



OPEN ACCESS

EDITED BY

Antonio P. Gutierrez de Blume,
Georgia Southern University, United States

REVIEWED BY

Elena Tikhonova,
Peoples' Friendship University of Russia, Russia
Deb Osborn,
Florida State University, United States

*CORRESPONDENCE

Ainash Kudysheva
✉ aikudysheva@rambler.ru

RECEIVED 14 November 2022

ACCEPTED 20 July 2023

PUBLISHED 08 August 2023

CITATION

Azhenov A, Kudysheva A, Fominykh N and
Tulekova G (2023) Career decision-making
readiness among students' in the system of
higher education: career course intervention.
Front. Educ. 8:1097993.
doi: 10.3389/feduc.2023.1097993

COPYRIGHT

© 2023 Azhenov, Kudysheva, Fominykh and
Tulekova. This is an open-access article
distributed under the terms of the [Creative
Commons Attribution License \(CC BY\)](#). The
use, distribution or reproduction in other
forums is permitted, provided the original
author(s) and the copyright owner(s) are
credited and that the original publication in this
journal is cited, in accordance with accepted
academic practice. No use, distribution or
reproduction is permitted which does not
comply with these terms.

Career decision-making readiness among students' in the system of higher education: career course intervention

Askar Azhenov¹, Ainash Kudysheva^{*†}, Nataliia Fominykh² and
Gulmira Tulekova¹

¹Department of Personal Development and Education, Toraighyrov University, Pavlodar, Kazakhstan,

²Foreign Languages Department No 1, Plekhanov Russian University of Economics, Moscow, Russia

Career decision-making is a complicated process in which students must understand themselves. In this paper, the influence of the implemented "Career development" course on the Toraighyrov University undergraduate students' readiness for career decision-making was analyzed. *The Career Decision-making Difficulties Questionnaire* (CDMDQ) and it was used to test the hypothesis that by implementing "Career Development" course the level of students' career decision-making readiness would increase. The participants were 104 students at Toraighyrov University, divided equally into the control and experimental groups (52 students each). The experimental group, unlike the control group, took the "Career Development" course for 15 weeks. Students were randomly chosen from humanities (psychology, education, journalism, and social work) and Science, Technology, Engineering, and Mathematics (electrical engineering, computer science, and metallurgical engineering) fields. The average age of participants was 21 years. The results show that there is significant difference in pre-course and post-course testing in each of the career decision-making difficulties cluster: (1) Lack of Readiness; (2) Lack of Information and (3) Inconsistent information in experimental in comparison to control group.

KEYWORDS

career choice, career decision-making, career exploration and development course, higher education, psychological and educational support, university students' career development

1. Introduction

1.1. The problems of career readiness

Selecting a career can be one of life's most challenging decisions. People often feel overwhelmed by the amount of information they need to absorb when considering the numerous career paths they could potentially follow (Gati et al., 2019). As for nowadays, individuals need to be able to critically analyze various information about the job market and their own characteristics in relation to the job market almost on a continuous basis. The information that individuals need to process is often subject to quick changes and is highly ambiguous, being partial, fragmented, and contradictory (Xu and Tracey, 2014). A considerable proportion of ineffective career decisions among university alumni are accompanied by difficulties in justifying them and a lack of confidence in their abilities and place in the

professional environment. A genuinely conscious choice of profession and place of future employment directly depends on the individual's current preferences by forming a sense of professional identity. Students' clear understanding of their inclinations, skills, and abilities – which will continue to develop throughout their lives – is essential (Tang, 2019).

Seeking a job, employment and planning future career paths are common problems that university alumni face after getting their qualifications. Barriers to effective employment of university graduates include:

- The lack of mechanisms to ensure the relationship between the labour market and the educational programs;
- Human resource policies of many organizations focus mainly on achieving current results, and not on future development;
- The majority of graduates do not have the necessary skills for self-determination in the labour market, career development, or negotiation with employers in interviews;
- University graduates lack self-esteem regarding their vocational qualification level (Jones et al., 2017; Mohammed et al., 2021).

In Kazakhstan there are additional factors that are beyond the control of university alumni and can be distinguished as additional barriers. For example, In Kazakhstan Universities educational programs (specialities) should be included in the National Classifier of Republic of Kazakhstan (NCP RK), National Qualification Frameworks (NQF), and Industry Qualification Frameworks (IQF) but usually they are not in in the country's labour market. The professional and qualification requirements of most employers in Kazakhstan has gone far beyond the scope of educational programs and standards. Every year new integrated professions appear, but there are still no educational programs directed towards addressing these new requirements (National Classifier of the Republic Kazakhstan, 2019).

In addition to professional and qualification requirements ('hard skills'), employers have begun to put forward demands for employees' personal qualities ('soft skills'). Universities typically place less emphasis on the development of students' soft skills; most are focused on hard skill formation, which they regard as the main outcome of educational programs. Ideally, students should have the opportunity to develop diverse qualities and skills while studying at university (Jones et al., 2017). Recruiters are seeking employees with soft skills and it is usually more important than the grade point average (GPA). Soft skills consist of self-awareness, respect for others, leadership ability, positive attitude, team-playing, self-confidence, critical thinking, and good communication. Professionals must not only master the technical skills of their job but also various soft skills (Dixon et al., 2010). Hard skills are generally learned through formal training and education, while soft skills are typically developed through personal experience and reflection (Dixon et al., 2010). For the success of a young specialist in the labor market, both hard and soft skills are equally important. However, students with strong soft skills have a competitive advantage over other candidates when interviewing and creating resumes and cover letters, and getting their first job (Malin et al., 2017).

University alumni who have specific professional knowledge and skills but no work experience face socio-psychological challenges in finding a workplace to suit their preferences and ambitions. Most of

them need career counseling services and psychological support. For successful employment, it is not enough to have only a high-quality education and theoretical knowledge. Students need practical skills in communicating with employers, knowledge of the psychological aspects of interviewing, writing resumes and cover letters, knowledge of the current labour market and job search technologies.

1.2. Career decision-making models and theories

The process of career planning, career readiness, and vocational development has been considered through career development theories such as Super's Theory, Bandura's Social Cognitive Theory, Holland's Theory of Vocational Personality, Cognitive Information Processing Theory, and the Theory of Career Construction. Understanding these established (and newer) career development theories is vital for effective career counseling and will help support students in their career growth (Lent et al., 1994; Brown and Lent, 2004; Tang, 2019).

Cognitive Information Processing theory researchers point to a strong connection between worry and negative career thinking and confusion when making decisions. Worry predicts the degree of readiness for making career decisions and inhibits the implementation of cognitive skills (Hayden and Osborn, 2020). They emphasize the importance of specific integrated career development programs that enhance cognitive information skills that affect anxiety elimination and increase the quality of decision making, even while partially ignoring other important influencing factors such as social environment, psychological support, expected socioeconomic status, etc. (Osborn and Belle, 2019).

