

Perceived Control and Career Decision-Making Self-Efficacy as Predictors of Career Optimism among University Students

Üniversite Öğrencilerinde Kariyer İyimserliğinin Yordayıcıları Olarak Algılanan Kontrol ve Kariyer Kararı Verme Öz-Yeterliliği

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Abstract: A career is a field linked to optimism, a significant concept today. Considering the role of career optimism in career development, it is essential to be aware of the factors that may influence the level of optimism crucial to career development. In this direction, the aim of the study is to examine the role of perceived control and career decision-making self-efficacy, which can be seen as antecedents and examined for their role in predicting career optimism. Additionally, the study investigated whether the Kahramanmaraş-based earthquake, which occurred in Türkiye on February 6, 2023, differentiated the level of career optimism among university students. The sample for the study consisted of 457 undergraduate students studying in Türkiye. The study utilized a relational model, using the Sense of Control Scale, Career Decision Self-Efficacy Scale-Short Form (CDSES-SF), Career Optimism Scale for University Students, and a personal information form as data collection tools. The data were collected between November 2023 and February 2024. Data analysis involved an independent sample t-test, Pearson correlation analysis, and regression analysis. The findings of the research showed that experiencing the earthquake did not differentiate the level of career optimism, that significant relationships existed between all variables, and that perceived control and career decision-making self-efficacy together accounted for 55% of the total variance in career optimism. The results were discussed in the context of the relevant literature, and recommendations were provided for researchers.

Keywords: Career optimism, Perceived control, Career decision-making self-efficacy, Earthquake, University students.

Özet: Kariyer, günümüzde önemli bir kavram olan iyimserlikle bağlantılı bir alandır. Kariyer iyimserliğinin kariyer gelişimindeki rolü göz önüne alındığında, iyimserlik düzeyini etkileyebilecek değişkenlerin farkında olmak kariyer gelişimi için kritik öneme sahiptir. Bu doğrultuda çalışmanın amacı, kariyer iyimserliğinin öncülleri olarak kabul edilebilen kontrol algısı ve kariyer kararı verme öz yeterliliğinin kariyer iyimserliğini yordamadaki rolünü incelemektir. Ayrıca, 6 Şubat 2023 günü Türkiye’de meydana gelen Kahramanmaraş merkezli depremin üniversite öğrencilerinin kariyer iyimserliği düzeyini farklılaştırıp farklılaşmadığı da araştırılmıştır. Araştırmanın örneklemini Türkiye’de öğrenim gören 457 lisans öğrencisi oluşturmaktadır. Çalışmada ilişkisel model kullanılmış olup bu çalışmada veri toplama araçları olarak Kontrol Duygusu Ölçeği, Kariyer Kararı Öz Yeterliliği Ölçeği- Kısa Formu (CDSES-SF), Üniversite Öğrencilerinde Kariyer İyimserliği Ölçeği ve kişisel bilgi formu kullanılmıştır. Veriler Kasım 2023 ile Şubat 2024 tarihleri arasında toplanmıştır. Verilerin analizi bağımsız örneklem t-testi, Pearson korelasyon analizi ve regresyon analizini içermektedir. Araştırma bulguları depremi deneyimleme durumunun kariyer iyimserliği düzeyini farklılaştrmadığını, tüm değişkenler arasında anlamlı ilişkiler olduğunu ve kontrol algısı ve kariyer kararı verme öz yeterliliğinin birlikte kariyer iyimserliğindeki toplam varyansın %55’ini açıkladığını göstermiştir. Çalışmanın bulguları mevcut alanyazın bağlamında tartışılmış ve gelecekteki araştırmalar için öneriler sunulmuştur.

Anahtar Kelimeler: Kariyer iyimserliği, Kontrol algısı, Kariyer kararı verme öz yeterliliği, Deprem, Üniversite öğrencileri

1. Introduction

It can be argued that optimism, one of the important concepts of the modern world, has a significant impact

on the lives of individuals. While Seligman (2006) defines the concept of optimism in terms of his belief that there will be good things in the future of the individual, Carver et al. (2010) define optimism as one of the individual dif-

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ference variables that indicate the degree to which people have generalized positive expectations for their future. Optimism offers several advantages, including improved mental and physical health, enhanced overall well-being, and better academic performance (Marelích & Piercy, 2020; Boman et al., 2009). Creed et al. (2002) emphasized the importance of optimism in career development and drew attention to the fact that optimism plays an important role in career planning and research, determining career goals, and making career decisions. Eva et al. (2020) emphasized that career optimism is an integral part of professional behavioral literature and highlighted the importance of this concept in explaining why individuals in the workforce seek new career opportunities and why students aspiring to enter the workforce have positive outlooks on their career expectations.

