positive individual is nostalgic towards the past and desires to gain parental approval. A future-oriented individual seeks goals but experiences time pressure (Zimbardo & Boyd, 1999). While past orientation is associated with cautiousness and avoidance of new experiences, existing research also associated the present-fatalistic orientation with a negative self-image, which makes it difficult to take action (Bonniwell and Zimbardo, 2015) and avoidant procrastination (Ferrari & Diaz-Morale, 2007). This result can provide insight to explain why individuals with this time orientation may experience more difficulties with the motivation to make career decisions.

As a result, TP patterns of individuals were found to be associated with CDMD. In this study, the relationship between CDMD and TPs was examined. The results of the research have various implications for theory and practice.

Although most of the theoretical and applied studies in career counseling literature focused on a single dimension of time, namely the future, individuals applying for career counseling for various reasons may have different temporal orientations. Therefore, there is a need for relational and empirical studies that will make the role of an individual's TP more understandable in relation to CDMD. Understanding the facilitating or complicating roles of TPs in the career decision-making process is important for the identification and development of career interventions that can be applied to support this process. Interventions can be developed to change the temporal orientations of the client that make it difficult to make decisions or to strengthen the temporal orientation that will play a facilitating role in the career decision-making process. Balanced TP is defined as the interaction of past, present and future components of TP

flexibly and variably according to the requirements of the situation (Bonniwell & Zimbardo, 2015), and it can have an impact on CDMD. Therefore, future research should examine the relationship between CDMD with the “Balanced Time Perspective”. Based on the results of this study and the suggestions of Bonniwell and Zimbardo (2015), the past-positive and future TPs were high, the present-hedonistic TP was medium, and the past-negative and present fatalistic TPs were low with less CDMD and career decisions.

This study has some limitations. Firstly, causal inferences cannot be made about the relationship between CDMD and TPs as the method of the study was correlational. Based on the developmental nature of the TP and the assumption that it is a stable feature, an assumption can be made that CDMD is the indicator of TPs (Taber, 2013). Secondly, the participants of the study consisted of young adult college students willing to participate in the research. It is recommended to use methods such as clustering and proportional sampling in the sample design for future studies. It is also recommended to work with universities in different cities and with different sample groups (such as young working adults) in future studies.

Funding This research has not received specific support from public sector agencies, from the commercial sector, or from non-profit organizations.

Data Availability The datasets generated and/or analyzed during the current study are available from the corresponding author on reasonable request.

Declarations

Conflict of interest The authors have no conflicts of interest to declare that are relevant to the content of this article.

Ethical approval Ethical approval of this study was approved by the Erciyes University Social and Human Sciences Ethics Committee (Date: 22.02.2022 No: 82). The 1964 Helsinki declaration and its later amendments and comparable ethical standards were followed in all the procedures performed in this study.

Consent to participate Informed consent was obtained from all participants included in the study.

References

- Akyol, E. Y., & Bacanlı, F. (2019). Building a solution-focused career counselling strategy for career indecision. *Australian Journal of Career Development*, 28(1), 73–79. <https://doi.org/10.1177/1038416218779623>
- Amir, T., & Gati, I. (2006). Facets of career decision-making difficulties. *British Journal of Guidance & Counselling*, 34(4), 483–503. <https://doi.org/10.1080/03069880600942608>
- Arbona, C., Fan, W., Phang, A., Olvera, N., & Dios, M. (2021). Intolerance of uncertainty, anxiety, and Career Indecision: a mediation