Career decision-making difficulties remains a topical issue of discussion in career counseling and career development, underscoring the consistent theoretical proposition that career decision-making problem is an important but challenging developmental task across life-span (Wright et al., 2013; Mohammed et al., 2021). Our research highlights the remaining high level of career decision-making difficulties among senior year students in Kazakhstan and how implementing "Career Developing" courses may lower the tension of difficulties students face in making career decisions.

Most scientists define career readiness as the ability to successfully engage in the process of career decision-making and making reasonable career choices (Hirschi, 2012). Super proved that young people differ from each other with regard to their levels of readiness for educational and career decisions. Super suggested that such readiness should be based on the development of essential characteristics such as attitudes towards career development, behaviours, and cognitions necessary for the formation of a steady vocational identity. Based on Super's theoretical approach, followers paid attention to the structural components of career readiness, namely, attitudes towards planning, research, competencies in career decision-making, and the ability to gather information about professions and career opportunities (Tang, 2019).

Career readiness is a plan for the development of a career and personal beliefs, attitudes, motivation, feelings, abilities, behaviours, and actions that ensure successful career building. A successful career can be defined as one that meets the expectations of the individual.

In western education and psychology, career development and career readiness are considered through the prism of career decision-making theories. These theories are grounded on approaches to modeling the process of career decision-making.

Decision-making is an action in which individuals compare alternatives and attempt to select the most desired outcome (Dixon et al., 2010). As stated by Kulcsár et al. (2020) career decision may involve choosing an occupation and the associated educational training, then a job and then whether to remain in that job or switch to another one, what formal and informal advanced training to take, and so on. When facing such decisions, many individuals experience difficulties that prevent decision-making or lead them to choose a non-optimal alternative. In career psychology, career decision-making difficulties are defined as “the difficulties encountered by individuals while making career-related decisions. They refer to all problems and challenges that need to be addressed prior to, during, or after the decision-making process” (Saka et al., 2008).

Analyses of the existing career decisions-making models gives us understanding of individual patterns of behavior in career decision-making, gathering information about careers, indecision in the process of career decision-making, existing difficulties, career maturity, and adaptations to professional life. Current models consider career decision-making competencies as a dynamic process that has levels and phases. According to Esbroeck et al. (2005), career decision-making models focus on specific decision points along the developmental continuum, providing a well-defined framework for decision-making that can fit any relevant situation.

The cognitive-informational process developed by Sampson et al. (2004, 2014) highlights five stages in career decision-making: (a) communication (identifying a career problem); (b) analysis (highlighting the relationships between problems); (c) synthesis (creation of alternatives); (d) assessment (assessment of priorities); and (e) execution (development of strategies to make a choice) (Hirschi and Läge, 2007). Six stages in the process of deciding on a career were identified by Germeijs and Verschuere (2006, 2007): (a) focus on choice; (b) self-examination; (c) extensive study of the world; (d) in-depth study of the world; (e) selection of an alternative; and (f) following the chosen career alternative. Esbroeck et al. (2005) proposed the same number of stages in their dynamic model of career choice: (1) sensitization (awareness of the necessary career activities), (2) self-study, (3) environmental research, (4) the study of the relationship between themselves and the environment, (5) specification (deepening knowledge about career opportunities and detailed elections), and (6) choice of alternative.

Another current model of career decision-making process – ‘Examination, in-depth research and selection’ – proposed by Gati et al. (2019), is based on three phases: (1) consideration of potential alternatives and narrowing down alternatives based on individual preferences, (2) in-depth study of effective alternatives, and (3) selection of the most suitable alternatives.

Hirschi and Läge (2007) identified the key parameters in successful career development based on longitudinal empirical research. They stated that critical factors influencing career readiness are career decisiveness, career planning, career research, and vocational identity (Figure 1). Each of these factors is key and has its characteristics of expression at various career decision-making stages, directly affecting the level of career readiness. Therefore, low levels for any factor can harm career decision-making and the career life of

students and graduates. For example, lack of planning skills can lead to the loss of direction in the vocational sphere, and a lack of interest in the future profession and career makes a choice unconscious. Lack of reliable and confident information about the chosen profession may lead to disappointment due to high expectations. These factors ultimately lead to indecisiveness and inability to make career decisions. Thus, graduate and undergraduate students may miss out on career opportunities and the chance to gain invaluable experience (Hirschi and Läge, 2007).

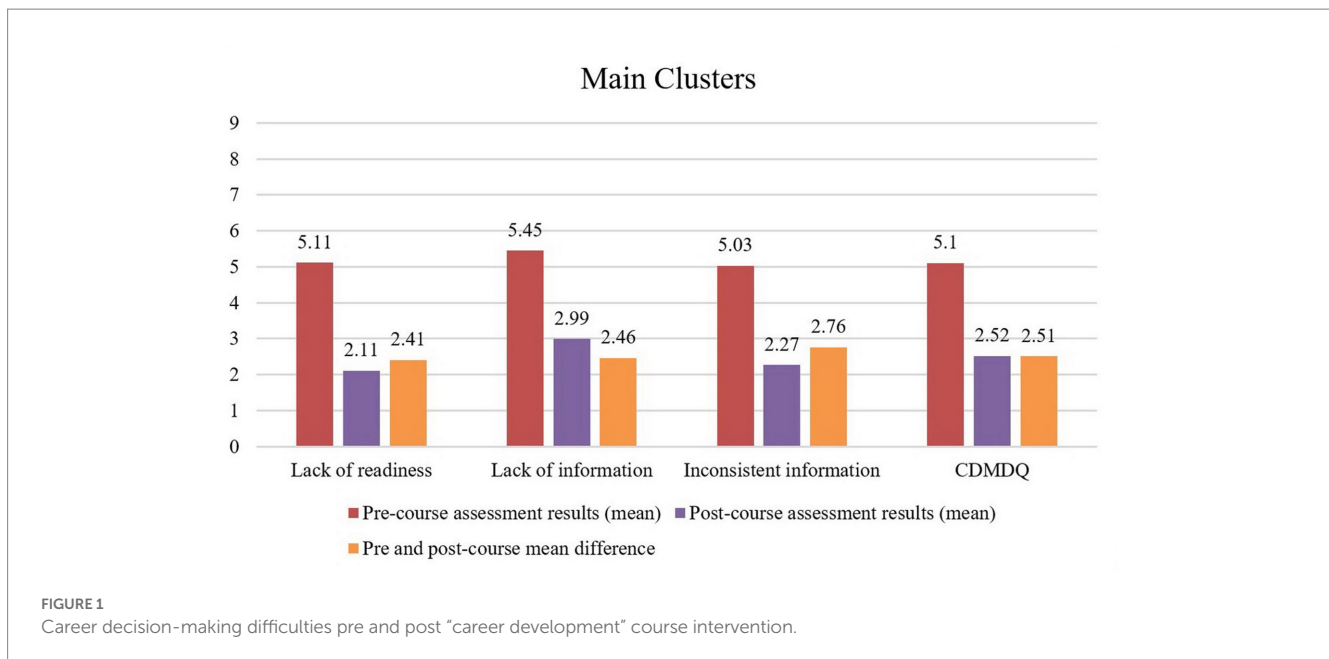
Career decision-making is much broader than just choosing a job, and it is a process that includes understanding one’s desires and needs, deep knowledge of your personality (strengths and weaknesses), and ideas about one’s current and potential development. Gati et al. (2012), define career decision-making as the process people go through when searching for career alternatives, comparing them, and making a choice. Career decision-making competence is a complex dynamic process aimed at planning a career. It is a form of self-expression that includes beliefs, attitudes, motives, and feelings, ensuring effective planning of a future career and its compliance with personal expectations (Mohammed et al., 2021).