When the literature is examined, multiple definitions of career optimism are encountered. Kalafat (2012) defined career optimism as the expectation that an individual will consistently achieve positive outcomes in their future career development or as the tendency to emphasize the most positive aspects of events while feeling comfortable in the career planning process. Similarly, Rottinghaus et al. (2005) described career optimism as the tendency to anticipate the most favorable outcomes and focus on the positive aspects of upcoming career development, along with the sense of comfort experienced while completing career planning tasks. Career optimism is viewed as a vital indicator of future career achievement (Aymans et al., 2020). When the studies on career optimism are considered, it is seen that the predecessors of this structure have less space than the results (Garcia et al., 2015). Although career optimism was initially conceptualized as a hereditary trait (Scheier & Carver, 1985), recent studies suggest that optimism is malleable and empowerable (Higgins et al., 2010). In this direction, understanding the determinants of career optimism is essential for designing targeted interventions and support systems. In this study, perceived control and career decision-making self-efficacy (CDMSE), determined based on literature and predicting career optimism, are considered independent variables.

First, the independent variable of perceived control is discussed. For the term “perceived control,” which can be translated into Turkish as “perceived control” or “sense of control,” Daşkın (2020) drew attention to the emphasis on the extent to which people can control their lives and express perception in contrast to absolute control and said that this term is defined in different ways. Considering that perceived control is related to the degree to which individuals feel in control of their lives, Lachman and Weaver (1998) explained the term

“perceived control” with the concept of perceived control. In this study, the relevant term is used as the perceived control. Abeles (1991), on the other hand, stated that perceived control significantly contributes to mental and physical well-being by stating that individuals have expectations and beliefs about their capability to carry out actions that aim to achieve the desired results and the response of the environment to these behaviors. This suggests a potential positive relationship between perceived control and career optimism. In his studies, Duffy (2010) stated that there is a positive relationship between the high level of perceived control and career optimism, supported this thought, and said that perceived control may be a critical change in professional development. In a study conducted by Kütüçü and Şentürk (2018) with women living in Türkiye, it is seen that perceived control has a positive relationship with the perception of a positive career future.

In another study by Duffy, it is observed that there may be a positive correlation between a high perception of personal control and the career decision-making process (Duffy & Dik, 2009). Other studies have been found in the literature to support what Duffy and Dik (2009) said. Drawing attention to the fact that perceived control has an important effect on the career development of university students, Luzzo et al. (1996) mentioned a substantial association between perceived control and CDMSE. Another variable whose relationship with the above studies is explained and its role in career optimism is examined is CDMSE.

CDMSE refers to the belief that an individual can perform the necessary tasks when making career decisions (Betz et al., 1996; Taylor & Betz, 1983). In other words, CDMSE denotes a person's belief in their capability to effectively tackle tasks associated with career decision-making (Hapsari & Yoenanto, 2022). When the literature on CDMSE is examined, Garcia et al. (2015), who stated that there is a positive relationship between career optimism and it, emphasized that CDMSE feeds career optimism. A meta-analysis revealed a moderate correlation ($r = .46$) among these constructs (Duru & Söner, 2024). Additionally, CDSME acts as a mediator in the connection between boundaryless career orientation and career optimism (Ahmad & Nasir, 2022). These results indicate that people with greater CDSE are likely to hold more positive views about their careers. This optimism might stem from their enhanced confidence in making career-related choices and their ability to adjust to evolving workplace conditions. At this point, CDMSE was included in the study, and the role of perceived control and CDMSE in predicting career optimism in university students was examined.

The study assessed whether the experience of the earthquake in Türkiye on February 6, 2023, differentiated the participants' levels of career optimism. Research indicates that earthquakes may decrease students' chances of graduating on schedule (Di Pietro, 2018) and can trigger post-traumatic stress symptoms such as fear, appetite loss, sleep issues, and trouble concentrating (Thadathil, 2019). As a result of the earthquakes, loss of life, physical ailments, infrastructure damages and economic losses may occur, as well as long-term mental health problems in individuals (Wang & Liu, 2012). Based on these findings, this study also examined whether the level of career optimism differed among university students who experienced the earthquake.

