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Career indecision and career indecisiveness in high school and vocational training students: a scoping review

Indecisión vocacional evolutiva y compleja en Secundaria, Bachillerato y Formación Profesional: una revisión sistemática exploratoria

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ABSTRACT

Recent events underscore the need for inclusive and sustainable vocational guidance adapted to a context marked by uncertainty, digitalization, stress, and disruptions in the spaces in which adolescents develop. It is key to understand the difficulties that this population may manifest in their transitions, to make vocational decisions. Utilizing the PRISMA-Scr statement, this scoping review examined the literature published between 2007 and 2023 related to the factors that influence career indecision and career indecisiveness, the existing instruments used to measure them in the adolescent population, and the intervention programs applied in their prevention or treatment. Following the predetermined inclusion criteria, 78 papers (N = 825) identified in indexed journals were analyzed. The CIPP-C method was applied for the analysis, which allowed us to present the results in an integrative multidimensional model that would enable us to conjecture the possible relationships between the systems of variables identified, which is one of the main contributions of this work. The results found highlight the heterogeneity of contextual, cognitive, emotional, behavioral, and personality factors in both indecision types, the reliability and validity of unidimensional and multidimensional instruments at a cross-cultural level to assess them, and the presence of intervention programs on developmental career indecision in educational settings. It is concluded that further research is needed for specific evidence-based programs for those with career indecisiveness and for vocational training students. Additional research is also needed for greater representation of qualitative and mixed studies, which collect the experience of undecided students in globalized, digitalized, climatic, and health emergency contexts. Finally, as implications for practice, a narrative, cognitive-behavioral, and systemic approach is recommended. Moreover, specific elements are proposed for intervention in career indecisiveness.

Keywords: career indecision, systematic review, career guidance, career counseling, decision making, career choice, adolescents

RESUMEN

Acontecimientos recientes subrayan la necesidad de una orientación vocacional inclusiva, sostenible y adaptada a un contexto marcado por la incertidumbre, la digitalización, el estrés y las disrupciones en los espacios en que se desarrollan los adolescentes. Para ello es clave entender las dificultades que puede manifestar esta población en sus transiciones, para tomar decisiones vocacionales. Este trabajo presenta una revisión sistemática exploratoria, siguiendo la declaración PRISMA-Scr, de la literatura publicada entre 2007 y 2023 relacionada con los factores que influyen en la indecisión vocacional evolutiva y compleja, los instrumentos existentes y utilizados para evaluarlas en población adolescente, y los programas de intervención aplicados en su prevención o tratamiento. Siguiendo los criterios de inclusión predeterminados se analizan 78 trabajos (N = 825) identificados en revistas indexadas. Para su análisis y conceptualización se ha aplicado el método CIPP-C, que ha permitido presentar los resultados en un modelo multidimensional integrador

que posibilita conjeturar a futuro las posibles relaciones entre los sistemas de variables identificadas y que constituye una de las principales aportaciones de este trabajo. Los resultados encontrados destacan la heterogeneidad de factores contextuales, cognitivos, emocionales, conductuales y de personalidad en ambos tipos de indecisión, la fiabilidad y validez de instrumentos unidimensionales y multidimensionales a nivel transcultural para evaluarlas, y la presencia de programas de intervención en indecisión vocacional evolutiva en los espacios educativos. Se concluye la necesidad de programas específicos, basados en la evidencia, para quienes presentan indecisión vocacional compleja y para estudiantes de Formación Profesional. También se necesita mayor representación de estudios cualitativos y mixtos, que recojan la experiencia de los estudiantes indecisos en contextos globalizados, digitalizados, de emergencia climática y sanitaria. Por último, como implicaciones para la práctica se recomienda una aproximación narrativa, cognitivo-conductual y sistémica y se propone contemplar elementos específicos para la intervención en indecisión vocacional compleja.

Palabras clave: indecisión vocacional, revisión sistemática, orientación profesional, toma de decisiones, elección profesional, adolescencia

INTRODUCTION

The 2030 Agenda adopted by the United Nations (2020) addresses the need for new perspectives in vocational guidance to meet present and future challenges. Researchers have presented inclusive and sustainable proposals, integrating individual identity with environmental, social, and economic factors (Di Maggio et al., 2021; Echeverría & Martínez-Clares, 2024; Santilli et al., 2020). The effects of the COVID-19 pandemic, digitalization, and technologies based on artificial intelligence (AI) (Borbély-Pecze & Gyöngyösi, 2024), have transformed educational environments (Ortí Martínez et al., 2024; Osorio León & Borja, 2020). Vocational guidance programs assisted by electronic devices have emerged alongside initial digital transformations and since proliferated (Hernández-Franco, 2014). However, their use has remained largely confined to the search for vocational information (Organization for Economic Co-operation and Development [OECD], 2024; Requejo Fernández et al., 2022).

Effective vocational guidance requires recognizing both the difficulties young people have and their sources of support. Key difficulties include economic pressures from unemployment and job insecurity (Macdonald et al., 2024) and socio-economic and environmental uncertainties, which negatively affect people's health and well-being (Nota et al., 2020). Recent events have caused significant disruptions in the social and educational conditions through which adolescents conceptualize their futures (Carey et al., 2023), altering their aspirations and perceptions (Malinić et al., 2024; Santilli et al., 2020). Teachers and healthcare professionals have reported

increases in anxiety, loneliness, low self-esteem, and depression (Echavarren, 2024; Jen et al., 2024). Sources of support include family (Barnes et al., 2020; Carey et al., 2023), teachers (Wong et al., 2021), and peers (Carey et al., 2023; Lent & Brown, 2020).

Two out of five students exhibit career indecision per PISA (2022; OECD, 2024), a figure that has risen since 2018 and which affects student well-being (Şeker, 2020) and commitment to their choices (Šverko & Babarović, 2019). This is a relevant finding, alongside the dropout rate in Vocational Education and Training (VET) (Salvà Mut et al., 2024) and university education (Conferencia de Rectores de las Universidades Españolas [CRUE], 2024).

Researchers have traditionally divided career indecision into two types: developmental and chronic (indecisiveness) (Crites, 1969; Holland & Holland, 1977; Rivas, 1998). They have also proposed several theoretical models to understand the types (Gati et al., 1996; Germeijs & De Boeck, 2002; Lent & Brown, 2020; Osipow et al., 1976; Saka et al., 2008; Sampson et al., 2023; Savickas, 2020). Developmental career indecision refers to the difficulties that individuals face when making vocational decisions, typically emerging before starting the process, due to lack of preparation, or during the process, due to insufficient or excessive information or inconsistent information. Indecisiveness, by contrast, is more persistent and is associated with emotional and personality-related aspects such as self-concept and identity, a pessimistic outlook on life, maladaptive problem-solving approaches and anxiety. Based on these two conceptualizations, Levin et al. (2020) propose more specific typologies according to the type of difficulty: unmotivated, indecisive, chronic, unrealistic, uninformed and conflicted. Counselors have defined both types through a list of difficulties encountered during vocational decision-making processes and assess them through specific psychometric instruments.

Likewise, narrative theoretical models, such as career construction and life design (Savickas, 1995; Savickas, 2020; Savickas et al., 2009), highlight the subjective experience of the individual exhibiting career indecision, interpreting it as a manifestation of change and the formation of a new psychosocial identity in the personal search for meaning. These models emphasize adaptability and agency in individuals while also recognizing the influence of social and cultural contexts (Lent & Brown, 2020; McMahon & Patton, 2019). Specifically, in the Spanish context, various authors have conceptualized career indecision and indecisiveness in the adolescent stage (Castelló & Cladelas, 2021; Gómez & Rivas, 1997; Lozano & Repetto, 2007).

Recent systematic reviews report a direct relationship between career indecision and personality traits (Martincin & Stead, 2015), self-assessments (self-efficacy and self-esteem) in the general population (Udayar et al., 2020), and depression and negative thoughts among adolescents (Amaral et al., 2023). The latter study points to the scarcity of literature on the impact on mental health of career indecision and the transition from compulsory education to the labor market. Additionally,

Priyashantha et al. (2022) identified areas requiring further research, including individual differences, contextual factors, social factors, and subjective well-being because of career indecision.

Xu and Bhang (2019) identify different multidimensional instruments, such as the Career Decision-Making Difficulties Questionnaire (CDDQ; Gati et al., 1996), Emotional and Personality-related Career Difficulties Questionnaire (EPCD; Saka et al., 2008), and the Career Indecision Profile (CIP; Hacker et al., 2013). They propose conceptualizing career indecision (both developmental and chronic) through a five-factor model: (1) general factors such as neuroticism, generalized anxiety and self-esteem; decision-making process-specific factors such as (2) anxiety, (3) lack of information, (4) lack of preparation, and (5) interpersonal conflicts and inconsistent information. Reviews of specific instruments and their cross-cultural validity are also available (Levin et al., 2020).

Finally, protocols based on major theoretical models have proven effective in career planning and vocational guidance. Those with the most significant positive impact include key resources such as workbooks and written exercises, individualized interpretations and feedback, labor market information in-session, modeling, attention to building support sources, personalized guidance, values clarification, and psychoeducation to continue the process until achieving the defined goals (Brown et al., 2003; Whiston et al., 2017). International studies are conclusive: participating in guidance activities prevents career indecision (OECD, 2024).