Four key components of career decision-making competence can be distinguished to characterize this process:

1. Adequate confidence in the career decision-making process;
2. Ability to be objective in analyzing existing information;
3. Ability to take into account one’s personal experience and experience of others for successful career decision-making (Gu et al., 2020).

Success in career decision-making may be affected by internal and external, objective, and subjective factors. Moreover, the low level of competence in making career decisions, especially among university and college students, depends on factors such as unwillingness to make career decisions, lack of necessary information, and inconsistency of information available (Gati et al., 2012). Furthermore, most often, a low level of career decision-making competence’s development, especially among university and college students, depends on such factors as lack of willingness to make career decisions, lack of sufficient information, and the inconsistency of available information. Unreadiness in career decision-making may depend on a low level of motivation, the indecision of an individual, and self-doubt. Lack of sufficient information may include lack of knowledge about career decision-making processes (low level of self-knowledge, lack of information about the future profession, an inability to analyze existing information). Lack of consistency of available information includes unreliable sources from which student gains information about the world of professions, internal conflicts, and external conflicts (Kleiman et al., 2004).

The career decision-making models analyzed above include a different number of phases, in their content and names. Our research was based on models suggested by Gati et al. (2012) and Hirschi (2012). Based on Gati et al. (2012), we can point out specific difficulties represented in ten main categories. Difficulties in career decision-making can arise both before the involvement process (lack of readiness) and during the decision-making process (lack of reliable information or absence). Hirschi (2012), consider the six phases can be nominally subdivided into three stages: before actual decision-making (phase 1); during actual decision-making (which includes



phases 2–5); and, after actual decision-making (phase 6). Career decision-making does not have to involve going through all of the phases, and the process may not always resolve into an effective solution. In our study the model proposed by Hirschi (2012) was taken as a basis for determining which of the development phases students are in. The structural model of career decision-making proposed by Gati et al. (2012) was also chosen as it gives a detailed understanding of the spheres involved in this process such as readiness (motivation, self-confidence, decisiveness/indecisiveness); awareness (knowledge about the decision-making process itself, about self, about the future occupation); and, conflicts (lack of information, internal and external conflicts). Through this study, we plan to gather information that will help us understand the state of students' career development at the university.

1.3. Career courses outcomes

Western Universities give students diversified support through academic and career counselling, "Career Development" course, and etc. Universities are proactively staffed with well-trained academic advisors who help students navigate their ways through this major exploration and career decision quagmire (Jepsen and Dickson, 2003; Atuahene, 2021).

As for Kazakhstani students, readiness for career decision-making and overcoming career decision-making difficulties and barriers seem to be one of the critical tasks. The solution to this problem offers the proposal and introduction into the latest technologies' educational process to develop career readiness, based on modern trends in the Kazakhstani vocational community and the richest and miscellaneous foreign experience.

Findings given in the research by Fouad et al. (2016), state that career planning and career development courses had a statistically significant effect on students' occupational engagement and aspects of student career construction, specifically occupational exploration, *career decision-making*, and skilling/instrumentation.

The research made by Fouad et al. (2016) was focused on college students mainly in their junior and sophomore year. Our research is mainly focused on students of senior year. Another limitation in Fouad et al. (2016) research is that the population was drawn from college. Because colleges vary significantly in their population and environment, the results may not be applicable for university level.

Career development research is very diverse and is represented by a significant amount of academic research. Most of them cover case studies, the study of the consequences and causes of career choice, factors influencing the choice and implementation of a career. It also explores the impact and contribution of Career Development courses to graduate success. However, there is a significant gap in academic research regarding the specific content, tools and level of effectiveness of such Career Development courses and methods for improving them. The proposed work is focused on closing this gap.

The purpose of career courses is to focus on specific tasks and activities that promote the development of behavioral and adaptive components of decision-making (Krieshok et al., 2009; Savickas, 2013; Taylor et al., 2018).

Student career counseling is one of the most critical aspects in the work of the university. Along with the educational process, properly organized career development guarantees students' success as professionals. Career counseling ensures students will have a smooth transition from university to vocational life. In 2019, graduates' average employment rate at Toraighyrov University was 80%, a reasonably high level. But a problem arises when we consider employment quality: in some specific educational programs, the alumni employment rate in the sphere of their majors is less than 50% (Psychology: 43%, Electrical engineering 38%, Social work: 45%).

1.4. The purpose of this study

To support students in elimination of career decision-making difficulties and barriers one semester long elective course (3 credit) was implemented for senior years students. This research is directed

to analyse the influence of the “Career development” course on the level of students career decision-making difficulties.

Research goal is to understand the influence of implemented “Career Development” course on students career exploration process, their readiness for career decision-making. The question the study focuses on is whether it is possible, through a specialized course on career development, to increase students’ willingness to make career decisions at a meaningful level? At the same time, the training course includes the most modern and diverse decision-making methods and is focused on the practical goals of obtaining a future job and moving up the career ladder for participants. This issue is relevant since the majority of students, as evidenced by the analyzed studies described, make career decisions mainly under the pressure of external motivational factors or following circumstances (Kulcsár et al., 2020; Mohammed et al., 2021). The researchers suggest in this study that this is due to the lack of the necessary skills and instruments for making career decisions, and not due to a willingness to follow external motivation.

A special contribution of the study is the proposal of a new context of Kazakhstan, where there are practically no specialized career readiness and career development courses yet, and therefore the influence of such a course is especially noticeable and structurally strongly distinguished in the studied indicators. This can be a useful theoretical and practical contribution for researchers from other countries.