- model. *Journal of Career Assessment*, 29(4), 699–716. <https://doi.org/10.1177/10690727211002564>
- Arnett, J. J. (2000). Emerging adulthood: a theory of development from the late teens through the twenties. *American Psychologist*, 55(5), 469–480. <https://doi.org/10.1037/0003-066X.55.5.469>
- Arnett, J. J. (2014). *Emerging Adulthood: the Winding Road from the late teens through the Twenties*. Oxford University Press. <https://doi.org/10.1093/acprof:oso/9780199929382.001.0001>
- Bacanlı, F. (2016). Career decision-making difficulties of Turkish adolescents. *International Journal for Educational and Vocational Guidance*, 16(2), 233–250.
- Bacanlı, F. (2012). Relationships between career decision making difficulties and irrational beliefs about career choice. *Turkish Psychological Counseling and Guidance Journal*, 4(37), 86–95.
- Bacanlı, F., Esici, H., & Ozunlu, M. B. (2013). An examination of career decision making difficulties according to several variables. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, 5(40), 198–211.
- Bacanlı, F., & Salman, N. (2018). October). *Career psychological counseling based on three-stage career decision making model: case study*. 20th (pp. 25–27). Turkey: International Psychological Counseling and Guidance Congress, Samsun.
- Bacanlı, F., & Öztemel, K. (2017, Nisan). *Kariyer karar verme güçlükleri ölçeğinin genç yetişkin örnekleminde faktör yapısının ve güvenilirliğinin incelenmesi*. [Investigation of factor structure and reliability of career decision-making difficulties scale in young adult sample.] 26. International Conference Educational Science, Antalya, Turkey.
- Boniwell, I., & Zimbardo, P. G. (2015). Balancing time perspective in pursuit of optimal functioning. In Joseph, S. (Ed.) *Positive psychology in practice: Promoting human flourishing in work, health, education, and everyday life* (2nd Edition, pp. 223–236). Wiley.
- Boyd, J. N., & Zimbardo, P. G. (2005). Time Perspective, Health, and Risk Taking. In Strathman, A. & Joireman, J. (Eds.) *Understanding Behavior in the Context of Time*. (1st edition, pp. 97–119). Psychology Press.
- Burns, G. N., Morris, M. B., Rousseau, N., & Taylor, J. (2013). Personality, interests, and career indecision: a multidimensional perspective. *Journal of Applied Social Psychology*, 43(10), 2090–2099. <https://doi.org/10.1111/jasp.12162>
- Buyukgoze Kavas, A. (2011). *Testing a model of career indecision among university students based on social cognitive career theory*. [Doctoral dissertation, Middle East Technical University] <https://open.metu.edu.tr/bitstream/handle/11511/20678/index.pdf>
- Di Fabio, A., Palazzeschi, L., Levin, N., & Gati, I. (2015). The role of personality in the Career decision-making difficulties of Italian young adults. *Journal of Career Assessment*, 23(2), 281–293. <https://doi.org/10.1177/1069072714535031>
- Dogan, H. (2010). The effect of career decision-making group guidance program on 9th grade students levels of career-decision making difficulties [Doctoral dissertation, Gazi University].
- Dogan, İ., Saracli, S., & Saracli, Z. (2005). Üniversiteye yerleşen öğrencilerin bölüm memnuniyetlerinin ridit analizi ile incelenmesi ve Osmangazi Üniversitesi iibf birinci sınıf öğrencileri üzerine bir uygulama [Examining the students satisfactions from their departments who joined to University by ridit analysis and an application on junior students attending to Osmangazi University Faculty of Economics and Administrative Sciences]. *Sosyal Bilimler Dergisi*, 6(2), 175–184.
- Drake, L., Duncan, E., Sutherland, F., Abernethy, C., & Henry, C. (2008). Time Perspective and Correlates of Wellbeing. *Time & Society*, 17(1), 47–61. <https://doi.org/10.1177/0961463X07086304>
