

The Identification and Validation of Five Types of Career Indecision: A Latent Profile Analysis of Career Decision-Making Difficulties

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Diagnosing the causes of clients' career indecision is among the first steps in career counseling. The present study applied latent profile analysis to identify career indecision types using the 10 difficulty scale scores of the Career Decision-Making Difficulties Questionnaire (Gati et al., 1996). In two random U.S. samples ($N_{\text{total}} = 8,918$; age range = 14–50), five profiles of career indecision were identified and replicated: (1) *unmotivated* (6%), (2) *generally indecisive* (31%), (3) *unrealistic* (12%), (4) *uninformed* (39%), and (5) *conflicted* (12%). Age and gender negligibly predicted career indecision type, thereby supporting the stability of the five-profile typology. Nonetheless, the female gender was associated with a greater likelihood of being classified as *indecisive* as opposed to *unmotivated* ($OR = 2.13$). Furthermore, the five types differed in career decision status ($\eta^2 = .28$) and perceived career decisional distress ($\eta^2 = .29$). *Uninformed* and *conflicted* individuals reported multiple career decision-making difficulties and were still considering many career alternatives, whereas the three remaining types had one salient difficulty and had already identified a few (or even one) preferred alternative(s). Typological classification of individuals based on their salient causes of career indecision facilitates intervention planning as well as prescreening clients for individual counseling or group interventions.

Public Significance Statement

This study identified five types of individuals distinguished by their salient causes of career decision-making difficulties. Ascertaining clients' type of career indecision enables tailoring the career counseling process to their specific needs.

Keywords: career indecision, career decision-making difficulties, career decision status, person-centered research, latent profile analysis

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Helping clients overcome career decision-making difficulties and make satisfying career decisions is one of the primary goals of counseling psychology research and practice (Oh et al., 2017; Savickas & Baker, 2005). To tailor treatment to clients' specific career-related problems, counseling psychologists often begin by assessing career indecision (Brown & Ryan Krane, 2000; Gati & Levin, 2014), which is often used to refer to individuals' degree of decidedness (e.g., Kelly & Lee, 2002; Xu & Bhang, 2019) or the causes of their difficulties in making career decisions (e.g.,

Gati et al., 1996; Osipow, 1999). At present, the dominant approach for assessing the causes of career indecision involves taxonomies that include cognitive (e.g., lack of information; Creed et al., 2004), emotional (e.g., anxiety; Hacker et al., 2013), and personality-related (e.g., indecisiveness; Saka et al., 2008) factors. An alternative, complementary approach focuses on identifying types of career indecision that capture meaningful differences across relevant variables to differentiate among homogenous subgroups (e.g., Kelly & Pulver, 2003; Lucas & Epperson, 1990; Savickas & Jarjoura, 1991).

Developing typologies of career indecision contributes to a phenomenological understanding of career indecision and facilitates further investigation of their associations with other variables (Kim et al., 2021; Perera & McIlveen, 2017). In addition, a typological approach can support intervention planning, providing feedback to clients, as well as prescreening and placement of prospective clients in one-on-one counseling or group interventions (Gordon, 1998; Kelly & Pulver, 2003; Savickas & Jarjoura, 1991). However, integrating such typologies in research and practice remains rather limited, likely as the various typologies of career indecision are only partially consistent with one another, they suffer from poor replicability, and they fail to show meaningful predictive validity (Brown & Rector, 2008; Kelly & Pulver, 2003; Santos & Ferreira, 2012). Furthermore, implementing some of the typologies involves

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administering a large battery of measures (e.g., Holland & Holland, 1977; Wanberg & Muchinsky, 1992). Thus, to utilize the supplementary advantages of a typology of career indecision, there is a need to develop a more robust diagnostic procedure for the assessment of career indecision types.

As replication is one of the core principles of science, in the present research, we employed latent profile analysis (LPA) to identify groups of individuals based on the similarity of the causes of their career indecision by randomly dividing a diverse, American sample of individuals deliberating about their career decision ($N = 8,918$) into two subsamples. To offer a more parsimonious procedure to assess career indecision types and improve the practical value of the identified typology, career indecision types were derived from participants' responses to a single, though multidimensional, assessment of the causes of career indecision: The Career Decision-Making Difficulties Questionnaire (CDDQ; Gati et al., 1996). To validate the identified types, their associations with demographic variables, career decision status, and decisional distress were also examined.