2. Methods

2.1. Research methodology

In this part the sample selection, methods and procedure to complete the study will be overviewed: population, and sample selection; description of the “Career Development” course; the instrument, the Career Decision-making Difficulties Questionnaire (CDDQ); the pre-and post-course survey, and its results.

2.2. Participants selection process

The research sample was selected from a population of students enrolled at Toraighyrov University (third and fourth courses). An invitation to take part in the research was sent to all third and fourth-course bachelor students enrolled at Toraighyrov University, in Spring 2020, informing them of the availability of the course. From the group of volunteers, fifty-two students were randomly selected for enrollment in the “Career Development” course. An equal number (fifty-two students) of volunteers was randomly selected for the control group. The total sample consisted of one hundred and four students.

The sample group was undergraduate students (104) in their third and fourth years of study – 59 (57%) males, and 45 females (43%). Purposeful sampling was used to ensure that participants who could best contribute a rich and relevant amount of content to the study were accessed (Patton, 2002). The following demographic criteria were used in selecting respondents: full-time position, students should be enrolled in at least 4 courses. The average age of participants was 21 years (SD = 1.41) Thirty-six students (34.2%) were identified as

third-year students; sixty-nine students (65.8%) as fourth-year students. The greatest proportion of students (46.6%) identified their race as Kazakh; 23.8% as Russian; 14.2% as Tatar; 5.7% as Ukrainian; 2.8% as German, and 4.8% as multicultural or other. Student demographics are presented in Table 1.

Power versus sample size analysis and size effect testing for this sample showed a size effect value according to Kohen $d=0.29$ and an actual power of sample of 0.95, indicating that it is sufficient for a high significance statistical study.

2.3. Procedure: data collection and study design

The names and emails of third and fourth-course students were obtained from the Students Affairs office at Toraighyrov University. An email was sent informing them about the experiment and the course. Additionally, a course description was enclosed in each letter.

From the pool of volunteers, the selection was conducted by placing the student’s identification number in a box. From two hundred and forty volunteers fifty-five were randomly selected to take part in the online course, three of them dropped out and could not complete the course. For the control group, an equal number of students (fifty-two) was randomly selected from the rest number of the volunteers (Table 2).

The research consisted of two parts. The Career Decision-Making Difficulty Questionnaire (CDMQ) (34-item) was used to examine the

TABLE 1 Student demographics.

	Experimental group	Control group
Number	52	52
Gender		
Male	29	30
Female	23	22
Age		
18–22	30	29
23–27	22	23
Did not identify		
Nationality		
Kazakh	28	20
Russian	16	8
Tatar	7	8
Ukrainian	1	5
German	0	5
Other	0	6
Did not identify		
Previous education level		
High-school	82	99
College	87	37
Course		
3rd year	62	42
4th year	108	93

TABLE 2 The experimental design: control and experimental groups.

Group	N	Pretest	"Career Development" course	Posttest
Experimental	52	52	52	52
Control	52	52		52

level of students' confidence in career decision-making. The pre-course survey took place both in control and experimental groups from March to June 2020 at Toraihyrov University.

Completion of the surveys took approximately 30 min. The surveys were in the English language. For a better understanding, English-language-speaking participants were chosen. The email that was sent to participants explained the aim of the survey, confidentiality information, and the right to withdraw from the survey at any time. The hyperlink for the CDMQ was sent to all participants, and they were asked to sign the consent form and answer the demographic survey attached to the email. After participants completed the survey, raw data was downloaded for further analysis.

The "Career Development" course was online, and the length of the course was 15 weeks (once a week). Students from the experimental group only were enrolled in the course. The Course took place during the summer term of June–September 2020 in an online form.

The "Career Development" course included theoretical, practical and motivational parts. The theoretical part included tools, schemes and explanatory models of optimal behavior and career decision-making offered by Super's Theory, Bandura's Social Cognitive Theory, Holland's Theory of Vocational Personality, and the Theory of Career Construction. As part of the theoretical training, participants received detailed comparative statistical information on the labor market of their country and specialty, links to forums, special online resources dedicated to the communication of hired workers, information from job search resources in their country and on the international market, the latest analytical articles from open sources dedicated to the labor market, career features, salaries and features of bonuses received, opportunities for self-realization within the chosen specialty.

The practical part included a number of practical tasks related to practical career building. These tasks were given out at each of the 15 sessions, the results of their implementation were checked and discussed anonymously (without specifying whose answers are being discussed) during online communication. Tasks were distributed according to the stages of career formation: search for a suitable vacancy and determination of the most optimal one and corresponding to the needs, life goals and perceived abilities; preparation of a resume, awareness of one's strengths, determination of personal qualities, hard and soft skills that are necessary for development at the intended place of work; preparation for the interview and options for responding to comments, questions or a possible refusal; behavior in a team and conflict resolution in a team; search for areas of activity or challenges, the solution of which contributes to career growth; interaction with managers and adaptation to different types of leadership, followed by the leader, etc. These tasks included case studies of real stories and typical communication, psychological and behavioral problems that are encountered in the course of working in business in the process of career growth.

The motivational part included personal stories and personal communication with representatives of business, academic

institutions, teachers of educational institutions who have built a successful career in their field. Their stories necessarily had to include three components: (1) building personal motivation and describing the context that contributed to building a career; (2) a description of the difficulties and how they dealt with them in practice; (3) information about the context of professional and personal relationships and communications in the context of career building.

The proposed content and structure of the course allowed students to see the connection between theoretical models and real-life examples and at the same time develop their own basic skills needed at every step of building a career. This approach is designed to develop motivation, strengthen the determination to build a career and offered a sufficient number of skills, knowledge and sources of information for further self-development.

The second part of the research was the post-course survey (CDMQ). The post-course survey took place both in control and experimental groups in September–October, 2020 at Toraihyrov University.

2.4. Measures (instruments)

To be ready to build a career in the chosen area, students must be prepared to overcome difficulties associated with career decision-making and understand the importance of these decisions as they directly affect all areas of their lives. The questionnaire is aimed at identifying difficulties encountered by students in the process of career decision-making, especially at the preparatory stage (readiness) as career decision-making difficulties may arise at any stage of the career decision-making process (Rochat, 2019).

Willner et al. (2015) developed the taxonomy of career decision-making difficulties and the Career Decision-making Difficulties Questionnaire (CDDQ). The taxonomy assesses deliberating individuals' career decision-making difficulties, which consists of three major difficulty clusters, divided into 10 specific difficulty categories:

- a. lack of readiness associated with low or lack of motivation, general indecisiveness, and dysfunctional beliefs ((1) lack of motivation Rm, (2) general indecisiveness (Ri), and (3) dysfunctional beliefs (Rd));
- b. lack of information about career opportunities and one's abilities ((4) the career decision-making process (Lp), (5) the self (Ls), (6) occupations (Lo), and (7) ways of obtaining additional information (La));
- c. inconsistent information and internal and external conflicts [(8) unreliable information (Iu), (9) internal conflicts (Ii), and (10) external conflicts (Ie)] (Tien, 2005).