- Erkan, S., Cankaya, Z. C., Terzi, S., & Ozbay, Y. (2011). Üniversite psikolojik danışma ve rehberlik merkezlerinin incelenmesi. [*An Assessment of University Counseling and Guidance Centers*]. Mehmet Akif Ersoy Üniversitesi Eğitim Fakültesi Dergisi, 1(22), 174–198.
- Ferrari, J. R., & Díaz-Morales, J. F. (2007). Procrastination: different time orientations reflect different motives. *Journal of research in personality*, 41(3), 707–714.
- Ferrari, L., Nota, L., & Soresi, S. (2010). Time perspective and indecision in young and older adolescents. *British Journal of Guidance & Counselling*, 38(1), 61–82. <https://doi.org/10.1080/03069880903408612>
- Gale, R. (2016). *The philosophy of time: a Collection of Essays*. Springer.
- Gati, I., Gadassi, R., Saka, N., Hadadi, Y., Ansenberg, N., Friedmann, R., & Asulin-Peretz, L. (2011). Emotional and personality-related aspects of career decision-making difficulties: facets of career indecisiveness. *Journal of Career Assessment*, 19(1), 3–20.
- Gati, I., Krausz, M., & Osipow, S. H. (1996). A taxonomy of difficulties in Career decision making. *Journal of Counseling Psychology*, 43(4), 510–526.
- Gati, I., & Saka, N. (2001a). Internet-based versus paper and-pencil assessment: measuring career decision-making difficulties. *Journal of Career Assessment*, 9, 397–416.
- Gati, I., & Saka, N. (2001b). High school students' career related decision-making difficulties. *Journal of Counseling and Development*, 79, 331–340.
- Gizir, C. A. (2005). Orta Doğu Teknik Üniversitesi son sınıf öğrencilerinin problemleri üzerine bir çalışma. [A study on the problems of the Middle East Technical University senior students]. *Mersin Üniversitesi Eğitim Fakültesi Dergisi*, 1(2), 196–213.
- Hechtlinger, S., Levin, N., & Gati, I. (2019). Dysfunctional career decision-making beliefs: A multidimensional model and measure. *Journal of Career Assessment*, 27(2), 209–229.
- Hijazi, Y., Tatar, M., ve, & Gati, I. (2004). Career decisionmaking difficulties among Israeli and Palestinian Arab high-school seniors. *Professional School Counseling*, 8, 64–72.
- Janeiro, I. N. (2010). Motivational dynamics in the development of career attitudes among adolescents. *Journal of Vocational Behavior*, 76, 170–177. <https://doi.org/10.1016/j.jvb.2009.12.003>
- Jia, Y., Hou, Z. J., Zhang, H., & Xiao, Y. (2022). Future Time Perspective, Career adaptability, anxiety, and Career decision-making difficulty: exploring mediations and moderations. *Journal of Career Development*, 49(2), 282–296. <https://doi.org/10.1177/0894845320941922>
- Kalafat, T. (2014). *The study of a model testing about factors effect on perception of career future* [Doctoral dissertation, Ankara University].
- Kelly, K. R., & Lee, W. C. (2002). Mapping the domain of career decision problems. *Journal of Vocational Behavior*, 41, 302–326.
- Kleiman, T., ve, Gati, I., Peterson, G., Sampson, J., Reardon, R., & ve Lenz, J. (2004). Dysfunctional thinking and difficulties in career decision making. *Journal of Career Assessment*, 12, 312–331
- Kocayörük, E., & Şimşek, Ö. F. (2020). The validity and reliability of the Turkish brief version of the Zimbardo Time Perspective Inventory for adolescents. *Düşünen Adam: The Journal of Psychiatry and Neurological Sciences*. <https://doi.org/10.14744/DAJPNS.2019.00059>
- Kooij, D., Kanfer, R., Betts, M., & Rudolph, C. (2018). Future time perspective: a systematic review and Meta-analysis. *Journal of Applied Psychology*, 103, <https://doi.org/10.1037/apl0000306>
- Koydemir, S., & Demir, A. (2013). Odtü Öğrencilerinde Yardım Arama Davranışı. [Help-seeking behaviors of METU students. *Marmara Üniversitesi Atatürk Eğitim Fakültesi Eğitim Bilimleri Dergisi*, 22(22), 211–218.
- Kurt, G. (2008). Gri ilişki çözümlemesi ve ridit çözümlemesi kullanılarak üniversite öğrencilerinin çeşitli kaygılarının değerlendirilmesi [University Students Various Anxious