In addition, it can be said that the eighth goal, "Decent Work and Economic Growth", will be affected by the Sustainable Development Goals of the United Nations (2015) with the studies conducted for the structure of career optimism. Kim et al. (2019), who see the human-worthy job perception as a concept for the future, think that this concept represents the expectation of a positive result. Therefore, it can be said that the research to be carried out to determine the situation for career optimism and to develop it may also be effective in individuals' future decent job acquisition.

This research is also significant for involving university students. Based on Super's (1990) Life Span Life Space Theory, career development is viewed as a life-long process, starting from birth and concluding with death. Consequently, individuals' career paths begin to take shape before they enter the workforce. University years are particularly crucial for students as they establish their career aspirations and make related decisions. This stage, referred to as "emerging adulthood" by Arnett (2001), is characterized as a transitional period within the exploration phase of Super's (1990) theory (Eryılmaz & Mutlu, 2017).

Examining the career perceptions of university students is crucial during this transition phase. Research indicates that students often lack sufficient career guidance, and they shape their career decisions based on popular trends or expectations of financial gain (Kozak & Dalkıranoglu, 2013). This situation may prevent students from pursuing professions that align with their interests, values, abilities, and personalities.

At this stage, the idea of career optimism becomes relevant. Career optimism involves individuals holding positive expectations about their future career growth. Even before fully entering the workforce, the perceived control and self-efficacy in career decision-making of university students can greatly affect their career opti-

mism and aspirations. Consequently, evaluating the career optimism levels of these students and investigating the factors influencing them can yield valuable insights for career counseling and university support services. This approach enables a more intentional and effective career planning process, positively impacting students' professional development. In light of these explanations, this study aimed to examine the role of university students' perceived control and CDMSE in predicting career optimism. Within this framework, the research questions outlined below were explored.

The research questions:

- Do university students' perceived control and CDMSE significantly predict their career optimism?
- Is there a significant difference in the career optimism levels of university students based on their earthquake experience?

2. Method

The design of this study, employing quantitative analysis techniques, is based on the relational model. The relational model aims to determine whether changes occur between two or more variables, assessing if the variables change together and how this change occurs in an existing change (Karasar, 2011).

2.1. Participants

Participants were reached using the convenience sampling method. Participants who met the conditions of being a university student in Türkiye and not working in any job were included in the study. Within the scope of the study, 457 undergraduate students, 141 male, 315 female and 1 other, were reached.

The ages of the participants constituting the study sample vary between 18 and 45. ($\bar{x} = 20.88$, $ss = 2.16$) It is observed that the majority of the participants are female ($N = 315$, 68%). When examined according to grade levels, it was determined that 3rd grades were intense ($N = 123$, 26%). Considering the earthquake experience, it was determined that more people did not experience the February 6 earthquake than those who did ($N = 338$, 73%). While 119 students reported experiencing the earthquake, their specific locations (residing in the affected areas or studying in different cities) were not distinguished in this study.

2.2. Data Collection Tools

Sense of Control Scale, CDMSE-SF, Career Optimism

Scale for University Students, and a personal information questionnaire were utilized as data collection instruments in the research.

The Sense of Control Scale: In this study, the “Sense of Control Scale” developed by Lachman and Weaver (1998) and used by Duffy (2010) to measure the perceived control in university students and adapted to Turkish by Daşkın (2020) was used as a data collection tool. With this scale, the feelings/perceptions of individuals regarding the degree to which they control their lives are measured. The scale is a 7-point Likert-type, with a score between “1 = Strongly disagree, 7 = Strongly agree.” In terms of perceived control, which consists of two dimensions and 12 items, “personal mastery” and “perceived restrictions”, personal mastery shows the sense of effectiveness and competence in achieving the goals, while the perceived limitations show the level of belief in the existence of factors and obstacles that prevent an individual from reaching his/her goals beyond his/her control (Daşkın, 2020). While the original Cronbach Alpha coefficient of the Sense of Control Scale developed by Lachman and Weaver (1998) was .70 for the “personal mastery” sub-dimension and .86 for the “perceived limitations” sub-dimension, these coefficients were found to be .75 for the “perceived limitations” sub-dimension, .78 for the “personal mastery” sub-dimension and .82 for the whole scale in Daşkın’s (2020) study of adaptation to Turkish. In this study, the Cronbach Alpha value was found to be .72 for the “personal mastery” sub-dimension and .85 for the “perceived limitations” sub-dimension for the entire .82 scale. (CFI = .95, TLI = .94, SRMR = .04, RMSEA = .06, χ^2/df : 2.50) Sample scale items are “I can do just about anything I really set my mind to” and “There is really no way I can solve the problems I have”.