CDDQ criteria are divided according to the difficulty level into three groups: salient difficulty, moderate difficulty, and (no difficulty) negligible (Amir et al., 2008). Items are evaluated on a 9-point Likert-type scale in which 1-point indicates statement does not apply to me to 9 stands for fully applies to me. Higher scores mean more difficulty on the correlated career decision-making difficulty. Results correlate with three levels of difficulty in career decision-making: a salient (high) level of career decision-making difficulty was correlated with points from 9 to 7; the moderate (average) level of career

decision-making difficulty was correlated with points from 6 to 4; a negligible (low) level of career decision-making difficulty was correlated with points from 3 to 1 (Willner et al., 2015).

The initially identified 44 difficulties were reduced to 32 difficulties and represent ten main sub-scales (criteria), which in turn are included in the three main clusters of difficulties (scales). Students were given a list of statements regarding the career decision-making process. They were asked to indicate the degree to which each statement fits them on a scale from 1 to 9. Data analysis was carried out by calculating the average response score for each criterion (10 sub-scales) and each cluster (3 scales).

CDDQ studies for 9 variants of the questionnaire for different languages have demonstrated Cronbach alpha internal consistency as high as 0.94, and a median internal reliability as high as 0.79 (Vahedi et al., 2012). Competitive validity studies compared with closely related psychometric instruments, the Career Decision-Making Self-Efficacy Scale (CDMSE), demonstrated a statistically significant correlation, supporting the validity of the instrument. Confirmatory Factor Analysis for different variants of the CDDQ (32 and 40 questions), conducted at different times by various researchers, confirmed the factor model for 10 scales of the questionnaire and approved its high validity (Vahedi et al., 2012; Levin et al., 2023).

3. Results and analyses

To test the possibility of using parametric methods for testing statistical hypotheses, the Shapiro–Wilk test was carried out to test the approximation of the distribution in the sample to normal. The test was conducted based on the results of the pre-course for the entire sample as a whole, and for the control and experimental groups separately. For the entire sample, $W=1.482$; for the control group $W=2.011$, for the experimental group $W=1.932$. Accordingly, all three samples, the distribution of values in all three samples should be recognized as close to normal and parametric methods should be used for them.

Initially we calculated the mean for three major clusters and ten scales, based on the scoring implemented by Gati and Saka (2001). The mean for three clusters was calculated by the following formulas:

- Lack of readiness $(R_m + R_i + R_d)/3$;
- Lack of Information $(L_p + L_s + L_o + L_a)/4$;
- Inconsistent Information $(I_u + I_i + I_e)/3$.

Finally, mean of career decision-making difficulties questionnaire was calculated by using 10 scales $(R_m + R_i + R_d. + L_p + L_s + L_o + L_a + I_u + I_i + I_e)/10$ (Gati and Saka, 2001; Willner et al., 2015).

Table 3 shows the pre-course and post-course assessment descriptive statistics (mean and standard deviation) for control group.

Table 4 shows the pre-course and post-course assessment descriptive statistics (mean and standard deviation) for experimental group.

In Table 4 we can view the pre-course and post-course assessment (experimental group) descriptive statistics on the CDDQ (3 clusters, 10 scales). For the reliability analysis Cronbach alpha reliability coefficient was used. The higher values of Cronbach alpha coefficient indicates that the survey is more reliable. The pre-course assessment represented reliability coefficient as following:

- Lack of Readiness - 0.89;
- Lack of Information - 0.84;
- Inconsistent Information - 0.87;
- Overall according to the CDDQ – 0.90.

The post-course assessment reliability and internal Cronbach alpha coefficient for experimental group was:

- Lack of Readiness - 0.90;
- Lack of Information - 0.91;
- Inconsistent Information - 0.91;
- Overall according to the CDDQ – 0.92.

As it can be seen on Table 3 students likely to show high level of difficulties in all there major clusters of CDDQ. Thus, we can see that of the Lack of Readiness clusters' scales students showed the main difficulty in the general indecisiveness scale ($M=6.5$, $SD=1.94$). As it stated by Gati and Saka (2001) the first category, Lack of Readiness, includes three categories of difficulties that may arise before the beginning of the career decision-making process, which should not be common for the undergraduate students in their third and fourth courses. In our case, general indecisiveness shows students' concerns in all types of decisions. The Lack of Information and the Inconsistent Information clusters include categories of difficulties that may arise during the actual career decision-making process. In the Lack of Information cluster during pre-course assessment the highest arithmetic average was shown in the lack of information about self scale ($M=6.54$, $SD=1.34$). Finally, in the Inconsistent Information cluster the highest arithmetic average during the pre-course assessment can be seen in the internal conflicts scale. These results are consistent, because of the high scores in lack of information about self scale, in other words these are the conflicts within the individual, such as contradictory preferences or difficulties concerning the need to compromise (Gati and Saka, 2001).

3.1. "Career development" course and its influence on students' career-decision making readiness

The Career Development course was designed to support students in the career development process so they make informed and appropriate career and educational decisions; to integrate self-knowledge into future professional lives, set goals, and develop strategies to achieve them. The course was included three main modules:

- Career and Self Awareness – this module was directed to assist students in identifying their strength, skills, interests, and goals with relation to their chosen majors. As a practical part students used self-assessment tools to better understand themselves.
- Career Exploration – this module helped to explore their future career fields, gather information about their professional opportunities and future occupation. As a practical part, students developed their career and life long and short term plans, and solved different case studies related to the career search.
- Decision making and Implementation – this module was directed to help students transit from education to employment or

TABLE 3 The pre-course and post-course assessment descriptive statistics for control group.

Scales	Pre-course assessment <i>n</i> = 52			Post-course assessment <i>n</i> = 52		
	<i>M</i> (mean)	SD (standard deviation)	Cronbach alpha	<i>M</i> (mean)	SD (standard deviation)	Cronbach alpha
Lack of readiness	5.0	1.73	0.84	6.0	1.01	0.90
Motivation	4.3	1.5	0.89	5.6	1.14	0.91
General indecisiveness	6.3	2.1	0.85	7.3	0.94	0.92
Dysfunctional beliefs	4.41	1.7	0.83	5.1	1.15	0.90
Lack of information	5.95	1.17	0.89	5.8	0.64	0.91
About the process	5.7	1.1	0.85	5.5	0.78	0.92
About self	6.8	0.9	0.89	6.2	0.67	0.90
About occupations	5.9	1.5	0.79	6.0	1.62	0.91
Ways of obtaining additional information	5.4	1.2	0.71	5.5	0.85	0.90
Inconsistent information	5.2	1.06	0.87	6.06	0.55	0.91
Unreliable information	5.1	1.5	0.81	6.2	1.23	0.91
Internal conflicts	5.30	0.78	0.7	5.9	0.89	0.89
External conflicts	5.2	0.9	0.89	6.1	1.43	0.92
Overall difficulties	5.38	1.32	0.93	5.95	0.90	0.92

TABLE 4 The pre-course and post-course assessment descriptive statistics for experimental group.