Career Indecision Types: Between Consequences and Causes

The present research adopted the view that *career indecision* denotes the problems and difficulties individuals encounter in the process of career decision-making, focusing on the causes of career indecision (e.g., "the problems individuals may have in making career decisions"; Gati et al., 1996, p. 510). However, the literature has also considered career indecision to refer to individuals' career decision status (e.g., "the inability to specify an educational or occupational choice"; Kelly & Lee, 2002, p. 322), or to differentiate it from career indecisiveness (e.g., "a developmental phase through which individuals may pass on their way to reaching a decision"; Osipow, 1999, p. 147). At the same time, scholarly work on career indecision has encompassed discussions of client types with career-related problems emerging from practice (e.g., Bordin, 1946), empirical investigations of variables differentiating career-decided from undecided individuals (e.g., Holland & Holland, 1977), development of career indecision measures (e.g., Osipow et al., 1976), and clustering studies that identified career indecision types (e.g., Lucas & Epperson, 1990). Thus, in previous discussions of career indecision, the *causes* of difficulties in career decision-making and their *consequences* have been often confounded.

The first discussions of *career indecision types* were derived from scholars' counseling experience and observation of clients. Bordin (1946) proposed four types of career-undecided clients based on their dominant cause of career indecision (*dependence*, *lack of information*, *self-conflict*, and *choice anxiety*; in addition to a *no problem* type). In comparison, Jones and Chenery's (1980) three-dimensional model of vocational decision status integrated, in addition to individuals' reasons for experiencing career indecision, also their degree of decidedness and comfort level (i.e., feelings about being undecided). In addition to theoretical discussions of career indecision types, the early empirical work on career indecision adopted a simplistic dichotomous view that sought to reveal how career-undecided individuals differed from career-decided individuals (e.g., Holland & Holland, 1977), yielding inconsistent and even contradictory findings (Slaney, 1988). Slaney (1988) noted that these inconsistencies could be partially reconciled if a more

nuanced view that considered multiple subtypes of career indecision were adopted.

The development of traditional clustering methods, such as hierarchical and centroid clustering, has offered an empirical method to classify individuals into homogenous groups based on their similarity across relevant variables (Hofmans et al., 2020). To derive typologies of career indecision, clustering studies initially included only undecided students (e.g., Larson et al., 1988), but subsequent studies included decided students too, acknowledging that they may also experience career decision-making difficulties (e.g., Wanberg & Muchinsky, 1992). Whereas some studies analyzed a large set of variables derived from several measures (e.g., Lucas & Epperson, 1990; Santos & Ferreira, 2012), other studies developed typologies based on a single measure of career indecision, such as the Career Decision Scale (CDS; Argyropoulou et al., 2007; Rojewski, 1994; Savickas & Jarjoura, 1991), or the Career Factors Inventory (CFI; Akos et al., 2004; Chartrand et al., 1994). However, the findings of most studies were not replicated (see Supplemental Material A for an overview of 22 studies). As an alternative to traditional clustering, two studies (Germeijs et al., 2012; Milot-Lapointe et al., 2021) investigated indecision types using probabilistic clustering techniques, namely LPA. In contrast to traditional clustering methods, LPA is a model-based approach that enables estimating the fit of the derived typology (Hofmans et al., 2020; Spurk et al., 2020); however, these findings have also yet to be replicated.