Since the causes that can lead to career indecision and indecisiveness differ, each type requires distinct counseling strategies and interventions (Blustein et al., 2019; Brown et al., 2012). Career indecision primarily requires psychoeducation on how to make a vocational decision and academic and professional information aligned with the individual's interests, whereas career indecisiveness requires more in-depth vocational guidance (Maree & Magere, 2023; Sampson et al., 2023). Lent and Brown (2020) mention a possible overlap between clinical therapy and vocational counseling when working with individuals whose problems are neither exclusively related to career indecision nor clinically pathological such as low self-esteem, anxiety, lack of motivation, low self-efficacy, worry, irrational beliefs.

Career indecision is a construct with a long history of study and remains active in research agendas due to the needs and challenges posed by the current times of globalization, climate emergency and post-pandemic recovery. Bian (2023) stresses the need for contemporary research that examines in depth the thoughts and feelings of those who experience career indecision. As an initial step, this study aims to analyze factors that have been studied concerning different types of career indecision and consider different theoretical models, measurement instruments, and intervention programs for adolescents. A review of the scientific literature can benefit both counselors in their practice and the advancement of

research in this field. Systematic scoping reviews (Manchado-Garabito et al., 2009; Tricco et al., 2018), are appropriate for exploring the nature and characteristics of empirical studies, assessing the extent of research conducted (in this case on career indecision), identifying key concepts, possible gaps, and types and sources of practical evidence. Anguera (2023) suggests mixed-methods reviews at the methodological level, including quantitative, qualitative, and mixed studies.

Objectives

The general objective of the study is to review the most relevant scientific literature on career indecision and career indecisiveness in upper secondary school (years 9th to 12th) and basic and intermediate VET students. The specific research objectives are:

1. To identify the key variables associated with career indecision and career indecisiveness.
2. To analyze the instruments used to evaluate career indecision and career indecisiveness .
3. To examine the intervention programs targeting career indecision and career indecisiveness.

The integrative general map we propose may serve as a useful tool for advancing towards more inclusive and sustainable career guidance practices.

METHOD

The present scoping review uses the phases and criteria outlined by *Preferred Reporting Items for Systematic Reviews and Meta-Analyses Extension for Scoping Reviews* (PRISMA-ScR, Tricco et al., 2018), and implements the framework for conducting scoping reviews proposed by Peters et al. (2015, 2020). The steps undertaken are outlined below.

Search strategy

The literature review was conducted in August 2023. An initial exploratory search was performed in specialized psychology and education databases, such as PsycInfo, Psicodoc, and ERIC, to identify and select key concepts. Subsequently, we searched for the selected terms, listed in Table 1, in the specialized databases PsycInfo, Psicodoc, Medline, and ERIC; multidisciplinary databases Web of Science (WOS), Scopus, and Dialnet; and, due to its relevance, the specialized *Journal of*

Vocational Behavior. The search fields included: title, abstract, and keywords. For each database, appropriate filters, strategies and Boolean operators 'OR' and 'AND' were employed to combine terms. The protocol was registered with the Open Science Framework (OSF), following PRISMA-ScR recommendations (OSF AQMJH, https://osf.io/aqmjh).

Table 1
Keywords used in the search

Career indecision	Adolescent
Career indecision	Adolescent
Career decision making difficulties	Teenager
Career indecisiveness	High school
Indecisiveness	
EPCD	
CDDQ	
Occupational indecision	
Decisional procrastination	

Note. This table shows an example of a query string in Psycinfo (career indecision OR career decision making difficulties OR career indecisiveness OR indecisiveness OR EPCD OR CDDQ OR occupational indecision OR decisional procrastination) AND (adolescent OR teenager OR high school).

Eligibility criteria

The following inclusion and exclusion criteria were used in the search, screening, and selection of studies: (1) only peer-reviewed journal articles were included; (2) studies involving students in their final years of secondary school (years 9th to 12th) and VET were considered; (3) studies in Spanish and English were included, as these are the reviewers' languages; (4) only studies carried out between 2007 and 2023 were considered, with the temporal reference being the work of Saka and Gati (2007), as this timeframe allows for an examination of research developments while minimizing potential publication bias from either very old or exclusively very recent studies; and (5) empirical studies (quantitative, qualitative, and mixed) on career indecision were included and excluded works without methodological information.

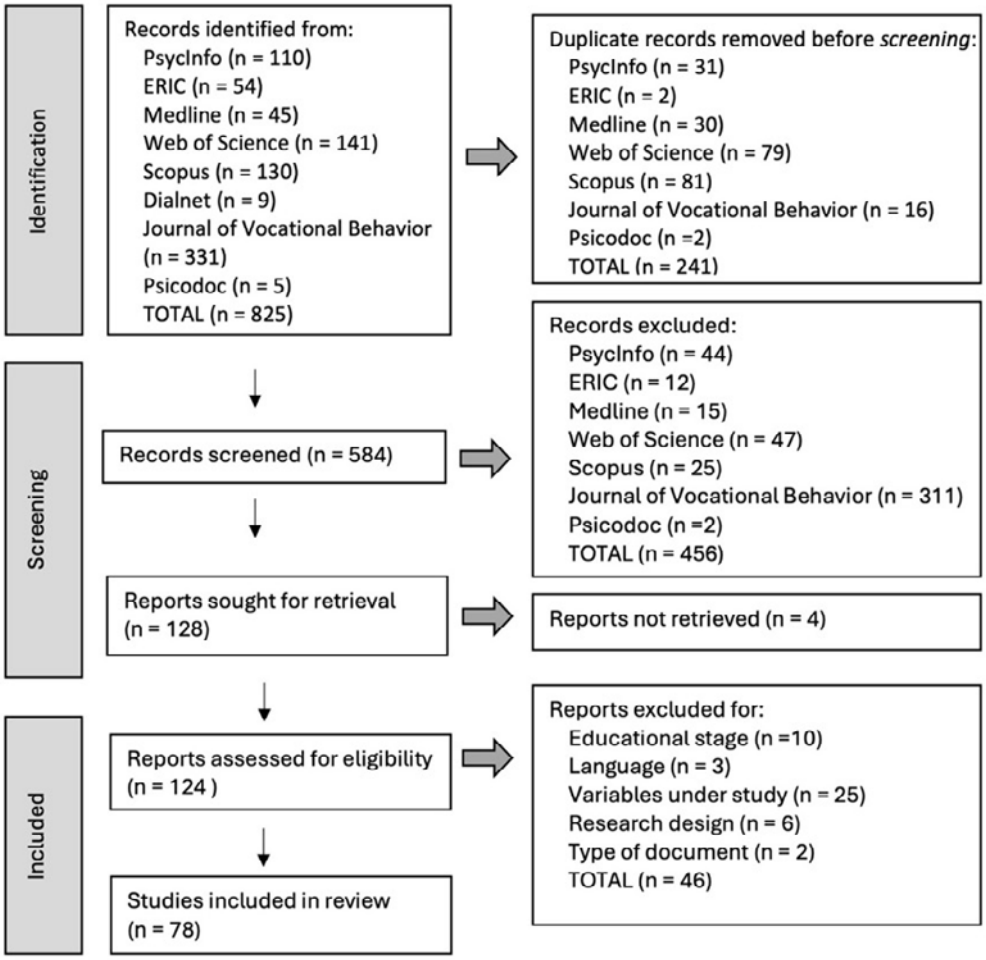
Study selection

As shown in the PRISMA-ScR flow diagram (Figure 1), a total of 825 articles were identified in the full database search. After removing duplicate references, the

abstracts, keywords, and titles were screened based on the inclusion and exclusion criteria. The studies that passed this preliminary screening phase were thoroughly reviewed in full text. Discrepancies were discussed among the authors, who selected and analyzed 78 studies published across 44 academic journals.

Figure 1

PRISMA flow diagram used in the search strategy with results



Data extraction

For in-depth reading and analysis of the 78 selected publications a codebook was created (Martínez-Serrano et al., 2022) following the recommendations of the scoping review methodology (Peters et al., 2015, 2020). This codebook captured the main information from each study: (a) authors' details, (b) main objectives, (c) educational stage, (d) sample or participants information, (e) type of intervention, (f) applied methodology, (g) type of research design, (h) type of analysis conducted, (i) type of indecision, (j) study dimensions, and (k) data analysis techniques applied (Appendix: Tables A1 and A2). The results and limitations were also examined. This approach facilitated the synthesis of the data to meet the objectives of the current scoping review.

To systematically conceptualize the variables associated with career indecision and indecisiveness, we applied the CIPP evaluation model (Sttuflebeam & Shinkfield, 2007). The acronym CIPP corresponds to the following phases: Context, Input, Process, and Product. Context variables refer to the influence of environmental factors, such as socioeconomic, cultural, and family aspects. Input variables refer to characteristics inherent to the individual. Process variables have a dynamic relationship with both the environment and the individual, meaning they can be modified and are therefore amenable to intervention for their development and implementation. The product phase pertains to the central focus of this study: career indecision and indecisiveness. Additionally, a fifth phase is included, encompassing consequence variables: those arising after and because of the product variables. The extended model is summarized with the acronym CIPP-C.

RESULTS

Descriptive analysis of the literature

The 78 selected research papers examine variables and constructs related to career indecision and indecisiveness, the validation of measurement instruments or focus on intervention programs aimed at reducing or preventing career indecision. These studies were conducted in 24 countries, predominantly in Europe (53%), with three studies (4%) identified in Spain, followed by Asia (26%), Oceania (10%), America (9%) and Africa (3%). One study included samples from both France (Europe) and South Korea (Asia).