Scales	Pre-course assessment <i>n</i> = 52			Post-course assessment <i>n</i> = 52		
	<i>M</i> (mean)	SD (standard deviation)	Cronbach alpha	<i>M</i> (mean)	SD (standard deviation)	Cronbach alpha
Lack of Readiness	5.11	1.2	0.89	2.7	1.01	0.90
Motivation	4.4	1.30	0.85	2.13	1.14	0.91
General indecisiveness	6.5	1.94	0.89	3.87	0.94	0.92
Dysfunctional beliefs	4.44	1.74	0.79	2.1	1.15	0.90
Lack of Information	5.4	0.87	0.84	2.99	0.64	0.91
About the process	4.57	0.94	0.89	2.85	0.78	0.92
About self	6.54	1.34	0.85	3.37	0.67	0.90
About occupations	5.75	1.34	0.83	2.9	1.62	0.91
Ways of obtaining additional information	4.95	1.4	0.88	2.91	0.85	0.90
Inconsistent Information	4.93	0.35	0.87	2.27	0.55	0.91
Unreliable information	4.6	1.54	0.88	2.43	1.23	0.91
Internal conflicts	5.30	0.78	0.87	2.42	0.89	0.89
External conflicts	4.90	1.3	0.86	1.98	1.43	0.92
Overall difficulties	5.1	1.54	0.90	2.61	0.53	0.92

graduate education. As a practical part, students learned how to write a cover letter, resume, went through mock interviews, searched for networking opportunities. Additionally, they prepared individual career life plans.

To analyze and understand the significance in difference between pre-course and post-course assessment means in the experimental group a paired Students' *t*-test was used in three main clusters ((1) Lack of readiness, (2) Lack of Information, and (3) Inconsistent Information) and overall subscales (CDDQ) results. As it can be seen in the Table 5 of the given article, the differences for each analyzed

variable was considered to be statistically significant at 0.05 significance level for pre-course and post-course assessment for three clusters and CDDQ (overall scoring). The *t*-test showed statistically significant decrease in difficulties in career decision-making that students face after they attended the Career Development course. Figure 1 shows us the pre and post "Career Development" Course assessment results and mean difference. The Mean difference between pre-and post-course results in the experimental group are as following: Lack of readiness – 2.41 points, Lack of Information – 2.46 points, and Inconsistent Information – 2.76, and 2.51 points in overall difficulties CDDQ.

Thus, the research results show positive impact of the Career Development Course on the students' level of difficulties in career decision-making, as we can see a significant decrease CDDQ results: pre-course assessment ($M=5.1$, $SD=1.54$) to post-course assessment ($M=2.59$, $SD=0.53$) at the two-tailed p value 0.0065, $t=5.2$, $p<0.05$, 95% CI for mean difference (From 1.2509 to 4.1051).

Table 6 Shows the pre-course and post-course assessment results for CDDQ for experimental and control groups.

As it can be seen from Table 6 the experimental group showed positive changes the Lack of readiness scale showed -2.41 point and changed from the moderate level of career decision-making difficulty to low level of career decision-making difficulty, as for control group the level of difficulties students show on the Lack of readiness scale grew for 1 point. Both experimental and control groups showed changes in the Lack of Information scale. In comparison experimental groups' results changed significantly - 2.41 and after the course students show low level of difficulties they have in being informed about their future occupation.

The comparison of the Career Decision Making Difficulties Questionnaire's overall results show the significant changes in the experimental group from 5.1 to 2.61 (-2.49), which means students show low level of career decision-making difficulties and are ready to choose their career paths. At the same time control group showed slight negative change ($+0.57$) and show moderate to high level of career decision-making difficulties.

As we can see from Table 6 t -test showed statistically significant decrease in difficulties in career decision-making that students face after they attended the Career Development course in an experimental group. The obtained empirical value of t criteria Student (18.3) is in the zone of significance for experimental group.

At the same time t -test showed no significant changes in the results of pre-course and post-course assessment for the control group. The obtained empirical value of t criteria Student (2.3) is in the zone of insignificance for control group.

4. Discussion

Interest in this study arose from analyzing the experience of the Career Development Center at Toraihyrov University. After

graduation and subsequent employment, students often change jobs (and even occupations) within a short period of time that is also supported by academic research (Tien, 2005; Sampson et al., 2014; Malin et al., 2017). This is concerning and led to our investigation of the severity of the problem, and a desire to develop effective ways of supporting students in their career development, by implementing Career Development course. Analysis of the work of the University Career Center and the results of the CDDQ allowed us to suggest ways of enhancing students' career development level.

This research was based on the taxonomy of the career-decision making difficulties developed by Gati et al. (2019). The research results showed significant decrease in the level of difficulties in career decision-making for students who attended and completed the course for the whole period of 15 weeks (one term). The success and effectiveness of such career development courses has been proven in a number of studies (Jepsen and Dickson, 2003; Fouad et al., 2016; Atuahene, 2021), but the results obtained are much higher than those demonstrated in other papers. As a result of this course students' self-efficacy and confidence in career decision process increased too.

The research goal was reached as the results show positive influence of implemented "Career Development" course on students career exploration process, their readiness for career decision-making by reduce of the career decision-making difficulties. The study revealed that the highest level in career decision-making difficulties students faced were in such scales as General Indecisiveness, which means that students face all type of concerns about their future lives; Lack of Information about Self, which means that their career or major choice was made weather intuitively or by the influence of external factors such as family, school, friends, society; and Internal Conflicts scale, which means that students have contradictory preferences or difficulties concerning the need to compromise (Gati and Saka, 2001).

The other important notion which was revealed during the study was that senior years students (3d and 4th course) showed high level of career decision-making difficulties in the first cluster Lack of Readiness, which is more common for those who are in the beginning of the career decision-making process (Amir et al., 2008; Gati et al., 2019). Most of the studies on career barriers concern graduates or look at preventive interventions for

TABLE 5 Pre-course, post-course assessment scores: means, t -test (experimental group).