Previous clustering studies of career indecision types resulted in a wide range of types and characteristics (see Supplemental Material A). Nevertheless, based on a review of previous research, Kelly and Pulver (2003) claimed that three career indecision types often emerge. The first type includes *developmentally undecided* individuals presenting a relatively developed vocational identity but little commitment to a career choice. These individuals experience minimal negative affect but need additional career information. Several labels were used for this type: *Developmentally undecided* (Callanan & Greenhaus, 1992; Chartrand et al., 1994; Guay et al., 2006) and *well-adjusted information seekers* (Kelly & Pulver, 2003). The second type reflects *chronically undecided* individuals presenting poorly developed vocational identity and little commitment to a career choice. These individuals also need additional career information but, in contrast to the *developmentally undecided* group, experience more negative affect. This type was also labeled in different ways: *Indecisive* (Chartrand et al., 1994), *chronically indecisive/undecided* (Callanan & Greenhaus, 1992; Guay et al., 2006), and *anxious-undecided* (Wanberg & Muchinsky, 1992). The third type signifies *decided* individuals presenting a well-developed vocational identity, experiencing little career indecision, a low need for exploration, and minimal negative affect. This type has also been labeled in several ways: *Decided* (Guay et al., 2006), *ready to decide* (Chartrand et al., 1994), and *confident-decided* (Wanberg & Muchinsky, 1992). As such labels indicate, many typologies of career indecision often confounded between the causes of career indecision (e.g., *anxious*) and its consequences (e.g., *undecided*).

Furthermore, the results of clustering studies of career indecision were, however, relatively inconsistent. For example, three cluster-analytic studies (Lucas & Epperson, 1986, 1988, 1990) yielded typologies that differed in the number of clusters (three vs. five) as

well as in their characteristics. Several explanations for the overall inconsistency across studies were proposed. First, most studies utilized traditional cluster analysis (i.e., hierarchical or centroid; e.g., Chartrand et al., 1994; Kelly & Pulver, 2003), a method criticized for its sensitivity to sample characteristics, measurement scales, and clustering algorithm, as well as for its lack of clear guidelines for selecting an optimal number of types (Hofmans et al., 2020; Spurk et al., 2020). Second, as Brown and Rector (2008) pointed out, many studies were based on large and nonoverlapping sets of variables that were assessed by a large battery of measures (e.g., Holland & Holland, 1977; Wanberg & Muchinsky, 1992). Furthermore, even the few studies that developed typologies of career indecision based on a single assessment were not replicated in subsequent studies (CFI; cf. Akos et al., 2004; Chartrand et al., 1994; CDS; cf. Rojewski, 1994; Savickas & Jarjoura, 1991).

The Present Study

To overcome the limitations of previous research on career indecision types, we employed LPA in the present study to detect homogenous subpopulations among two large groups of participants of varying ages based on the analysis of ten potential causes of their career indecision, as measured by the CDDQ (Gati et al., 1996). Previous career indecision typologies were often not replicated in subsequent research. Thus, the replicability of the career indecision types across two large random samples was added as a criterion for determining the optimal typology solution. Specifically, to select the optimal number of types (or profiles in LPA terminology), we employed a six-step selection procedure that included (a) preliminary quality inspections, (b) inspection of fit indices, (c) evaluation of classification quality, (d) inspection of relative frequencies, (e) evaluation of the replicability of solutions, and (f) evaluation of the qualitative distinctiveness of profiles for final model choice.

As our primary goal was to devise a typology of career indecision that can be efficiently applied in research and practice, we sought to identify types of career indecision using a single, multidimensional assessment of career indecision. To this end, we used the Career Decision-Making Difficulties Questionnaire (CDDQ; Gati et al., 1996), which assesses 10 causes of career indecision grouped into three major clusters: (a) Lack of Readiness includes *lack of motivation, general indecisiveness, and dysfunctional beliefs*; (b) Lack of Information includes *lacking information about the career decision-making process, the self, occupations, and ways of obtaining additional information*; and (c) Inconsistent Information includes *unreliable information, internal conflicts, and external conflicts*. We selected the CDDQ as (a) it is considered one of the most administered and psychometrically adequate assessments of career indecision (Xu & Bhang, 2019), (b) it offers a comprehensive assessment of 10 possible causes of career indecision, and (c) it has been empirically validated and shown to be equivalent across gender, age groups, and nationality (Levin et al., 2020). Although we adopted an exploratory approach to the identification of career indecision types, we expected that at least three types of career indecision would emerge considering previous research (e.g., Kelly & Pulver, 2003) as well as the threefold structure of the CDDQ (Levin et al., 2020).