Most participants were from urban areas (53%), predominantly middle-class, with sample sizes ranging from a single case to over 2,509 participants. Almost all studies (96%) included both male and female participants, while only eight studies (8%) involved VET students, none of which focused on intervention programs. All

studies collected information directly from students, primarily in school settings and through self-report instruments administered in a single application. Additionally, four studies (5%) incorporated parental figures as informants (Denault et al., 2019) or as part of the intervention process (Maree, 2020; Rochat & Rossier, 2016; Taveira et al., 2009), and two studies (3%) included information from mentors and teachers (Culpepper et al., 2015; Maree, 2020).

The studies predominantly adopt a quantitative approach (94%). Only three studies (4%) are qualitative, and two (2%) use a mixed-methods approach.

To describe the results of the data analysis, the information was organized according to the previously stated research objectives: the variables studied and their relationship with career indecision and indecisiveness were reviewed in 66 studies (85%), the instruments used to evaluate career indecision and indecisiveness were examined in 78 studies (100%) and the intervention programs were analyzed in 14 studies (18%).

Research objective 1: Variables associated with career indecision and indecisiveness

The first objective was to conceptually identify the key variables associated with career indecision and indecisiveness in adolescent students in the final years of schooling, for which the CIPP-C model was applied. Variables were identified in 66 studies (85%). The results of the analyses are summarized in Table 2 for career indecision and in Table 3 for career indecisiveness. The inclusion of variables in each dimension (context, input, product, process or consequences) was based on the substantive concept proposed by the authors in the analyzed articles, as detailed in Table A1. Product variables, representing the outcome of the influence of context, input, and process variables, are career indecision and career indecisiveness, measured as either unidimensional or multidimensional constructs. A minority of studies (5%) examine both constructs (Di Fabio & Kenny, 2011; Di Fabio & Palazzeschi, 2012; Di Fabio & Saklofske, 2014; Lo Presti et al., 2017).

Context variables

Regarding context variables, nine studies (12%) reference the educational year group, with mixed findings. Specifically, for career indecisiveness, final-year students scored higher (Baltacı et al., 2020), while no differences were found in other cases (Öztemel, 2013). Additionally, students from lower socio-economic statuses demonstrated higher levels of indecision (Kalalahti et al., 2017).

Furthermore, 18 studies (23%) reported that greater social support (including parental, school, and peer support) was associated with a lower prevalence of career indecision, with the strongest relationship observed with parental support. Authoritarian and permissive parenting styles had a positive relationship with career indecision (Koumoundourou et al., 2010), although authoritarian parenting was also linked to reduced difficulties (Sovet & Metz, 2014). These differences may be influenced by cultural factors, as the study was conducted with adolescents from South Korea and France.

On the other hand, career indecisiveness was associated with low perceived social support, high paternal psychological control in boys, and emotional detachment from both mothers and fathers.

Input variables

Input variables play a crucial role in understanding the dynamics of vocational indecision. Among the studies reviewed, 10 (13%) focused on career indecision, while 15 (19%) examined career indecisiveness (Tables 2 and 3). Regarding gender, 18 studies (23%) found no differences in career indecision as a global construct (Babarović & Šverko, 2016; Duru, 2022; Günes & Owen, 2020), although differences were identified depending on the dimensions considered in the applied instruments (Bacanlı, 2016; Duru, 2022; Kalalahti et al., 2017; Lozano & Repetto, 2007). These studies are not included in Tables 2 and 3 due to the extensive detail in their descriptions. Girls exhibited higher levels of career indecisiveness, except for two studies (Gómez-Arbeo, 2010; Öztemel, 2013). One Turkish study (1%) reported that stress associated with being female directly influenced career indecision in their collectivist culture (Arslan et al., 2022).

The six studies (8%) examining personality traits consistently identified neuroticism as the strongest predictor of career indecision. In three studies (4%), career indecisiveness was positively associated with neuroticism and negatively associated with conscientiousness, extraversion, and openness to experience. The respective tables provide additional information on the personality traits examined.

Moreover, one Canadian study (1%) found no relationship between perceived linguistic identity and difficulties related to career decision-making (Sovet et al., 2017).

Table 2

CIPP-C Model: Antecedents and consequences of career indecision as the product

Context	Input	Process	Consequence
Educational year group (Azpilicueta et al., 2019; Babarović & Šverko, 2016; Bacanlı, 2016; Duru, 2022; Kulcsár et al., 2020; Lozano & Repetto, 2007; Šverko & Babarović, 2019) **Social relationships:** **(+) Parental interference** (Parola et al., 2023); **over parenting** (Arslan et al., 2022); and **parental lack of engagement** (Parola & Marcionetti, 2022; Parola et al., 2023) **(-) Social support** (Jemini-Gashi et al., 2021); **family support** (Nota et al., 2007); **parental support** (Marcionetti & Rossier, 2016; Parola et al., 2023; Parola & Marcionetti, 2022); **family cohesion in male students** (Koumoundourou et al., 2010) **Parental style:** **(+) authoritarian** and **permissive** (Koumoundourou et al., 2010; Sovet & Metz, 2014) **(-) authoritative** (French) and **authoritarian** (South Korean) (Sovet & Metz, 2014) **Socioeconomic-status:** **(+) low** (Kalalahti et al., 2017)	**Personality traits:** **(+) Neuroticism*** (Ambiel et al., 2018; Duru et al., 2021; Kirdök & Korkmaz, 2018; Marcionetti & Rossier, 2016; Pečjak & Košir, 2007) **(-) Conscientiousness, extroversion, openness,** and **agreeableness** (Duru et al., 2021; Marcionetti & Rossier, 2016; Šverko & Babarović, 2019) **(+) External locus of control** (Kirdök & Harman, 2018) **(-) Emotional-intelligence (trait)*** (Di Fabio & Saklofske, 2014) **(-) Core self-evaluations** (Koumoundourou et al., 2010) **Gender:** **(+) Female role stress** (Arslan et al., 2022) **Decision making styles:** **(+) Panic** and **avoidant** (Pečjak et al., 2019) **(-) Self-confident** (Pečjak et al., 2019)	**(+) Worry** (Karacan-Ozdemir, 2019) **(+) Vocational anxiety*** (Şeker, 2020) **(+) Academic procrastination** (Günes & Owen, 2020) **(-) Time perspective** (Ferrari et al., 2010) **(-) Self-efficacy at:** a) **career decision-making** (Charokopaki & Argyropoulou, 2019; Duru, 2022; Duru et al., 2021; Marcionetti & Rossier, 2016); b) **career search** (Jemini-Gashi et al., 2021; Nota et al., 2007); c) **generalized** (Argyropoulou et al. 2007) **(-) Self-esteem** (Charokopaki & Argyropoulou, 2019) **(-) Career maturity** (Babarović & Šverko, 2016; Duru, 2022; Patton & Creed, 2007a) **(-) Career adaptability** (Babarović & Šverko, 2019; Karacan-Ozdemir, 2019; Parola & Marcionetti, 2022) **(+) Self exploration** (Paixão & Gamboa, 2022) **(+) Dispersion of vocational interests** (Argyropoulou et al., 2007) **(+)Occupational aspirations** and **expectations discrepancies** (Patton & Creed, 2007a; Patton & Creed, 2007b) **(-) Career exploration** (Denault et al., 2019; Paixão & Gamboa, 2017, 2022) **(-) Amount of information** (Paixão & Gamboa, 2022) **(-) Optimism** (Charokopaki & Argyropoulou, 2019; Grigor & Turda, 2022) (-) **Hope for success** (Zaleszczyk & Kot, 2015) **(-) Mental well-being*** (Şeker, 2020) **(-) Life satisfaction** (Parola & Marcionetti, 2022) **Motivation:** **(+) Controlled** (Paixão & Gamboa, 2022); **occupational amotivation*** (Jung, 2013a, 2013b, 2018; Jung & McCormick, 2010; Jung & Young, 2017). **(-) Autonomous*** (Paixão & Gamboa, 2022)	**(+) Career planning and exploration** (Creed et al., 2007) **(-) Occupational intention** (Jung, 2018) **(+) Vocational anxiety** (Nalbantoglu-Yilmaz & Cetin-Gunduz, 2018) **(+) Emotional distress** (Kulcsár et al., 2020) **(-) Salary at 34 years old** (Sabates et al., 2017) **(-) Engagement in career construction*** (Šverko & Babarović, 2019) **(-) Study satisfaction*** (Šverko & Babarović, 2019)

Note. Only direct relationships that evolve in the same direction (+) or in the opposite direction (-) to the product are collected. *Relationships that predict indecision.