Career Decision-Making Self-Efficacy Scale-Short Form: The scale, first developed by Taylor and Betz (1983), consists of 50 items. Since the original scale was found to be long by the researchers, Betz et al. (1996) revised the scale and came up with a shorter scale of 25 items and five factors. Later, Gaudron (2011) revised the scale again and reduced it to 18 items and four factors. This scale was adapted to Turkish by Akin et al. (2014) under the name of “CDSES-SF”. The sub-dimensions of this 5-point Likert-type [“No confidence at all” (1) - “Complete confidence (5)"] 18-item scale are “goal setting”, “information gathering”, “goal pursuit management”, and “problem-solving”. The Cronbach Alpha coefficients of the sub-dimensions were found to be .69, .67, .69 and .73 in the study of Gaudron (2011), respectively, and this coefficient was found to be .83 for the whole scale; Akin et al. (2014), on the other hand, found

the internal consistency coefficients as .76, .68, .62 and .61, respectively, while they found it as .84 for the whole scale. In this study, the internal consistency coefficients of the sub-dimension were found to be .79, .75, .80, .80, respectively, while the internal consistency coefficient of .90 was reached for the whole scale. (CFI = .92, TLI = .90, SRMR = .05, RMSEA = .07, χ^2/df : 3.13) Sample scale items are “Choose a career that will fit your preferred lifestyle” and “Talk with a person already employed in the field you are interested in”

Career Optimism Scale for University Students: The Career Optimism Scale for University Students was developed by Kepir-Savoly and Tuzgöl-Dost (2021) to measure career optimism in university students and consists of one dimension and 23 items. It was used as a data collection tool in this study. Measurements are made with 5-point Likert-type ratings ranging from “Not suitable for me at all” (1) to “Completely suitable for me” (5). To determine the reliability of the Career Optimism Scale in University Students, the Cronbach’s Alpha coefficient, calculated by Kepir-Savoly and Tuzgoöl-Friend (2021), was found to be .94. This study also achieved an internal consistency coefficient of .93. (CFI = .88, TLI = 0.86, SRMR = 0.05, RMSEA = 0.08, χ^2/df : 3.56) In the CFA analysis performed for the career optimism scale, it can be said that the career optimism scale can be considered as a valid measurement tool within the scope of this research, considering that TLI and CFI fit indices are below the acceptable limit, but other fit indicators have acceptable and excellent fit values. Sample scale items are “I am hopeful that I will find a job in the future” and “I believe that I will make sensible choices in my career”.

Personal Information Form: The researchers developed this form to collect sociodemographic information about the participants. It includes information such as gender, age, class, department, university, earthquake experience, and financial status.

2.3. Data Collection

Within the scope of data collection, the necessary permissions were obtained from the Trakya University Social and Human Sciences Ethics Committee on October 18, 2023, with decision number 09/22. The data were collected face-to-face and online via Google Forms between November 2023 and February 2024. In the study, call texts were created to reach volunteer participants. These texts were announced on social media platforms. Additionally, a QR code image containing the Google Form link was created, and these QR code images were printed on the posters. The necessary permissions were obtained from the university’s rectorate, and the posters were displayed in various locations throughout the

university. With the informed consent form, the participants were told that this study was supported by TÜBİTAK, by whom the study was conducted, what the purpose of the study was, the conditions of participation in the study, the answers given would be used only for scientific research purposes, no personal information was requested, and it took approximately 8-10 minutes to participate in the study.

2.4. Data Analysis

The data obtained within the research scope were analyzed using an independent sample t-test, Pearson correlation, and regression analysis. SPSS 22.0 and Jamovi programs were used to perform these analyses. Validity and reliability analyses were performed for each scale before analyzing the data obtained within the scope of the research. Confirmatory factor analysis was performed using the Jamovi program to test construct validity. In confirmatory factor analysis, the Comparative Fit Index (CFI), Tucker-Lewis Index (TLI), Standardized Root Mean Square Residual (SRMR), Root Mean Square Error of Approximation (RMSEA), and Chi-Square divided by degrees of freedom (χ^2/df) are used to assess the model's fit. CFI and TLI values of .90 and above, SRMR and RMSEA values of .08 and below, and χ^2/df values of 3.0 and below indicate a good fit for the model. To test reliability, Cronbach's alpha internal consistency coefficients were examined. Assumptions such as the sufficient number of samples, linearity and covariance, multiple connectivity, independence of prediction errors, loss and extremes, and normality required for multiple linear regression analysis were examined and regression analysis was performed after the assumptions were met.