After selecting and replicating an optimal profile solution, we tested the validity of the emerged typology by examining whether specific individual characteristics increase the likelihood of being

classified to a specific type. First, we focused on age and gender as predictors of type. Regarding age, career indecision is typically regarded as a normative, temporary stage experienced by many individuals during the early phases of their career decision-making process (Brown & Rector, 2008; Osipow, 1999; Tinsley, 1992). Previous research suggested that difficulties related to lack of information or interpersonal conflicts decrease with age, whereas difficulties related to lack of readiness increase from adolescence to early adulthood and then decrease with age (Levin et al., 2020). Regarding gender, previous research generally reported negligible gender differences in career indecision and its causes, but among the most consistent findings are that men, relative to women, tend to have more career decision-making difficulties relating to lack of motivation and fewer difficulties relating to general indecisiveness (Levin et al., 2020). These findings suggest that specific types may be more prevalent among individuals in particular age or gender groups.

Finally, theoretical considerations and previous findings suggest that some causes of career indecision are likely to be associated with outcomes such as career decision status and perceived career decisional distress. *Career decision status* refers to the degree of decidedness as expressed in the range of alternatives under consideration (Saka et al., 2008). *Perceived career decisional distress* refers to the degree of negative affect regarding career decision-making (Levin & Lipshits-Braziler, 2021). We used these two outcomes given their prominent role in differentiating among previously identified career indecision types (e.g., Gordon, 1998; Jones & Chenery, 1980), but intentionally did not include them in the development phase of the typology to avoid confounding the causes of career indecision with its consequences. For career decision status, Gati et al.'s (1996) taxonomy differentiates between lack of readiness problems that typically arise prior to the career decision-making process and those that emerge during the process, including lack of information and those related to the use of information (attributed to inconsistent information). Hence, individuals differing in their type of career indecision are likely to differ in their career decision status. Regarding perceived career decisional distress, previous findings have indicated a linkage between specific causes of career indecision and varying levels of distress (Gordon, 1998; Kelly & Shin, 2009). Accordingly, we examined whether the identified career indecision profile groups who differ in their type of career indecision also differ in their career decision status and perceived career decisional distress.

Method

Participants and Procedure

In the present study, we analyzed the data of 8,918 individuals from the U.S. (age range of 14–50), who visited www.cddq.org, a free, anonymous career website and completed the CDDQ between February 2014 and February 2018 to obtain immediate personalized feedback about the causes of their career indecision and recommendations on how to overcome them. The data analyzed in the present study were derived from a subgroup of 32,556 individuals from seven countries whose CDDQ scores were analyzed by Levin et al. (2020) to test the factor structure of the English version of the CDDQ and its measurement invariance across country, gender, and age. After providing general demographic information (i.e., gender,

age, years of education, and country), participants reported their perceived career decisional distress and career decision status and then completed the CDDQ. To test the replicability of the emerging profiles, we divided the participants randomly into two subsamples of 4,459 each (labeled Sample 1 and Sample 2 in the Results section). These two samples did not differ in age ($M_{S1} = 29.49 \pm 9.43$; $M_{S2} = 29.48 \pm 9.39$), gender distribution ($n_{\text{women-S1}} = 3,180, 71\%$; $n_{\text{women-S2}} = 3,227, 72\%$), nor in years of education ($M_{S1} = 16.34 \pm 3.16$; $M_{S2} = 16.36 \pm 3.18$).

Instruments

Career Decision-Making Difficulties Questionnaire

Participants' causes of career indecision were assessed using the Career Decision-Making Difficulties Questionnaire (CDDQ; Gati et al., 1996; Gati & Saka, 2001). The CDDQ assesses 10 categories of the causes of career indecision, which are grouped into three major clusters. Individuals are asked to rate 34 items on a 9-point Likert-type scale ranging from 1 (*does not describe me*) to 9 (*describes me well*). Gati et al. (1996) reported a median Cronbach α internal-consistency reliability estimate of .77 for the 10 category scores, and Levin et al. (2020) further validated the hierarchical structure, measurement invariance, and reliability of the CDDQ. For the present study, the median Cronbach α internal-consistency reliability estimate for the 10 category scores was .80 in Sample 1 and .81 in Sample 2.