Table 3

CIPP-C Model: Antecedents and consequences of career indecisiveness as the product

Context	Input	Process	Consequence
Educational year group **(+) Last Year (12th)** (Baltacı et al., 2020) **No differences** (Öztemel, 2013) **Social relationships:** **(+) Paternal psychological control** (Lo Cascio et al., 2015) (-) **Family communication** (Lo Cascio et al., 2013) (-) **Mother and father attachment** (Vignoli, 2009) (-) **Perceived social support*** (Baltacı et al., 2020)	**Personality traits:** **(+) Neuroticism*** (Di Fabio & Palazzeschi, 2013; Germeijs & Verschueren, 2011b; Öztemel, 2014) **(-) Conscientiousness, extroversion** (Germeijs & Verschueren, 2011b; Öztemel, 2014) and **openness** (Germeijs & Verschueren, 2011b) **(+) Anxiety (trait)** (Germeijs & Verschueren, 2011a; Lo Casio et al., 2013; Santos & Ferreira, 2012; Santos et al., 2014; Vignoli, 2015) **(-) Emotional-intelligence (trait)*** (Di Fabio & Saklofske, 2014) **(-) Core-self evaluations** (Di Fabio & Palazzeschi, 2012) **(+) External locus of control** (Santos & Ferreira, 2012; Santos et al., 2014) **Gender:** **(+) Female** (Baltacı et al., 2020; Germeijs & Verschueren, 2011b; Lo Cascio et al., 2013, 2015; Soytürk & Öztürk, 2019; Vignoli, 2009)	**(+) Vocational anxiety** (Lo Cascio et al., 2013; Vignoli, 2015) **(-) Career adaptability** (Ambiel et al., 2018) **(+) Self exploration*** (Ambiel et al., 2018) **(-) Career exploration*** (Ambiel et al., 2018; Vignoli, 2015) **(-) Self-esteem*** (Lo Cascio et al., 2013, 2015; Santos & Ferreira, 2012; Santos et al., 2014; Santos & Gonçalves, 2017; Soytürk & Öztürk, 2019) **(-) Generalized self-efficacy** (Ambiel et al., 2018) (-) **Perceived cognitive failure** (Di Fabio & Palazzeschi, 2013) **(-) Goal instability*** (Santos & Gonçalves, 2017) **(-) Basic psychological needs** (Baltacı et al., 2020) **(-) Meaning in life** (Gómez-Arbeo, 2010)	**(+) Seek career counseling** (Ambiel et al., 2018) **(-) Decision stability** (Germeijs & Verschueren, 2011a)

Note. Only direct relationships that evolve in the same direction (+) or in the opposite direction (-) to the product are collected. *Relationships that predict indecision.

Process variables

Twenty-nine studies (37%) examined the relationship between process variables and career indecision (Table 2), while 11 studies (14%) explored their connection to career indecisiveness (Table 3). These variables include aspects such as vocational exploration, which encompasses self-exploration (self-knowledge) and environmental career exploration (gathering academic and professional information and engaging in relevant experiences). Additionally, self-efficacy has been studied in three distinct forms: self-efficacy in the career decision-making process, self-efficacy in career search, and generalized self-efficacy.

The most studied process variables influencing career indecision are low self-efficacy (9%), low career adaptability (5%), low career maturity (4%), and low career exploration (4%). One study (1%) found that undecided students display greater dispersion in academic interest areas compared to their decided peers (Argyropoulou et al., 2007), although it identified no significant differences in terms of types of vocational interests in career indecision (Lozano & Repetto, 2007). Vocational anxiety has been examined both as a predictor (Şeker, 2020) and as a consequence of indecision (Nalbantoglu-Yilmaz & Cetin-Gunduz, 2018), indicating the need for clearer conceptual delineation.

In addition, five studies (6%) report a positive relationship between occupational indecision and occupational amotivation, socio-familial influence, and other cognitive processes (such as cultural orientation, multipotentiality, perfectionism, and expectations), identifying amotivation as both the sole direct predictor and a mediating variable (Jung & McCormick, 2010). These studies provide empirical support for a model applied to processes associated with university access (Jung, 2013b), gifted adolescents (Jung 2013a; Jung 2018), and economically disadvantaged individuals (Jung & Young, 2017).

The most studied variables related to career indecisiveness are low self-esteem, high vocational anxiety, and low career exploration (Table 3).

Consequences variables

Finally, regarding the consequences, six studies (8%) are related to career indecision (Table 2), and two studies (3%) are associated with career indecisiveness (Table 3). Students with career indecisiveness exhibit greater instability in their choices (Germeijs & Verschueren, 2011a). Similarly, those with career indecision show lower engagement and satisfaction with their studies (Šverko & Babarović, 2019) and an increase in career planning and exploration behaviors (Creed et al., 2007).

Research objective 2: Instruments for measuring career indecision and indecisiveness

The second objective was to analyze the measurement instruments used to evaluate career indecision and indecisiveness in adolescents. Self-report instruments were the most frequently used (87%) (Table 4), and five studies (6%) utilized more than one instrument.

Table 4

Classification of measurement instruments for career indecision and indecisiveness in adolescents

Unidimensional instruments	Studies	Intervention programs
Career Decision Scale (CDS; Osipow, et al., 1976)	11	3
Career Indecision Scale (Teixeira & Magalhães, 2001)*	1	
Indecisiveness Scale (IS; Germeijs & De Boeck, 2002, 2003)*	7	
Indecisiveness Scale (IS; Frost & Shows, 1993)*	6	1
Personal Indecisiveness Scale (Bacanlı, 2000, 2005)*	2	
Career Decision Inventory (CDI; Çakır-Mehmet, 2004)	3	2
Multidimensional instruments		
Career Factors Inventory (CFI; Chartrand et al., 1990)**	1	
Vocational Indecision/Decision (Gómez-Arbeo, 1992)*	1	
Career Decision Making Difficulties Questionnaire (CDDQ; Gati, et al., 1996; Gati & Saka, 2001)#	24	4
Career Decision Profile (Jones & Lohmann, 1998)#	1	
Ideas and Attitudes on School-Career Future High School Version (Soresi & Nota, 2003)	1	1
Emotional & Personality-Related Career Decision-Making Difficulties (EPCD; Saka et al., 2008)*	3	
Coping with career indecision instruments		
Coping with Career Indecision Scale (CCIS; Turan, 2017)		1

Note. Instruments evaluating career indecisiveness(*), instruments measuring both types of indecision (**), and instruments for career indecision including a generalized indecision subscale (#). Without asterisk: instruments exclusively evaluating career indecision.

A total of 13 different measurement instruments were identified. For career indecision, the most commonly applied instruments were the CDDQ (36%), which includes a generalized indecision subscale, and the CDS (18%). For career indecisiveness, the most frequently used instruments were the IS (9%) (Germeijs & De Boeck, 2002, 2003) and the IS (9%) (Frost & Shows, 1993), followed by the CDI (6%) and the EPCD (4%). Additionally, one study (1%) (Pečjak & Košir, 2007) employed the Decision Making Questionnaire (Tuinstra et al., 2000), which focuses on assessing individuals' decision-making styles to examine career indecision. The use of unidimensional and multidimensional instruments was evenly distributed. As an indicator of validity, the number of studies and intervention programs employing these instruments is summarized in Table 4.

Seven of the applied measurement instruments have been adapted for use in 16 countries and translated into their respective languages (Table 5). Among these, the CDDQ, which has been used in 13 countries, retains structures like the original version, though not identical, or does not confirm all factors. This is notably true for the adaptations in Turkish (Bacanlı, 2016), Spanish (Lozano, 2007), Slovenian (Pečjak & Košir, 2007), French (Rochat & Rossier, 2016), and Croatian (Babarović & Šverko, 2016, 2019).

Self-designed surveys were used in seven studies (9%) (Jung, 2013a, 2013b, 2018; Jung & McCormick, 2010; Jung & Young, 2017; Kalalahti et al., 2017; Sabates et al., 2017), and three studies (4%) used interviews (Maree, 2020; Maree & Magere, 2023; Rehfuss & Sickinger, 2015). The Career Construction Interview (Savickas, 2012) has been confirmed as a valuable tool to assist high school students in their career decision-making process and as a pre-screening instrument to identify students requiring more extensive guidance (Rehfuss & Sickinger, 2015).

Table 5

Measurement instruments for career indecision and indecisiveness adapted to other countries and languages: reliability data

Countries	CDS (Osipow et al., 1976)	CDDQ (Gati et al., 1996; Gati & Saka, 2001)	IS (Frost & Shows, 1993)	IS (Germeijs & De Boeck, 2002, 2003)	EPCD (Saka et al., 2008)	CFI (Chartrand et al., 1990)
Albania	.95					
Argentina	.81					
Canada (French)		.94				
China	.73 - .76	.81 - .87				
South Korea		.92				
Croatia		.74 - .92				
France		.91		.84 - .86		
Greece	.80 - .86	.92				
Slovenia		.55 - .93				
Spain		.89 - .91				
Italy	.82	.73 - .93	.85	.83 - .85		.84
Poland		.88				
Portugal	.87 - .90		.80 - .83			
Romania		.80				
Switzerland (Italian)		.91				
Turkey	.86	.82 - .93			.81 - .91	

Note. The minimum and maximum reliability values of the instruments reported in the analyzed studies are included.

Research objective 3: intervention and prevention of career indecision and indecisiveness

The intervention programs identified (18%) were analyzed according to the instruments used, the CIPP-C structure in terms of the variables considered, and the value and impact of career guidance in intervening or preventing career indecision.