Scale / outcomes		Lack of readiness	Lack of information	Inconsistent information	CDDQ
Pre-course	M1	5.11	5.45	5.03	5.1
	SD1	1.2	0.87	0.65	1.54
Post-course	M2	2.7	2.99	2.27	2.59
	SD2	1.01	0.64	0.67	0.53
N		52	52	52	52
95% confidence interval of this difference		From 1.9392 to 2.8875	From 1.4065 to 3.5085	From 1.6085 to 3.7048	From 1.2509 to 4.1051
Mean difference		2.41	2.46	2.76	2.51
t - criteria		21.89	7.4	10.90	5.2
df		51	51	51	51
Cohen's d		1.32	1.05	1.81	1.42

TABLE 6 The comparison of pre-course, post-course assessment results of experimental and control groups.

Scale / outcomes		Pre-course		Post-course		Change
		Mean	SD	Mean	SD	
Lack of readiness	EG	5.11	1.2	2.7	1.01	-2.41
	CG	5.0	1.73	6.0	1.01	+1
Lack of information	EG	5.4	0.87	2.99	0.64	-2.41
	CG	5.95	1.17	5.8	0.64	-0.15
Inconsistent information	EG	4.93	1.18	2.27	0.55	-2.66
	CG	5.2	1.06	6.06	0.55	+0.86
CDDQ	EG	5.1	1.54	2.61	0.53	-2.49
	CG	5.38	1.32	5.95	0.90	+0.57

first-year students (Jones et al., 2017; Malin et al., 2017; Mohammed et al., 2021). The course proposed here is beneficial in that it can be implemented at any stage of education and has been tested on those students who are almost not affected by other researchers.

With the help of the CDDQ were identified specific spheres that should be developed through Career Development course. For example, it is clear that students lack information or do not have the skills to analyze and implement the information they already have about their future career or profession. As a result, researchers can see internal difficulties among students such as understanding themselves, their needs, strengths, and weaknesses, which is consistent with the difficulties identified by earlier studies (Gati and Saka, 2001; Atuahene, 2021). These findings indicate the need to develop a special career course, which will be directed at developing career decision-making competencies among students (Gati et al., 2019). A career development course should be directed at supporting students in their search for opportunities in their future vocational occupations (Hirschi, 2012; Xu and Tracey, 2014).

Additionally, we suggest developing career counseling practice at the university. The main focus of one-to-one sessions should be support for students in understanding their strong and weak sides and finding their intended career paths. It is vital to support students in developing life-long skills that they can use to seek a job and make career changes. The last years of undergraduate studies are the period when a greater number of students should already have a clear idea of what they are going to do in future and should be ready for career decision-making.

4.1. Limitation

As this study was conducted in only one university, it remains unclear whether the institution's nature affected students' characteristics and their degree of involvement in career development and making career decisions. Among other limitations of the study, one should also consider the possibility of the influence of the charisma or personality of the instructors in the implemented course, which could have an additional effect on changing the thinking of the participants. Also, certain filters were used for the sample, which limit the generalizability of the results to a wider sample of students.

4.2. Recommendations for future research

We consider it is appropriate to further reproduce this study in other educational organizations. These organizations should have differing education levels and involve students from different educational programs to determine the degree of institutional influence.

Future research could also focus on external and internal factors that influence students (encourage them, or push them away from career counseling support). For example, further study of the cultural characteristics of Kazakhstani students could determine the extent to which these factors influence students' career decision-making competence and vocational identity. The present study also addresses questions about the level of students' education and their work experience. The third and fourth year undergraduate and graduate students who already have experience in the chosen profession were interviewed. Differences in accessing reliable information related to vocational activities and career opportunities for undergraduate and graduate students who already have work experience should be studied.

5. Conclusion

The career decision-making process can be devastating process for unprepared students. Choosing major or profession should not be one and only decision in persons career path and knowledge about opportunities in future occupation and education give students necessary tools necessary for professional and personal success and growth. The suggested Career Development course is one of the possible solutions that gives students an opportunity to explore themselves through knowing their strength and potentiality; to learn how to gather critically analyze and obtain information about their future occupation; to find solutions to existing internal and external conflicts about choice of their majors. The course uses the tools and theoretical background of the main theories of career development and is focused on increasing motivation and practical training of the skills necessary at each of the steps of building a career. The results of the proposed course showed a two-fold reduction in the main factors associated with career difficulties according to The Career Decision-making Difficulties Questionnaire (CDMDQ) on all major scales (Lack of Readiness from 5.11 to 2.7; Lack of Information from 5.4 to 2.99; Inconsistent Information from 4.93 up to 2.27). These results far exceeded the predictive expectations of the researchers. In practice, the results obtained can be applied at universities and colleges of any professional orientation to increase the readiness of graduates to build a career and increase motivation for learning. Career course developers and instructors can use the approach and structure described in the "Career Development" course to quickly improve the quality of career decision-making and career readiness of their students.

Data availability statement

The original contributions presented in the study are included in the article/supplementary material, further inquiries can be directed to the corresponding author.

Ethics statement

The Scientific and Technical Council and the Ethical Commission of Toraighyrov University approved the conduct of the study by protocol No. 01318 and certified its compliance with the required standards of ethics and protection of participants.

Author contributions

AA and AK conceived of the presented idea. AA developed the theory and performed the computations. NF and GT verified the analytical methods. AK encouraged GT to investigate and supervised the findings of this work. All authors contributed to the article and approved the submitted version.