Career Decision Status

We used the Range of Considered Alternatives question (RCA; Saka et al., 2008) to assess participants' career decision status. The RCA resembles the Occupational Alternatives Question (OAQ; Slaney, 1988) but has six response options instead of four. Participants were asked to select the statement that best describes their current career decision status: (a) "I do not even have a general direction," (b) "I have only a general direction," (c) "I am deliberating among a small number of specific occupations," (d) "I am considering a specific occupation, but I would like to explore other options before I make my decision," (e) "I know which occupation I am interested in, but I would like to feel sure of my choice," and (f) "I am already sure of the occupation I want." The RCA has been found useful in measuring career decidedness (e.g., Buzzetta et al., 2017), career decision status (e.g., Gati et al., 2011), and the effectiveness of interventions (e.g., Perez & Gati, 2017).

Perceived Career Decisional Distress

Two items measured the degree to which participants perceived their career decision as difficult ("How difficult is it for you to make a career decision?") and stressful ("How stressful do you find the need to choose a major or a career?"; Levin & Lipshits-Brazilier, 2021). Items were presented with a 9-point Likert-type response scale, ranging from 1 (*not difficult/stressful at all*) to 9 (*very difficult/stressful*). This measure of perceived distress has been shown to correlate negatively with career adaptability and career decision-making adaptability (Levin & Lipshits-Brazilier, 2021). The C_{α} internal-consistency reliability of the combined

score of these items for the present study was .89 in Sample 1 and .88 in Sample 2.

Results

All analyses were conducted in three stages using the integrated development environment *R Studio* for *R*. In the first stage, we computed 10 CDDQ ipsative scores for each participant by standardizing scores across scales. Ipsative scores were preferred over normative scores as they capture intraindividual differences and reduce response bias (Cheung & Chan, 2002). Then, the obtained 10 ipsative scores were standardized across participants (separately for each of the two samples) to serve as LPA indicators. Standardized information enhances latent profile labeling and interpretability (Morin et al., 2016).

Identification of the Optimal Number of Career Indecision Profiles

To identify the optimal number of profiles, in the second stage of analysis, we conducted an LPA on the 10 CDDQ ipsative scores using robust maximum likelihood (MLR) estimation in the *R* package *mclust* (Scrucca et al., 2016). To avoid model convergence on a local maximum, the models, including two to ten profiles, were estimated using 2,000 random sets of start values with 200 iterations each. Determining the optimal number of profiles (i.e., best-fitting model solution) typically involves an integrative approach that considers three criteria: Statistical adequacy, the meaning of profiles, and each solution's theoretical conformity (Hofmans et al., 2020; Spurk et al., 2020). Nevertheless, these criteria for model selection often do not result in a clear conclusion or a replicable solution. Consequently, we integrated replicability across two samples as an additional criterion for identifying the optimal number of profiles. Replicability was evaluated based on the similarity of the corresponding profiles in each solution between the two random samples to minimize the differences of the relative frequencies and mean levels of indicators of the respective profiles. Thus, our elaborated procedure included six steps: (a) preliminary quality inspections, (b) inspection of fit indices, (c) evaluation of classification quality, (d) inspection of relative frequencies, (e) evaluation of the replicability of solutions, and (f) evaluation of profiles qualitative distinctiveness for the final model choice (see Supplemental Material B for a detailed description of the model comparison and selection procedure).

Fit Indices

We first evaluated the fit statistics for solutions with 2–10 profiles to identify the optimal number of profiles. As can be seen on the left side in Table 1 for both samples, the Bayesian information criterion (BIC), the sample-adjusted BIC (SABIC), and the log-likelihood (LL) values for the models representing two to 10 profiles consistently decreased with additional profiles. In line with the monotonic decrease in LL values, the results of the bootstrapped likelihood ratio test (BLRT) indicated that the null hypothesis—according to which the $k - 1$ model is at least equal to the k -profile model—can be rejected for all analyzed models ($p < .001$). However, a visual inspection of the differences in LL values of consecutive models revealed an elbow at the five-profile model (in both samples), with