3. Results

Before the regression analysis, the kurtosis and skewness values of the dependent and independent variables were examined to determine their normality. Kalaycı (2016) states that mode, median, and arithmetic mean values are equal in a normal distribution. In addition, according to Mertler and Vannatta (2021), skewness and kurtosis values between -1 and +1 indicate that the distribution does not deviate significantly from normality. ►Table 1 presents the variables' arithmetic mean, mode, median, kurtosis, and skewness values.

When ►Table 1 is examined, it is determined that the mode, median, and arithmetic mean values obtained from this study show values close to each other, and the kurtosis and skewness values are in the desired range. This indicates that the data follows a normal distribution. The results of the correlation analysis showing the

direction and size of the relationship between dependent and independent variables are given in ►Table 2.

Table 1. Normality values for dependent and independent variables (n=457)

	\bar{X}	Median	Mod	Skewness	Kurtosis
Career Optimism	91.48	92	92	-.38	-.08
CDMSE	67.98	69	72	-.26	-.85
Perceived Control	58.78	60	63	-.55	.16

Table 2. Correlation coefficients

Variables	N	ss	1	2	3
1.Career Optimism	457	12.83	1		
2.CDMSE	457	10.78	.72*	1	
3. Perceived Control	457	10.63	.48*	.43*	1

* $p < .001$

As seen in ►Table 2, there are statistically significant relationships between the research variables (career optimism-perceived control: $r = .48$; career optimism-CDMSE: $r = .72$). ►Table 3 shows the results of multiple linear regression analysis regarding the prediction of career optimism.

Table 3. Multiple linear regression analysis results for predicting career optimism

Predictive	B	SH _B	β	t	p
Constant	25.73	2.88	-	8.95	<.001
CDMSE	.74	.04	.62	17.85	<.001
Perceived Control	.26	.04	.22	6.25	<.001

$R^2 = .55$, $F(2.45) = 276.89$, $p < .001$

As shown in ►Table 3, the multiple linear regression analysis indicates that the variables of perceived control and CDMSE variables account for 55% of the total variance in career optimism ($F = 276.89$, $p < .001$). Both perceived control and CDMSE variables positively predict career optimism. Lastly, an independent sample t-test was performed to examine whether career optimism differed significantly according to whether they experienced the earthquake. ►Table 4 shows the sample t-test results.

Table 4. Independent sample t-test

Group	N	X	ss	p	t	sd
Experienced Earthquake	119	90.57	12.67	.36	-.90	455
Not Experienced Earthquake	338	91.81	12.89			

The study included 119 students who experienced the February 6 earthquake in Kahramanmaraş and 338 students who did not. The independent sample t-test

showed that since the p -value was greater than .001 ($p = .36$), university students' career optimism level did not differ significantly according to whether they experienced the earthquake or not.

4. Conclusion, Discussion, and Limitations

The results obtained from the correlation analysis revealed that there was a statistically significant, moderately positive correlation between perceived control and career optimism ($r = .48$, $p < .001$). Similarly, CDMSE showed a strong positive correlation with career optimism ($r = .72$, $p < .001$). The regression analysis conducted after the correlation analysis yielded an R^2 value of .55, indicating that perceived control and CDMSE explained 55% of the variance in career optimism. The overall significance of the model was confirmed by the F test ($F = 276.89$, $p < .001$), thus answering the first research question of this study, which examined whether perceived control and CDMSE together predicted career optimism. However, the independent samples t -test revealed that experiencing an earthquake did not significantly differ in the career optimism levels of university students ($p = .36$), and the second research question of this study was answered negatively. That is, the career optimism levels of university students did not statistically significantly differ depending on whether they experienced an earthquake or not.