In terms of duration, interventions ranged from a single session (Maree, 2020; Rehfuss & Sickinger, 2015) to five months (Culpepper et al., 2015). They were conducted in both group and individual formats, predominantly in-person and within school settings. Two programs were delivered in group and digital formats, focusing on participant engagement and the impact of counselors/mentors. All studies assessed career indecision using a range of measures (Table 4), with the CDS and CDDQ being the most prominent, or through interviews. Data were collected before and after the intervention, but only four studies (5%) included a follow-up after the intervention: three weeks (Ferrari et al., 2012), three months (Rochat & Rossier, 2016), or four months later (Maree, 2020; Turan & Çelik, 2022).

One program addressed career indecisiveness (Di Fabio & Kenny, 2011), but did not establish specific targets to address it. However, three studies (4%) analyzed the intervention's impact on career indecisiveness, suggesting the effectiveness of motivational interviewing and the promotion of emotional intelligence (Di Fabio & Kenny, 2011; Maree, 2020; Rochat & Rossier, 2016).

Most interventions were conducted by counselors, though some involved teachers (Chen et al., 2022) or mentors (Culpepper et al., 2015). Three studies (4%) incorporated family participation (Maree, 2020; Rochat & Rossier, 2016; Taveira et al., 2009) or professionals from various occupational fields (Kutlu & Bedel, 2021). Methodologically, the studies were primarily quasi-experimental, with assignments to experimental and control groups (4%) and case studies (4%) (Maree & Magere, 2023; Rehfuss & Sickinger, 2015; Rochat & Rossier, 2016).

Interviews formed the foundation of several interventions, particularly those based on career construction theory and life design frameworks. These approaches emphasized life history, interpretative processes, and action plans for life projects, demonstrating their effectiveness in addressing career indecision (4%) (Maree, 2020; Maree & Magere, 2023; Rehfuss & Sickinger, 2015). One study (1%) piloted motivational interviewing, adapted from interventions for individuals facing addiction issues in their change process (Rochat & Rossier, 2016).

Addressing context, input, process, and consequence variables, the programs targeted key factors as previously described. Context-related aspects primarily involved support (Ferrari et al., 2012), family communication, peer communication (Taveira et al., 2009), teacher communication (Maree, 2020), and family influence (Maree & Magere, 2023; Shea et al., 2009). Specific programs working with at-

risk students also considered topics absent in other interventions, such as sexism, racism in the workplace, migrant experiences, cultural context, and skills training for applying to study or financial aid or seeking employment (Culpepper et al., 2015; Shea et al., 2009). Additionally, the interventions reduced the social stigma associated with career counseling in certain groups.

In the intervention programs reviewed (Table 6), the most prominent process variables include self-exploration (14%) and career exploration (13%). Self-exploration encompasses activities such as identifying interests, reflecting on autobiographical information, understanding personality, evaluating skills, exploring academic self-concept, clarifying values and aspirations, and promoting reflection and self-awareness. Career exploration involves investigating career options, occupational groups, academic pathways and study opportunities, transitioning to post-secondary education, and accessing guided information about universities and the labor market.

To address the consequences of vocational indecision, several programs also focus on action planning (8%) (Chen et al., 2022; Gu et al., 2020; Maree, 2020; Maree & Magere, 2023; Rochat & Rossier, 2016; Taveira et al., 2009), selecting subjects and academic pathways (4%) (Chen et al., 2022; Ferrari et al., 2012; Gu et al., 2020), and career choice (3%) (Gu et al., 2020; Maree & Magere, 2023). Additionally, they address the anticipation of challenges, solutions, barriers, and available resources for decision-making (3%) (Shea et al., 2009; Taveira et al., 2009), and the development of coping strategies (4%) (Rochat & Rossier, 2016; Shea et al., 2009; Taveira et al., 2009).

Table 6

Process variables addressed in each program

Variable	Atli (2016)	Chen et al. (2022)	Culpepper et al. (2015)	Di Fabio y Kenny (2011)	Ferrari et al. (2012)	Gu et al. (2020)	Kutlu y Bedel (2021)	Maree (2020)	Maree y Magere (2023)	Rehfuss y Sickinger (2015)	Rochat y Rossier (2016)	Shea et al. (2009)	Taveira et al. (2009)	Turan y Çelik (2022)
Self-exploration	X	X	X		X	X		X	X	X	X	X	X	
Career exploration	X	X			X	X	X	X	X			X	X	X
Career maturity/ Career adaptability	X	X								X				X
Ability-based emotional intelligence				X										

Variable	Atli (2016)	Chen et al. (2022)	Culpepper et al. (2015)	Di Fabio y Kenny (2011)	Ferrari et al. (2012)	Gu et al. (2020)	Kutlu y Bedel (2021)	Maree (2020)	Maree y Magere (2023)	Rehfuss y Sickinger (2015)	Rochat y Rossier (2016)	Shea et al. (2009)	Taveira et al. (2009)	Turan y Çelik (2022)
Self-esteem			X											
Academic achievements			X					X						
Hope					X									
Optimism					X									
Self-efficacy					X	X		X				X	X	
Irrational beliefs					X		X		X		X		X	
Motivation														X
Time perspective				X	X	X						X		X
Career goals					X									

The inclusion of key resources in career counseling processes, as outlined by Brown et al. (2003) and Whiston et al. (2017), is illustrated in Figure 2. However, several studies do not provide detailed information on this aspect (Di Fabio & Kenny, 2011; Gu et al., 2020; Turan & Çelik, 2022).

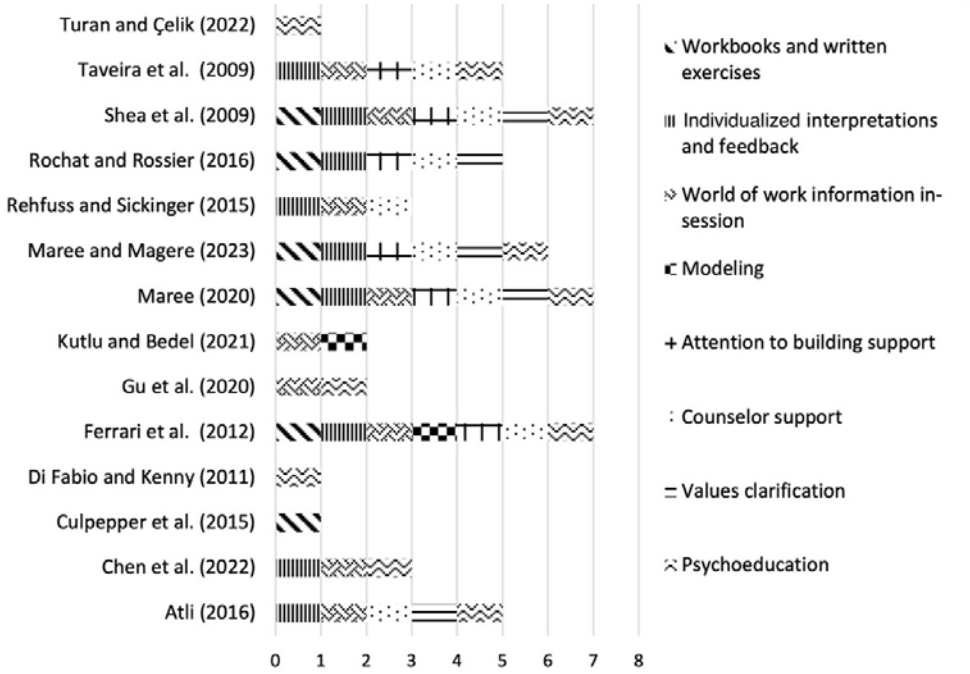
a) Vocational information exploration during sessions: searching for and analyzing academic and professional information.
b) Written tasks and exercises: encouraging participants to analyze their work while promoting active participation and enhancing their self-efficacy.
c) Value clarification: reflective self-exploration exercises and joint reading of reflections.
d) Building support: involving the family, either directly or by analyzing their influence (roles, occupations, values), and/or including teachers, friends, and partners. This involves identifying barriers and resources.
e) Individualized interpretations and feedback: developing coping skills and strategies, accompanied by personal progress monitoring and goal formulation.
f) Counselor support: facilitating dialogue about the relationship between information and plans, addressing doubts, and complementing this with participant evaluations.

Although not explicitly listed as a key component, sociocultural topics are also addressed. Additionally, Ferrari et al. (2012) emphasize the importance of curiosity,

persistence, optimism, and risk-taking. Providing opportunities for contact with the professional world is also significant, particularly for the modeling component.

Figure 2

Key components in career counseling



DISCUSSION AND CONCLUSIONS

The purpose of this scoping review was to describe research on career indecision and indecisiveness, the associated variables, the instruments used for their measurement, and intervention programs targeting students in their final years of secondary education and VET. By addressing these three aspects simultaneously, this review provides a comprehensive perspective on contextual, social, and personal factors. The analysis applied the CIPP-C method, which allows for future research to hypothesize potential causal relationships among identified variable systems, marking one of the study's main contributions.

The first objective was to conceptualize the variables associated with career indecision and indecisiveness. Findings align with existing literature (Gati et al., 1996; Saka et al., 2008), emphasizing personality traits, particularly neuroticism

(Martincin & Stead, 2015); process-related self-efficacy for career indecision; and self-esteem for career indecisiveness (Udayar et al., 2020). Career exploration (Kleine et al., 2021) was also identified as critical, especially as many adolescents revised their aspirations following their experiences during the pandemic (Carey et al., 2023). Vocational anxiety and career adaptability were significant, particularly during transitional stages marked by rapid social change (Leung et al., 2022).