Table 1
Fit Indices and Classification Quality Indicators for the LPA Models

Sample	K	Fit indices				Classification quality	
		BIC	SABIC	Δ LL	BLRT	Entropy	MPCP
1 (N = 4,459)	2	104,712	104,643	—	—	.83	.93
	3	103,302	103,197	752	<.001	.78	.86
	4	101,923	101,784	735	<.001	.77	.86
	5	100,580	100,405	718	<.001	.77	.87
	6	100,045	99,835	314	<.001	.77	.78
	7	99,472	99,228	332	<.001	.72	.78
	8	99,034	98,754	266	<.001	.72	.79
	9	98,696	98,382	215	<.001	.73	.77
	10	98,424	98,074	182	<.001	.74	.77
	2 (N = 4,459)	2	104,959	104,889	—	—	.81
3		103,684	103,579	684	<.001	.83	.86
4		102,258	102,118	759	<.001	.76	.87
5		101,582	101,407	556	<.001	.81	.84
6		100,557	100,347	387	<.001	.76	.79
7		100,079	99,834	285	<.001	.74	.77
8		99,673	99,394	249	<.001	.72	.77
9		99,342	99,027	212	<.001	.74	.77
10		99,088	98,739	173	<.001	.72	.76

Note. LPA = latent profile analysis; K = number of profiles; BIC = Bayesian Information Criterion; SABIC = sample-size adjusted BIC; Δ LL = log-likelihood difference; BLRT = *p* value for the bootstrapped likelihood ratio test; MPCP = lowest mean profile group posterior classification probability.

the statistical fit to the data suggesting the optimal number of profiles to be five (Morin et al., 2016).

Classification Quality

The right side of Table 1 includes the entropy values and an index related to posterior classification probabilities. These two values reflect the classification quality of each profile solution (see Supplemental Material B). First, an inspection of entropy values revealed that only three tested models exceeded the *desirable* entropy value of .80: The two-profile and three-profile models (in both samples) and the five-profile model (in Sample 2 only). Second, identification of the profile group with the lowest mean posterior classification probability (MPCP) within each tested model revealed that in both samples, solutions with six or more profiles included a profile with MPCP < .80, indicating the lower reliability of these solutions. Thus, an evaluation of fit indices and the criteria for classification quality indicated that models of six or more profiles should be rejected.

Relative Frequency and Replicability

We then considered the relative frequencies of profiles and the replicability of the profile solutions across the two samples. With respect to the relative frequencies of profiles, all models with 2–5 profiles resulted in profiles with an acceptable relative frequency of at least 6%. In terms of the replicability of the relative frequencies of profiles across samples, the two-profile, four-profile, and five-profile models demonstrated high replicability, with a maximum relative frequency difference of 3% between the respective profiles in the two samples. In contrast, for the three-profile model, two of the profiles demonstrated large differences in relative frequency between the two samples (11% vs. 50% in Sample 1; 13% vs.

45% in Sample 2), indicating its low replicability and thus supporting its rejection. To further examine the replicability of the two-profile, four-profile, and five-profile solutions, we computed the sample differences in the CDDQ scores separately for each profile included in the solutions. The mean absolute difference scores for these three profile solutions between samples were 0.06 (*SD* = 0.03), 0.09 (*SD* = 0.07), and 0.13 (*SD* = 0.16), respectively. In comparison, the three-profile model reflected much lower replicability between the two samples, with the mean absolute difference being 1.19 (*SD* = 1.09). Thus, replicability data supported the stability of the two-profile, four-profile, and five-profile models.

Final Model Choice

To facilitate determining the final model, we evaluated the content and meaning of the derived profiles. The objective of this step was to evaluate whether solutions with more profiles included additional profiles that were quantitatively and qualitatively different from those included in solutions with fewer profiles. For this reason, our evaluation began with the five-profile model, which also provided the best fit to the data as indicated by fit indices. The content evaluation determined that all five profiles were distinct, both quantitatively and qualitatively. We selected this model as the optimal one, and retained it for further analysis and interpretation.