- Evaluation with Grey Relational Analysis and Redit Analysis]. Akademik Bakış, Uluslararası Hakemli Sosyal Bilimler E-Dergisi, 14.
- Lipshits-Braziler, Y., Gati, I., & Tatar, M. (2017). Strategies for coping with Career Indecision: Convergent, Divergent, and Incremental Validity. *Journal of Career Assessment*, 25(2), 183–202. <https://doi.org/10.1177/1069072715620608>
- Marko, K. W., & Savickas, M., L. (1998). Effectiveness of a Career Time Perspective intervention | elsevier enhanced reader. *Journal Of Vocational Behavior*, 52, 106–119. <https://doi.org/10.1006/jvbe.1996.1566>
- Mau, W. C. (2001). Assessing career decision-making difficulties: a cross-cultural study. *Journal of Career Assessment*, 9, 353–364.
- Mello, Z. R., & Worrell, F. C. (2015). The Past, the Present, and the Future: A Conceptual Model of Time Perspective in Adolescence. IN M. Stolarski, N. Fieulaine, & W. van Beek (Eds.), *Time Perspective Theory; Review, Research and Application* (pp. 115–129). Springer International Publishing. https://doi.org/10.1007/978-3-319-07368-2_7
- Mohammed, S., & Marhefka, J. T. (2020). How have we, do we, and will we measure time perspective? A review of methodological and measurement issues. *Journal of Organizational Behavior*, 41(3), 276–293. <https://doi.org/10.1002/job.2414>
- Mutlu, T. (2011). High school students' career decision-making difficulties. [Master's Thesis, Ankara University]
- Mutlu, T., Korkut-Owen, F., Özdemir, S., & Ulaş-Kılıç, Ö. (2019). Öğretmen Adaylarının Kariyer Planları, Yaşadıkları Kariyer Kararsızlıkları ve Bununla Baş Etme Stratejileri [Career Plans, Career indecision and strategies for coping with Career indecision among teacher candidates]. *Kariyer Psikolojik Danışmanlığı Dergisi*, 2(1), 1–31.
- Ness, D., & Morgan, T. (2003). Career decision-making difficulties of first-year students. *Canadian Journal of Career Development*, 2(1), 33–39.
- Park, I. J., Kim, M., Kwon, S., & Lee, H. G. (2018). The Relationships of Self-Esteem, Future Time Perspective, Positive Affect, Social Support, and Career Decision: A Longitudinal Multilevel Study. *Frontiers in Psychology*, 9. <https://www.frontiersin.org/article/https://doi.org/10.3389/fpsyg.2018.00514>
- Park, K., Woo, S., Park, K., Kyea, J., & Yang, E. (2017). The Mediation Effects of Career Exploration on the relationship between trait anxiety and Career Indecision. *Journal of Career Development*, 44(5), 440–452. <https://doi.org/10.1177/0894845316662346>
- Salman, N., & Kan, A. (2021). Predicting career decision-making difficulties: the role of barriers, self-efficacy, and decision status. *Turkish Psychological Counseling and Guidance Journal*, 11(60), 49–66.
- Santos, A., Wang, W., & Lewis, J. (2018). Emotional intelligence and career decision-making difficulties: the mediating role of career decision self-efficacy. *Journal of Vocational Behavior*, 107, 295–309. <https://doi.org/10.1016/j.jvb.2018.05.008>
- Shipp, A. J., Edwards, J. R., & Lambert, L. S. (2009). Conceptualization and measurement of temporal focus: the subjective experience of the past, present, and future. *Organizational Behavior and Human Decision Processes*, 110(1), 1–22. <https://doi.org/10.1016/j.obhdp.2009.05.001>
- Sovet, L., Tak, J., & Sungcheol, J. (2015). Validation of the career decision-making difficulties questionnaire among korean college students. *Journal of Career Assessment*. <https://doi.org/10.1177/1069072714553556>
- Stolarski, M., Fieulaine, N., & Zimbardo, P. G. (2018). Putting time in a wider perspective: the past, the present, and the future of time perspective theory. In V. Zeigler-Hill, & T. Shackelford (Eds.), *The SAGE handbook of personality and individual differences* (pp. 592–628). Thousand Oakes, CA: SAGE. <https://doi.org/10.4135/9781526451163.n28>