Additional factors include motivation, which is particularly relevant to career indecision, and anxiety and emotional intelligence traits, which are more pertinent to career indecisiveness. Adolescent girls, who reported increased feelings of loneliness during and after the pandemic (Jen et al., 2024), experienced career indecisiveness more often. While most research has focused on the antecedents of vocational indecision, fewer studies have examined its consequences or its impact on vocational decision-making (Bian, 2023).

Among contextual factors, parental figures stand out as primary sources of career guidance during the pandemic (Carey et al., 2023). However, no studies addressed other significant figures, such as teachers (Wong et al., 2021) or peer support (Carey et al., 2023; Lent & Brown, 2020). Positive interpersonal relationships were crucial for coping during and after the pandemic and for future decision-making (Carey et al., 2023). Maree (2022) emphasized that being part of and guided by one's community is vital for successful interventions.

There is a need for further research into how macro-level factors, such as globalization, migration, neoliberalism, and natural resource exploitation, affect young people's academic, professional, and life projects (Nota et al., 2020; Pryashantha et al., 2022). These influences were particularly evident in the post-pandemic context (Carey et al., 2023). Savickas (1995) highlighted the importance of contextualizing career indecision and incorporating individuals' subjective experiences and career adaptability. Some reviewed studies also identify factors such as hope, future orientation, well-being, life satisfaction, and optimism (Charokopaki & Argyropoulou, 2019; Ferrari et al., 2010; Parola & Marcionetti, 2022; Şeker, 2020; Zaleszczyk & Kot, 2015), which are significant in the post-pandemic context.

Career indecisiveness has received less research attention. Traditional vocational theories viewed uncertainty as a temporary process that could be minimized through proper planning, assuming career paths were predictable (Nota et al., 2020). However, career indecisiveness requires addressing personal and socio-contextual uncertainties as well as the emotional difficulties individuals face. This includes understanding the influence of immediate factors (family and school) and distal factors (political, economic, and environmental) on young people.

The second objective was to analyze the tools used to assess career indecision and career indecisiveness. The psychometric characteristics of the reviewed instruments demonstrated reliability and cross-cultural validity. However, there

was limited representation of populations from Africa and South America, as noted in previous studies (Levin et al., 2023; Xu & Bhang, 2019). Instruments for career indecisiveness have fewer adaptations compared to those for career indecision, leading to a greater number of country-specific tools (Bacanlı, 2000, 2005; Çakır-Mehmet, 2004; Gómez-Arbeo, 1992; Teixeira & Magalhães, 2001). Narrative interviews have also proven diagnostically valid (Maree, 2020; Maree & Magere, 2023; Rehfuss & Sickinger, 2015).

The third objective addressed intervention programs for career indecision and career indecisiveness. Effective interventions for career indecision typically focus on psychoeducation, vocational information, and psychosocial aspects (Maree & Magere, 2023). These programs use measurement tools to identify individual difficulties and assess the impact of interventions. However, most of the reviewed studies did not include follow-ups, limiting knowledge of the long-term effectiveness of interventions.

No specific intervention studies on career indecisiveness were identified. This may be due to confusion surrounding constructs (Bian, 2023) or an overlap between career counseling and clinical therapy processes (Lent & Brown, 2020). Collaboration between these fields is crucial for addressing career indecisiveness (Blustein et al., 2019). Emotional intelligence training was highlighted as a key area, helping regulate emotions, cope with stress, and improve mental health and interpersonal relationships (Pena Garrido, 2024).

Our findings align with Amaral et al. (2023), who emphasized the lack of research on the relationship between vocational indecision, depression, and negative thoughts among adolescents. This is especially important given the rise in mental health challenges and post-pandemic vocational uncertainties (Jen et al., 2024; Malinić et al., 2024), particularly in at-risk populations (Gittings et al., 2021). Internationally, career counselors are observing the impact of these factors on decision-making processes and problem-solving (Marks et al., 2021). Professionals need to support young people from an individual and inclusive perspective, addressing current risks (Di Maggio et al., 2021).

Digital resources remain underutilized in vocational interventions, despite their increased use during the pandemic (Chen et al., 2022). These resources focus on career exploration, self-reflection, and promoting students' active roles in designing and developing their academic and professional projects (Requejo Fernández et al., 2022). The limited use of digital tools may be due to a lack of protocols for their appropriate and ethical application, as noted by Borbély-Pecze and Gyöngyösi (2024), or the need for better training among educators to enhance their digital competencies (García-Ruiz et al., 2023).

Interventions targeting VET students were notably absent, despite high dropout rates in this group. Programs tailored to these students and further research on

this stage of education are urgently needed. Romero-Rodríguez et al. (2022) suggest creating synergies between education systems and companies to support the school-to-work transition, providing workplace-based learning opportunities, and fostering interpersonal skills and active methodologies that encourage critical thinking, discovery and the identification of real challenges from a collective, socially fair and ethical perspective.

Lastly, the review highlighted the limited representation of studies that have a more global and inclusive vision, i.e. that consider cultural aspects, gender, migrant or economically disadvantaged populations. As noted by Bian (2023), the prevalence of quantitative studies limits understanding of individuals' lived experiences with vocational indecision and the exploration of contextually current relevant factors, especially for VET students. Additionally, recent research on vocational indecision in Spanish remains scarce, likely due to traditional educational priorities that focus on academic performance and dropout prevention over other guidance needs.

Theoretical and practical implications

Contemporary career guidance requires addressing uncertainty, emotional identification and management, training self-management skills, adapting to change, and fostering a sustainable future (Di Maggio et al., 2021; Echeverría & Martínez-Clares, 2024; Lent & Brown, 2013; Santilli et al., 2020). It also necessitates consideration of factors such as culture and gender (Santilli et al., 2020; Tian & Hou, 2023), as academic and career expectations are largely shaped by cultural, social, and individual expectations.

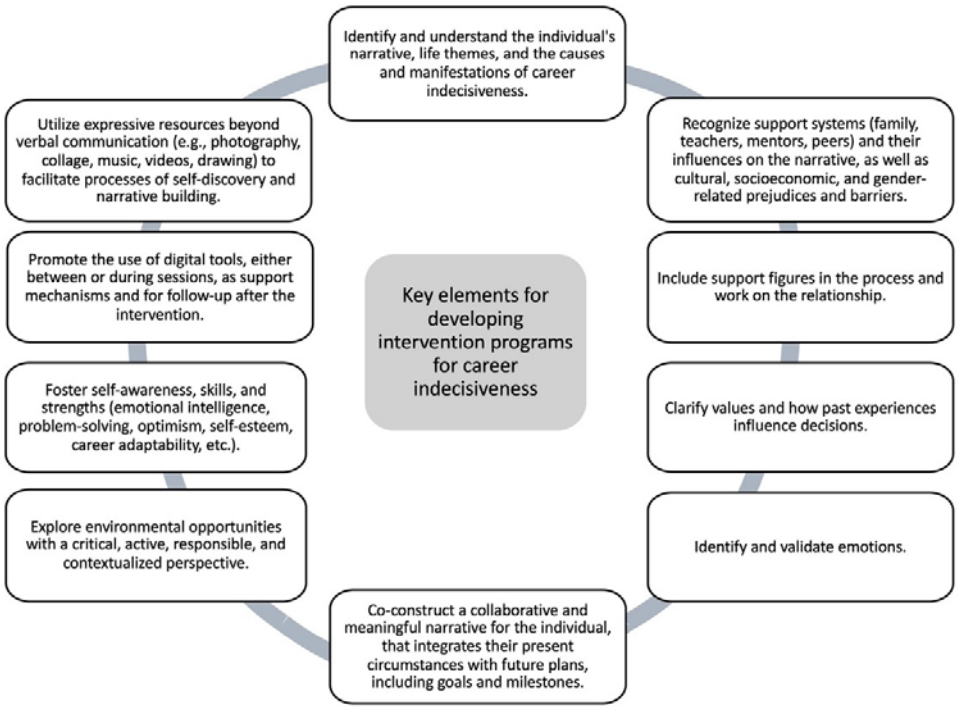
To achieve this, it is essential to gather annual information about students' processes. This allows educators to adapt to the evolving realities of maturing students and contextual factors, cultivating their sense of control, responsibility in decision-making, active participation in society, and capacity to anticipate and solve potential problems (Hernández-Franco, 2019; Parola & Marcionetti, 2022). Furthermore, community-based interventions can help young people feel like active agents through dialogue, reflection, and guidance, involving families, alumni, and local professionals (Barnes et al., 2020; Gu et al., 2020).

Based on this review, we propose the CIPP-C model as a conceptual framework to guide the variables to be included in future intervention programs. Specifically for career indecisiveness, we recommend a narrative, cognitive-behavioral, and systemic approach, focusing on the dynamism of identity and its influences during transitions. This approach activates personal resources to address present challenges and opportunities while preparing individuals for the future with a critical, supportive, meaningful, and empowered perspective.

By combining these approaches, interventions can more effectively support the reconstruction of personal and academic-professional narratives, promoting the adjustment and strengthening of the systems that influence the individual. Therefore, as a synthesis of our review, we propose considering the key components for intervention programs outlined in Figure 3.

Figure 3

Key elements for developing intervention programs for career indecisiveness



Limitations and future research

This study has some limitations. For example, the integration of different methodological approaches and measurement instruments restricts the generalizability of the results. Additionally, by including only peer-reviewed articles published in journals, relevant work, such as grey literature, may have been excluded. Finally, regarding the multidimensional measurement instruments, the relationship

between their subscales and career indecision and career indecisiveness has not been analyzed in detail.