Table 2 presents the number and percentage of participants and the mean posterior classification probabilities for each of the five profiles. As seen in Table 2, the classification probabilities of individuals into profiles in the five-profile solution were high; even the lowest mean posterior classification probability of .84 (appearing in Profile 1, Sample 2) exceeded the recommended threshold level of .80 (Spurk et al., 2020). Moreover, the Pearson correlations across the 10 respective mean scale scores of Sample 1

Table 2
Frequencies and Mean Posterior Probabilities for the Five Types

Sample	Profiles	n	RF	Mean posterior probabilities				
				Unmotivated	Indecisive	Unrealistic	Uninformed	Conflicted
1 (N = 4,459)	Unmotivated	264	6%	.88	.06	.03	.02	.01
	Indecisive	1,344	30%	.02	.87	.04	.05	.02
	Unrealistic	555	12%	.01	.09	.88	.02	.00
	Uninformed	1,774	40%	.00	.05	.01	.91	.03
	Conflicted	522	12%	.00	.04	.00	.08	.88
2 (N = 4,459)	Unmotivated	286	6%	.84	.08	.03	.05	.00
	Indecisive	1,446	32%	.02	.88	.04	.05	.01
	Unrealistic	481	11%	.09	.02	.88	.01	.00
	Uninformed	1,729	39%	.01	.05	.00	.91	.03
	Conflicted	517	12%	.01	.04	.01	.07	.87

Note. RF = relative frequency. Mean posterior classification probabilities >.80 are presented in **bold**.

and Sample 2 ranged between .96 and .99 for the five profiles, thus supporting the replicability of the five-profile solution.

Interpretation of the Five Extracted Profiles

Figure 1 presents the mean Z-scores of the 10 CDDQ scales for each of the five profiles across the two samples. The mean scores are reported separately for Sample 1 and Sample 2 in Supplemental Material C. The first three identified profiles were characterized by one salient difficulty category from the Lack of Readiness cluster. Specifically, the first profile was labeled *unmotivated* (6% in both samples) as it was high in *lack of motivation*. The second profile was labeled *indecisive* (30% and 32% in Sample 1 and Sample 2, respectively) as it was high in *general indecisiveness*. The third profile was labeled *unrealistic* (12% and 11% in Sample 1 and Sample 2, respectively) as it was high in *dysfunctional beliefs*.

In contrast to the *unmotivated*, *indecisive*, and *unrealistic* profiles, the fourth and fifth profiles were characterized by high levels in several difficulty categories. The fourth profile, labeled *uninformed* (40% and 39% in Sample 1 and Sample 2, respectively), was characterized by high levels in all four Lack of Information categories (i.e., *the career decision-making process*, *the self*, *occupations*, and *ways of obtaining additional information*). Finally, the fifth profile, labeled *conflicted* (12% in both samples), was characterized

by the highest levels of the three Inconsistent Information categories (i.e., *unreliable information*, *internal conflicts*, and *external conflicts*); its *external conflicts* level was especially high. Interestingly, whereas the *uninformed* profile was characterized by the highest levels of difficulties relating to *lack of information about the process, occupations, and ways of obtaining additional information*, the fifth profile was characterized by the highest level of *lack of information about the self*.

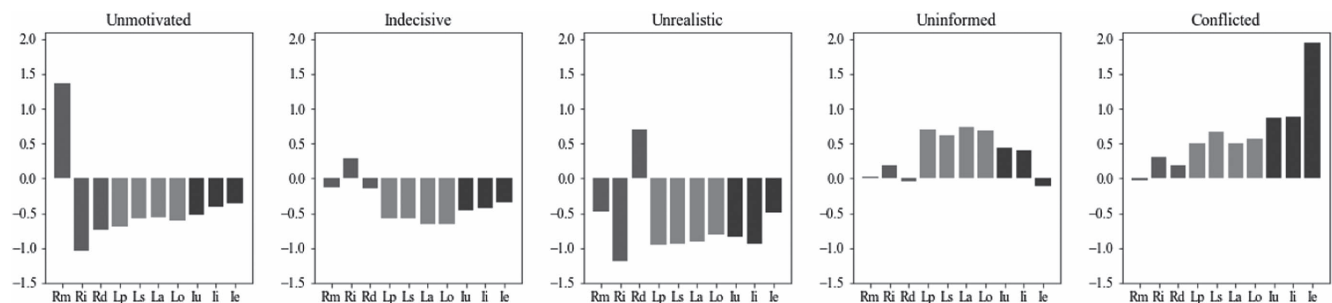
Predictors and Outcomes of Profile Classification

The third and final stage of the analyses included tests of predictors and outcomes of profiles in the retained solution. Specifically, we used categorical latent variable multinomial logistic regression to test age and gender as predictors of profile classification. Then, profile mean differences in career decision status and perceived career decisional distress were examined using analyses of variance.