Recent studies indicate a favorable link between perceived control and career optimism. A meta-analysis by Duru and Söner (2024) identified a significant correlation between locus of control and career optimism ($r = .36$), aligning with the moderate positive correlation observed in their research. Duffy (2010) also pointed out that perceived control plays a vital role in career development, finding a positive relationship between elevated levels of perceived control and career optimism. Similarly, Kütükçü and Şentürk (2018) discovered that both internal and external locus of control were positively linked to career optimism. Additionally, Bubic (2017) discovered that perceived academic control indirectly influenced job optimism through CDMSE. The current study bolsters these conclusions, revealing that university students with a heightened sense of perceived control in their lives experience greater career optimism.

Previous studies have reported similar results regarding the relationship between CDMSE and career optimism. Bubic (2017) found that CDMSE strongly predicted personal job optimism among college students. The meta-analysis by Duru and Söner (2024), mentioned earlier, demonstrated a notable correlation between CDMSE

and career optimism ($r = .46$), consistent with the strong positive correlation identified in this study. Garcia et al. (2015) discovered that CDMSE contributes to career optimism, and Chui et al. (2022) reported a significant positive correlation between these two variables. These findings support the notion that individuals with higher CDMSE are more optimistic about their future careers.

Additionally, the study confirmed a moderate positive relationship between perceived control and CDMSE, which aligns with previous literature. Luzzo et al. (1996) reported a significant relationship between perceived control and CDMSE. Similarly, Duffy and Dik (2009) suggested that a strong perception of personal control could positively influence the career decision-making process. The findings of this study also show parallels with the research conducted by Kim and Lee (2018), who identified a positive correlation ($r = .51$) between internal locus of control and CDMSE. However, one study did not find a significant effect of internal locus of control on self-efficacy among university students ($\beta = 0.0937$; $p > .05$) (Qudsiyah, 2023). These findings generally support a positive relationship between perceived control and CDMSE, with some variations observed across different populations and contexts.

However, one unexpected finding was that experiencing an earthquake did not significantly affect levels of career optimism. Numerous studies have explored how earthquakes impact university students' mental well-being and career outlook. Kaya and Bayram (2024) discovered a link between earthquake exposure and increased state anxiety in university students. Similarly, Nolen-Hoeksema and Morrow (1991) found that factors such as pre-existing depression, stress symptoms, and ruminative tendencies were associated with prolonged distress after an earthquake. However, Burger and Palmer (1992) noted a temporary decline in unrealistic optimism about natural disasters immediately following an earthquake, which was restored after three months. Kuşlu and Çelikkanat (2024) revealed that while post-earthquake trauma levels influenced academic motivation, they did not impact career decisions among university students. These results indicate that earthquakes can considerably affect students' mental health and perceptions, but their long-term influence on career optimism appears limited. This aligns with findings showing no significant difference in career optimism between those who experienced an earthquake and those who did not.

Following a discussion of the study's findings, it is crucial to acknowledge its limitations. One significant limitation is that roughly half of the sample consisted of students from the Guidance and Psychological Coun-

seling department. Additionally, the research did not distinguish the specific locations of the 119 students who experienced the earthquake, whether they resided in the directly impacted areas or were studying in other cities during the event. This situation poses a limitation in evaluating the potential effects of the earthquake on career optimism.

5. Recommendations and Implications

This study offers significant theoretical and practical contributions to the field of career optimism. Theoretically, it explores the relationships between perceived control and CDMSE, revealing their strong influence on career optimism. Practically, it underscores the necessity of enhancing perceived control and CDMSE when designing intervention programs for career development, especially for young adults, such as university students. Career counseling programs should integrate training to improve students' perceived control and CDMSE, as these elements significantly affect career optimism. University career centers can organize workshops aimed at boosting students' perceived control over their career paths and decision-making skills.

Human resources professionals and career counselors can improve career development strategies by considering these factors to boost employee career optimism. For policymakers, this research highlights ways to inform education and employment policies that bolster young individuals' perceived control and CDMSE. For academics, this study enriches the existing literature by introducing new research questions and methods for a deeper exploration of career optimism and its related factors.

Students' career perceptions may vary across different academic disciplines. Therefore, it is important to investigate how career optimism differs among these disciplines. Longitudinal studies should be conducted to explore the long-term effects of perceived control and CDMSE on career optimism. Future studies can analyze the impact of earthquakes on students in various geographical locations separately. To enhance the generalizability of the findings, the study can be replicated with a more balanced participant profile from diverse departments.

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Competing Interests

The author(s) state(s) no conflict of interest.

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Data Availability

Readers may request access to the data by contacting the corresponding author.

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