We highlight several areas of interest for future research. These include studies employing qualitative and mixed methods to capture the subjective experiences of students with vocational indecision in the context of globalization, climate emergencies, and health crises. Research focusing on indecision among VET students is also needed, as is the application of evidence-based intervention protocols for those with more persistent indecision (indecisiveness). Furthermore, implementing academic and career guidance actions in digital formats, leveraging the opportunities offered by AI, represents a promising avenue for exploration.

This review provides a model for gathering and analyzing information which can facilitate the development of new intervention protocols based on the identified variables, existing programs, and instruments for evaluating career indecision and career indecisiveness. Moreover, in the post-pandemic socio-educational context, addressing career indecisiveness is particularly important, as it affects adolescents' mental health, self-esteem, and future outlooks. A shift is needed from short-term solutions to the development of long-term support systems within the framework of lifelong guidance, enabling interventions to adopt a systemic and eco-social perspective. We hope that this review will be useful for educators, counselors, and policymakers.

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APPENDIX

Table A1

Variables analyzed in the review: Codebook

Variable	Code
Objective	(1) To study the relationship between career indecision and other factors; (2) to identify the process that predict career indecision; (3) to recognize the variables that explain the intention to seek career counseling; (4) to study the effectiveness of interventions for career indecision and decision-making difficulties, among other factors.; (5) to adapt and validate career indecision scales; (6) to examine the relationship between career indecisiveness and other factors; (7) to analyze the predictive effect of different factors in career indecisiveness; (8) to examine the differences between decided and undecided students; (9) to analyze the predictive effect of career planning/exploration; (10) to analyze factors that can affect career interests and expectations; (11) to evaluate an emotional intelligence program; (12) to examine time perspective and its relationship with other variables; (13) to study the effectiveness of an intervention aimed at fostering time perspective and career decidedness; (14) to study the predictive validity of career indecisiveness in post-decisional problems; (15) to study cognitive processes associated with occupational indecision in gifted adolescents; (16) to study career decision-making processes associated with university access.; (17) to study career indecision in economically disadvantaged individuals; (18) to analyze changes in attitudes, experiences, and interests during the final year of school, based on place of origin, aspirations, and gender; (19) to consider the value of interviews in academic and career counseling services.; (20) to identify different motivational profiles; (21) to study the potential consequences of career indecision and indecisiveness; (22) to identify decidedness-indecisiveness profiles; (23) to develop and evaluate the effectiveness of a vocational intervention tailored to linguistic and cultural issues for migrant students; (24) to study career development in students; (25) to evaluate the applicability of career construction model of adaptation for explaining after-school career transition in adolescence
Educational Stage (ES)	(1) High School (upper secondary); (2) Vocational education and training (VET)
Participants (P)	(1) Mixed (females and males); (2) Females; (3) Males; (4) Students; (5) Parents; (6) Teachers/mentors
Intervention type (IT)	(1) Group; (2) Individual
Method	(1) Mixed; (2) Quantitative; (3) Qualitative
Research design (RD)	(1) Non experimental; (2) Experimental; (3) Quasi-experimental; (4) Transversal; (5) Longitudinal; (6) Group (cohort) evolution; (7) Comparison of pre-post measures; (8) Descriptive/Exploratory; (9) Grounded theory; (10) Narrative; (11) Instrument design; (12) Single case

Variable	Code
Data collection tool	(1) Assessment measure; (2) Interview; (3) Other documents (grades, reports, autobiography…)
Indecision	(1) Career indecision (2) Career indecisiveness (3) Unidimensional; (4) Multidimensional
Study dimensions (variables)	(1) Sociodemographic data (gender, age, educational year group, ethnicity…); (2) personality traits; (3) seek career counseling; (4) career adaptability; (5) career decision-making self-efficacy; (6) career exploration; (7) optimism; (8) strategies for coping with career indecision; (9) generalized self-efficacy; (10) coping strategies; (11) vocational interests; (12) career maturity; (13) basic psychological needs; (14) perceived social support; (15) self-esteem; (16) ability-based emotional intelligence; (17) fluid intelligence; (18) self-evaluation; (19) decision-making styles; (20) cognitive failures; (21) trait emotional intelligence; (22) time perspective; (23) hope; (24) trait anxiety; (25) commitment to the choice; (26) choice stability; (27) career decisional tasks (orientation, self-exploratory and broad exploratory behavior, decisional status); (28) academic procrastination; (29) social support; (30) career self-efficacy; (31) allocentrism- family; (32) occupational intention; (33) idiocentrism-future; (34) social influence-family; (35) occupational amotivation; (36) multipotentiality; (37) information on university access; (38) income due to university study; (39) expectancy for university success; (40) interest/enjoyment of University study; (41) indecision with university entry; (42) desirable occupation; (43) perfectionism; (44) recognition from others; (45) living up to potential; (46) determination of transition; (47) difficulties in learning and studying; (48) bullying; (49) upper secondary and career choice; (50) family adaptability and family cohesion; (51) parental style; (52) worry; (53) emotional distress; (54) irrational beliefs about career choice; (55) family communication; (56) parental psychological control; (57) parental support; (58) vocational anxiety; (59) amotivation to access university; (60) autonomy for career decision making; (61) parental career-related behaviors; (62) occupational expectations; (63) perceived career barriers; (64) self-regulation; (65) life satisfaction; (66) vocational identity; (67) locus of control; (68) goal instability; (69) mental well-being; (70) linguistic identity; (71) physical activity; (72) attachment to mother and father; (73) hope for success; (74) work values; (75) study satisfaction; (76) scores/academic achievements; (77) meaning in life; (78) occupational discrepancies; (79) over-parenting; (80) female role stress; (81) conformity to feminine norms; (82) career goals; (83) participation in extracurricular activities; (84) school appreciation; (85) trust in education; (86) vocational orientation; (87) maximizing tendencies; (88) vocational development; (89) occupational aspirations; (90) quality of program implementation; (91) attendance; (92) family influence; (93) value thoughts of family; (94) expectancy for occupational success; (95) salary/ occupational income
Data analysis	(1) Statistical-descriptive analysis; (2) Univariate/bivariate analysis; (3) Multivariate analysis; (4) Content analysis; (5) Exploratory/confirmatory factor analysis; (6) Correlational/Inferential analysis; (7) Discriminant analysis

Table A2

References and analysis of the selected studies applying the codes from Table A1

Author(s)	Objective	ES	P	IT	Method	RD	Instruments	Indecision	Dimensions	Analysis
1. Ambiel et al. (2018)	1; 2; 3	1	1; 4	-	2	1; 4; 8	1	1; 3	1; 2; 3; 4; 5; 6	1; 3
2. Argyropoulou et al. (2007)	1	1	1; 4	-	2	1; 4; 8	1	1; 3	9; 10; 11	3; 5
3. Arslan et al. (2022)	1	1	2; 4; 5	-	2	1; 4; 8	1	1; 3	1; 79; 80; 81; 87	3; 6
4. Atli (2016)	4	1	1; 4	2	2	3; 7	1; 2; 3	1; 3	12	2; 4
5. Azpilicueta et al. (2019)	5	1	1; 4	-	2	1; 4; 8	1	1; 2; 3; 4	1	1; 5
6. Babarović y Šverko (2016)	24	1	1; 4	-	2	1; 4; 8	1	1; 4	1; 4; 88	1; 5; 6
7. Babarović y Šverko (2019)	5	1	1; 4	-	2	1; 4; 8	1	1; 4	5; 88	1; 3; 5
8. Bacanlı (2016)	5; 8	1	1; 4	-	2	1; 4; 8	1	1; 4	1	1; 3; 5
9. Baltacı et al. (2020)	6; 7	1	1; 4	-	2	1; 4; 8	1	2; 4	1; 13; 14	1; 2; 6; 7
10. Charokopaki y Argyropoulou (2019)	1	1	1; 4	-	2	1; 4; 8	1	1; 3	1; 5; 7	1; 3
11. Chen et al. (2022)	4	1	1; 4	1	2	3; 7	1	1; 4	1; 12; 66	1; 3; 6
12. Creed et al. (2007)	9	1	1; 4	-	2	1; 5; 6	1	1; 3	1; 5; 12; 15	1; 2; 3
13. Culpepper et al. (2015)	4	1	1; 4; 6	1	2	3; 7	1; 2; 3	1; 3	15; 76; 90; 91	1; 2
14. Denault et al. (2019)	1	1	1; 4; 5	-	2	1; 5; 6	1; 2	1; 3	1; 6; 83	1; 3; 5
15. Di Fabio y Kenny (2011)	4; 11	1	1; 4	1	2	2; 7	1	1; 2; 3; 4	16	1; 2
16. Di Fabio y Palazzeschi (2012)	1	1; 2	1; 4	-	2	1; 4; 8	1	1; 2; 3; 4	2; 17; 18; 19	1; 3; 6
17. Di Fabio y Palazzeschi (2013)	1	1; 2	1; 4	-	2	1; 4; 8	1	2; 3	2; 17; 20	1; 3; 6