References

- Amir, T., Gati, I., and Kleiman, T. (2008). Understanding and interpreting career decision-making difficulties. *J. Career Assess.* 16, 281–309. doi: 10.1177/1069072708317367
- Atuahene, F. (2021). An analysis of major and career decision-making difficulties of exploratory college students in a mid-Atlantic university. *SN Soc. Sci.* 1:80. doi: 10.1007/s43545-021-00082-0
- Brown, S. D., and Lent, R. W. (2004). *Career development and counseling: putting theory and research to work* John Wiley & Sons.
- Dixon, J., Belnap, C., Albrecht, C., and Lee, K. (2010). The importance of soft skills. *Corp. Finance Rev.* 14, 35–38.
- Esbroeck, R. V., Tibos, K. I. M., and Zaman, M. (2005). A dynamic model of career choice development. *Int. J. Educ. Vocat. Guid.* 5, 5–18. doi: 10.1007/s10775-005-2122-7
- Fouad, N. A., Ghosh, A., Chang, W., Figueiredo, C., and Bachhuber, T. (2016). Career exploration among college students. *J. Coll. Stud. Dev.* 57, 460–464. doi: 10.1353/csd.2016.0047
- Gati, I., Gadassi, R., and Mashiah-Cohen, R. (2012). Career decision-making profiles vs. styles: convergent and incremental validity. *J. Vocat. Behav.* 81, 2–16. doi: 10.1016/j.jvb.2012.03.004
- Gati, I., Levin, N., and Landman-Tal, S. (2019). “Decision-making models and career guidance” in *International handbook of career guidance*. eds. J. Athanasou and H. Perera (Springer), 115–145.
- Gati, I., and Saka, N. (2001). High school students' career-related decision-making difficulties. *J. Couns. Dev.* 79, 331–340. doi: 10.1002/j.1556-6676.2001.tb01978.x
- Germeijs, V., and Verschueren, K. (2006). High school students' career decision-making process: development and validation of the study choice task inventory. *J. Career Assess.* 14, 449–471. doi: 10.1177/2F1069072706286510
- Germeijs, V., and Verschueren, K. (2007). High school students' career decision-making process: consequences for choice implementation in higher education. *J. Vocat. Behav.* 70, 223–241. doi: 10.1016/j.jvb.2005.08.004
- Gu, X., Tang, M., Chen, S., and Montgomery, M. L. (2020). Effects of a career course on Chinese high school students' career decision-making readiness. *Career Dev. Q.* 68, 222–237. doi: 10.1002/cdq.12233
- Hayden, S. C., and Osborn, D. S. (2020). Impact of worry on career thoughts, career decision state, and cognitive information processing skills. *J. Employ. Couns.* 57, 163–177. doi: 10.1002/joc.12152
- Hirschi, A. (2012). Vocational identity trajectories: differences in personality and development of well-being. *Eur. J. Personal.* 26, 2–12. doi: 10.1002/per.812
- Hirschi, A., and Läge, D. (2007). The relation of secondary students' career-choice readiness to a six-phase model of career decision making. *J. Career Dev.* 34, 164–191. doi: 10.1177/0894845307307473
- Jepsen, D. A., and Dickson, G. L. (2003). Continuity in life-span career development: career exploration as a precursor to career establishment. *Career Dev. Q.* 51, 217–233. doi: 10.1002/j.2161-0045.2003.tb00603.x
- Jones, M., Baldi, C., Phillips, C., and Waikar, A. (2017). The hard truth about soft skills: what recruiters look for in business graduates. *Coll. Stud. J.* 50, 422–428.
- Kleiman, T., Gati, I., Peterson, G., Sampson, J., Reardon, R., and Lenz, J. (2004). Dysfunctional thinking and difficulties in career decision making. *J. Career Assess.* 12, 312–331. doi: 10.1177/1069072704266673
- Krieschok, T. S., Black, M. D., and McKay, R. A. (2009). Career decision-making: the limits of rationality and the abundance of non-conscious processes. *J. Vocat. Behav.* 75, 275–290. doi: 10.1016/j.jvb.2009.04.006

Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

- Kulcsár, V., Dobrean, A., and Gati, I. (2020). Challenges and difficulties in career decision making: their causes, and their effects on the process and the decision. *J. Vocat. Behav.* 116:103346. doi: 10.1016/j.jvb.2019.103346
- Lent, R. W., Brown, S. D., and Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *J. Vocat. Behav.* 45, 79–122. doi: 10.1006/jvbe.1994.1027
- Levin, N., Udayar, S., Lipschits-Brazilier, Y., Gati, I., and Rossier, J. (2023). The structure of the career decision-making difficulties questionnaire across 13 countries. *J. Career Assess.* 31, 129–148. doi: 10.1177/10690727221099226
- Malin, J. R., Bragg, D. D., and Hackmann, D. G. (2017). College and career readiness and the every student succeeds act. *Educ. Adm. Q.* 53, 809–838. doi: 10.1177/0013161X17714845
- Mohammed, Z., Kumar, S., and Padakannaya, P. (2021). Well-being and career decision-making difficulties among master's students: a simultaneous multi-equation modeling. *Cogent Psychol.* 8:1996700. doi: 10.1080/23311908.2021.1996700
- National Classifier of the Republic Kazakhstan (2019) *State system of technical regulation of the Republic of Kazakhstan*. The republican classifier of occupations of workers and positions of employees. Nur-Sultan.
- Osborn, D. S., and Belle, J. G. (2019). Preparing juvenile offenders for college and career readiness: a cognitive information processing approach. *J. Educ. Psychol. Consult.* 29, 283–313. doi: 10.1080/10474412.2018.1482216
- Patton, M. Q. (2002). *Qualitative research and evaluation methods*. 3rd Edn Sage Publications.
- Rochat, S. (2019). The career decision-making difficulties questionnaire: a case for item-level interpretation. *Career Dev. Q.* 67, 205–219. doi: 10.1002/cdq.12191
- Saka, N., Gati, I., and Kelly, K. R. (2008). Emotional and personality-related aspects of career-decision-making difficulties. *J. Career Assess.* 16, 403–424. doi: 10.1177/1069072708318900
- Sampson, J. P., Hou, P. C., Kronholz, J. F., Dozier, V. C., McClain, M. C., Buzzetta, M., et al. (2014). A content analysis of career development theory, research, and practice—2013. *Career Dev. Q.* 62, 290–326. doi: 10.1002/j.2161-0045.2014.00085.x
- Sampson, J. P., Reardon, R. C., Peterson, G. W., and Lenz, J. G. (2004). *Career counseling and services: a cognitive information processing approach* Thomson/Brooks/Cole.
- Savickas, M. (2013). “Career construction theory and practice” in *Career development and counseling: Putting theory and research to work*. eds. R. Lent and S. Brown. 2nd ed (John Wiley & Sons), 144–180.
- Tang, M. (2019). “Career development theories I” in *Career development and counseling*. ed. A. Rickward (SAGE Publications, Inc.), 95–126.
- Taylor, E. A., Siegele, J. L., Smith, A. B., and Hardin, R. (2018). Applying career construction theory to female National Collegiate Athletic Association Division I conference commissioners. *J. Sport Manag.* 32, 321–333. doi: 10.1123/jsm.2017-0179
- Tien, H. L. S. (2005). The validation of the career decision-making difficulties scale in a Chinese culture. *J. Career Assess.* 13, 114–127. doi: 10.1177/2F1069072704270327
- Vahedi, S., Farrokhi, F., Mahdavi, A., and Moradi, S. (2012). Exploratory and confirmatory factor analysis of the career decision-making difficulties questionnaire. *Iran. J. Psychiatry* 7:74.
- Willner, T., Gati, I., and Guan, Y. (2015). Career decision-making profiles and career decision-making difficulties: a cross-cultural comparison among US, Israeli, and Chinese samples. *J. Vocat. Behav.* 88, 143–153. doi: 10.1016/j.jvb.2015.03.007

Wright, S. L., Jenkins-Guarnieri, M. A., and Murdock, J. L. (2013). Career development among first-year college students: college self-efficacy, student persistence, and academic success. *J. Career Dev.* 40, 292–310. doi: 10.1177/2F0894845312455509

Xu, H., and Tracey, T. J. (2014). The role of ambiguity tolerance in career decision making. *J. Vocat. Behav.* 85, 18–26. doi: 10.1016/j.jvb.2014.04.001