- Storme, M., Celik, P., & Myszkowski, N. (2019). Career decision ambiguity tolerance and Career decision-making difficulties in a french sample: the mediating role of Career decision self-efficacy. *Journal of Career Assessment*, 27(2), 273–288. <https://doi.org/10.1177/1069072717748958>
- Tabachnick, B. G., & Fidell, L. S. (2013). *Using Multivariate Statistics* (Sixth Edition). Pearson.
- Taber, B. J. (2013). Time Perspective and Career decision-making difficulties in adults. *Journal of Career Assessment*, 21(2), 200–209. <https://doi.org/10.1177/1069072712466722>
- Tien, H. L. S. (2005). The validation of the career decision making difficulties scale in a chinese culture. *Journal of Career Assessment*, 13, 114–127.
- Tien, H. S. (2001). Career decision-making difficulties perceived by college students in Taiwan. *Bulletin of Educational Psychology*, 33, 87–98.
- Topkaya, N., & Meydan, B. (2013). University Students' Problem Areas, Sources of Help, and Intentions to Seek Psychological Help Trakya Üniversitesi Eğitim Fakültesi Dergisi, 3(1).
- Turkum, A. S., Kızıltas, A., & Sariyer, A. (2004). Anadolu Üniversitesi Psikolojik Danışma ve Rehberlik Merkezi'nin Hedef Kitlesinin Psikolojik İhtiyaçlarına İlişkin Ön Çalışma. [Preliminary Study on the Psychological Needs of the Target Group of Anadolu University Psychological Counseling and Guidance Center]. *Türk Psikolojik Danışma ve Rehberlik Dergisi*, 3(21), 15–27
- van Beek, W., Berghuis, H., Kerkhof, A., & Beekman, A. (2011). Time perspective, personality and psychopathology: Zimbardo's time perspective inventory in psychiatry. *Time & Society*, 20(3), 364–374. <https://doi.org/10.1177/0961463X10373960>
- Vertsberger, D., & Gati, I. (2016). Career decision-making difficulties and help-seeking among israeli young adults. *Journal of Career Development*, 43(2), 145–159.
- Walker, J. V., & Peterson, G. W. (2012). Career Thoughts, indecision, and Depression: implications for Mental Health Assessment in Career Counseling. *Journal of Career Assessment*, 20(4), 497–506. <https://doi.org/10.1177/1069072712450010>
- Walker, T. L., & Tracey, T. J. G. (2012). The role of future time perspective in career decision-making. *Journal of Vocational Behavior*, 81(2), 150–158. <https://doi.org/10.1016/j.jvb.2012.06.002>
- Willner, T., Gati, I., & Guan, Y. (2015). Career decision-making profiles and career decision-making difficulties: a cross-cultural comparison among US, Israeli, and chinese samples. *Journal of Vocational Behavior*, 88, 143–153.
- Xu, H., & Tracey, T. J. G. (2015). Ambiguity Tolerance with Career Indecision: an examination of the Mediation Effect of Career decision-making self-efficacy. *Journal of Career Assessment*, 23(4), 519–532. <https://doi.org/10.1177/1069072714553073>
- Yerin-Güneri, O., Aydın, G., & Skovholt, T. (2003). Counseling needs of students and evaluation of Counseling Services at a large Urban University in Turkey. *International Journal for the Advancement of Counselling*, 25(1), 53–63.
- Zhang, J. W., & Howell, R. T. (2011). Do time perspectives predict unique variance in life satisfaction beyond personality traits? *Personality and Individual Differences*, 50(8), 1261–1266. <https://doi.org/10.1016/j.paid.2011.02.021>
- Zimbardo, P. G., & Boyd, J. N. (1999). Putting time in perspective: a valid, reliable individual-differences metric. *Journal of Personality and Social Psychology*, 77(6), 1271–1288. <https://doi.org/10.1037/0022-3514.77.6.1271>

Springer Nature or its licensor (e.g. a society or other partner) holds exclusive rights to this article under a publishing agreement with the author(s) or other rightsholder(s); author self-archiving of the accepted

manuscript version of this article is solely governed by the terms of such publishing agreement and applicable law.