Author(s)	Objective	ES	P	IT	Method	RD	Instruments	Indecision	Dimensions	Analysis
18. Di Fabio y Saklofske (2014)	1; 6	1	1; 4	-	2	1; 4; 8	1	1; 2; 3; 4	2; 5; 16; 17; 21	1; 3; 6
19. Duru (2022)	1	1; 2	1; 4	-	2	1; 4; 8	1	1; 4	5; 12	1; 2; 3; 6
20. Duru et al. (2021)	1	1	1; 4	-	2	1; 4; 8	1	1; 4	2; 5	1; 3; 6
21. Ferrari et al. (2010)	1; 12	1	1; 4	-	2	1; 4; 8	1	1; 4	1; 22	1; 2; 3; 6
22. Ferrari et al. (2012)	4; 13	-	1; 4	1	2	3; 7	1	1; 4	7; 22; 23	1; 2
23. Germeijs y Verschueren (2011a)	14	1	1; 4	-	2	3; 5; 7	1	2; 3	24; 25; 26	1; 3; 5; 6
24. Germeijs y Verschueren (2011b)	6; 14	1	1; 4	-	2	3; 5; 7	1	2; 3	2; 27	1; 3; 6
25. Gómez-Arbeo (2010)	6	1	1; 4	-	2	1; 4; 8	1	2; 4	1; 77	2; 3; 6
26. Grigor y Turda (2022)	6	1	1; 4	-	2	1; 4; 8	1	1; 4	7; 74	5
27. Gu et al. (2020)	4	1	1; 4	1	2	3; 7	1	1; 4	1; 5	1; 2; 6
28. Günes y Owen (2020)	1	1	1; 4	-	2	1; 4; 8	1	1; 3	1; 28	2; 6
29. Jemini-Gashi et al. (2021)	1	1	1; 4	-	2	1; 4; 8	1	1; 3	1; 29; 30	1; 3; 6
30. Jung (2013a)	15	1	1; 4	-	2	1; 4; 8	1	1	1; 31; 32; 33; 34; 35; 36; 43	1; 3; 5; 6
31. Jung (2013b)	16	1	1; 4	-	2	1; 4; 8	1	1	1; 34; 37; 38; 39; 40; 41; 42; 59	1; 3; 5; 6
32. Jung (2018)	15	1	1; 4	-	2	1; 4; 8	1	1	1; 31; 33; 34; 35; 36; 43	1; 3; 5
33. Jung y McCormick (2010)	1	1	1; 4	-	2	1; 4; 8	1; 2	1	1; 11; 34; 35; 44; 94; 95	1; 3

Author(s)	Objective	ES	P	IT	Method	RD	Instruments	Indecision	Dimensions	Analysis
34. Jung y Young (2017)	2; 17	1	1; 4	-	1	9; 11	1; 2	1	1; 35; 36; 45; 92; 93	1; 3; 4; 5
35. Kalalahti et al. (2017)	2; 18	1	1; 4	-	2	1; 4; 8	1	1	1; 46; 47; 48; 49; 84; 85; 86; 89	1; 3
36. Karacan-Ozdemir (2019)	1	1	1; 4	-	2	1; 4; 8	1	1; 4	1; 4	1; 3; 6
37. Kirdök y Harman (2018)	1	1	1; 4	-	2	1; 4; 8	1	1; 4	67	1; 2
38. Kirdök y Korkmaz (2018)	2	-	1; 4	-	2	1; 4; 8	1	1; 4	2; 16	3; 6
39. Koumoundourou et al. (2010)	1	1	1; 4	-	2	1; 4; 8	1	1; 4	18; 50; 51	1; 3; 6
40. Kulcsár et al. (2020)	1	1	1; 4	-	2	1; 4; 8	1	1; 4	1; 52; 53	1; 3; 6
41. Kutlu y Bedel (2021)	4	1	1; 4	1	2	3; 7	1	1; 3	1; 54	1; 2
42. Lo Cascio et al. (2013)	6	1; 2	1; 4	-	2	1; 4; 8	1	2; 3	1; 15; 24; 55	1; 3; 6
43. Lo Cascio et al. (2015)	6	1	1; 4	-	2	1; 4; 8	1	2; 3	1; 15; 56	1; 2; 3
44. Lo Presti et al. (2017)	5	1	1; 4	-	2	1; 4; 8	1	1; 2; 3; 4	24	1; 5
45. Lozano (2007)	5	1; 2	1; 4	-	2	1; 4; 8	1	1; 4		5
46. Lozano y Repetto (2007)	1	1; 2	1; 4	-	2	1; 4; 8	1	1; 4	11	1; 3
47. Marcionetti y Rossier (2016)	1	1; 2	1; 4	-	2	1; 4; 8	1	1; 4	2; 14; 15; 57;	1; 3; 6
48. Maree (2020)	4; 19	1	3; 4	2	1	10; 12	1; 3	1	6; 11; 30; 76; 92	4; 6
49. Maree y Magere (2023)	4; 19	1	1; 4	1	3	10; 12	1; 2; 3	1	6; 93	4
50. Nalbantoglu-Yilmaz y Cetin-Gunduz (2018)	1	1	1; 4	-	2	1; 4; 8	1	1; 3	58	3; 6

Author(s)	Objective	ES	P	IT	Method	RD	Instruments	Indecision	Dimensions	Analysis
51. Nota et al. (2007)	1	1; 2	1; 4	-	2	1; 4; 8	1	1; 3	30; 57	1; 3; 6
52. Öztemel (2013)	5	1; 2	1; 4	-	2	1; 4; 8	1	2; 4	1	1; 2; 3; 5
53. Öztemel (2014)	6	1	1; 4	-	2	1; 4; 8	1	2; 3; 4	1; 2; 15	1; 3; 6
54. Paixão y Gamboa (2017)	20	1	1; 4	-	2	1; 4; 8	1	1; 3	1; 6; 60	1; 3; 6
55. Paixão y Gamboa (2022)	1; 2	1	1; 4	-	2	1; 4; 8	1	1; 3	6; 60	1; 3; 6
56. Parola et al. (2023)	1	1	1; 4	-	2	1; 4; 8	1	1; 4	61	1; 5
57. Parola y Marcionetti (2022)	1	1	1; 4	-	2	1; 4; 8	1	1; 4	4; 61; 65	1; 2; 3; 6
58. Patton y Creed (2007a)	1; 10	1	1; 4	-	2	1; 4; 8	1	1; 3	5; 12; 62; 63; 89	6; 7
59. Patton y Creed (2007b)	10	1	1; 4	-	2	1; 4; 8	1	1; 3	1; 12; 15; 62; 82; 76; 78; 89	1; 2; 6
60. Pečjak y Košir (2007)	2; 8	1	1; 4	-	2	1; 4; 8	1	1; 4	2; 64; 65	1; 2; 3; 7
61. Pečjak et al. (2019)	2	1; 2	1; 4	-	2	1; 4; 8	1	1; 4	49	1; 3; 5; 6
62. Rehfuss y Sickinger (2015)	1; 19	1	1; 4	1; 2	3	5; 7; 10; 11	1; 3	1	1; 12; 63; 64	4
63. Rochat y Rossier (2016)	19	1	3; 4	1	3	7; 12	1; 2	1; 4	68; 78	4
64. Sabates et al. (2017)	21	1	1; 4;	-	2	1; 5; 6	1	1	1; 25; 63; 76; 92; 95	1; 6
65. Santos y Ferreira (2012)	6	1	1;4	-	2	1; 4; 8	1	2; 3	15; 24; 66; 67	1; 3
66. Santos et al. (2014)	22	1	1; 4	-	2	1; 4; 8	1	2; 3	15; 24; 49; 66; 67	1; 7
67. Santos y Gonçalves (2017)	6; 7	1	1; 4	-	2	1; 4; 8	1	2; 3	15; 68	1; 3
68. Şeker (2020)	1	1	1; 4	-	2	1; 4; 8	1	1; 3	58; 69	1; 6; 3

Author(s)	Objective	ES	P	IT	Method	RD	Instruments	Indecision	Dimensions	Analysis
69. Shea et al. (2009)	4; 23	1	1; 4	1	2	3; 7	1; 2	1; 3	3; 5	1; 2
70. Sovet et al. (2017)	1	1	1; 4	-	2	1; 4; 8	1	1; 4	70	1; 2; 5
71. Sovet y Metz (2014)	1	1	1; 4	-	2	1; 4; 8	1	1; 4	5; 51	1; 3; 6
72. Soytürk y Öztürk (2019)	6	1	1; 4	-	2	1; 4; 8	1	2; 3	1; 15; 71	1; 2; 3; 6
73. Šverko y Babarović (2019)	25	1	1; 4	-	2	1; 4; 5; 8	1	1; 4	2; 4; 18; 25; 75; 76; 88	1; 2; 3; 6
74. Taveira et al. (2009)	4	1	1; 5	1	2	3; 7	1	1; 3	6	1; 2
75. Turan y Çelik (2022)	4	1	1; 4	1	2	3; 7	1		4; 8	1; 2; 5
76. Vignoli (2009)	6	1	1; 4	-	2	1; 4; 8	1	2; 3	15; 72	1; 3
77. Vignoli (2015)	6; 7	1	1; 4	-	2	1; 4; 8	1	2; 3	6; 24; 58	1; 3; 6
78. Zaleszczyk y Kot (2015)	1	1	1; 4	-	2	1; 4; 8	1	1; 4	73	1; 2; 3