Predictors of Profile Classification

Table 3 shows the results of the categorical latent variable multinomial logistic regressions in Sample 1 and Sample 2 for the associations with age and gender, on the one hand, and profile

Figure 1
Standardized Means of the 10 CDDQ Scales for the Five Types Across Samples



Note. Rm = lack of motivation; Ri = general indecisiveness; Rd = dysfunctional beliefs; Lp = lack of information about the career decision-making process; Ls = lack of information about the self; Lo = lack of information about occupations; La = lack of information about ways of obtaining additional information; Lu = unreliable information; Li = internal conflicts; Ie = external conflicts.

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Table 3

Results From the Categorical Latent Variable Multinomial Logistic Regression Models of the Associations of Age and Gender With Type Classification

Predictors	Unmotivated versus indecisive		Unmotivated versus unrealistic		Unmotivated versus uninformed		Unmotivated versus conflicted		Indecisive versus unrealistic	
	Coef.	OR	Coef.	OR	Coef.	OR	Coef.	OR	Coef.	OR
Sample 1										
Age	-0.04***	0.96	-0.03***	0.97	-0.06***	0.94	-0.06***	0.94	0.00	1.00
Gender	0.59***	1.81	0.27	1.32	0.08	1.09	0.26	1.29	-0.32**	0.72
Sample 2										
Age	-0.02**	0.98	-0.01	0.99	-0.04***	0.96	-0.06***	0.94	0.01	1.01
Gender	0.90***	2.47	0.27	1.32	0.39**	1.48	0.42***	1.52	-0.63***	0.53

Predictors	Indecisive versus uninformed		Indecisive versus conflicted		Unrealistic versus uninformed		Unrealistic versus conflicted		Uninformed versus conflicted	
	Coef.	OR	Coef.	OR	Coef.	OR	Coef.	OR	Coef.	OR
Sample 1										
Age	-0.02***	0.98	-0.03***	0.97	-0.03***	0.97	0.01***	0.97	0.00	1.00
Gender	-0.51***	0.60	-0.34**	0.71	-0.19	0.82	0.02	0.98	0.17	1.19
Sample 2										
Age	-0.02***	0.98	-0.04***	0.96	-0.03***	0.97	-0.05***	0.95	-0.02**	0.98
Gender	-0.51***	0.60	-0.48*	0.62	0.12	1.13	0.15	1.16	0.03	1.03

Note. Coef. = logit coefficient; OR = odds ratio. Gender was coded as a dichotomous variable (0 = man, 1 = woman). 0.60 > ORs > 1.68 are presented in **bold**. * $p < .05$. ** $p < .01$. *** $p < .001$.

classification on the other. Although age was significantly associated with the likelihood of profile classification, the effect sizes were all negligible ($0.94 < OR < 1.01$), indicating that age contributes weakly to the prediction of profile classification.

For gender, as can be seen in Table 3, being female was associated with a greater likelihood of classification in the *indecisive* profile relative to the *unmotivated* profile ($OR_{across} = 2.13$), indicating that men are more likely than women to report being unmotivated whereas women tend to experience greater general indecisiveness than men. For both samples, women were more likely to be

classified as *indecisive* than as *unrealistic*, but in terms of effect size, this difference was small in Sample 2 ($OR = 0.53$) and negligible in Sample 1 ($OR = 0.72$). All other associations between gender and the likelihood of profile classification were either nonsignificant or negligible ($0.60 < OR < 1.01$).

Outcomes of Profile Classification

Table 4 presents the relative frequencies of the six career decision statuses as well as the mean levels of career decision status and

Table 4

Relative Frequencies and Mean Levels on Outcomes of the Five Types in the Two Samples

Outcomes	Unmotivated	Indecisive	Unrealistic	Uninformed	Conflicted	F(4, 4,454)
Sample 1						
RCA-1	3%	2%	1%	17%	15%	
RCA-2	7%	7%	2%	24%	20%	
RCA-3	13%	9%	5%	18%	25%	
RCA-4	20%	13%	11%	18%	16%	
RCA-5	21%	32%	24%	17%	19%	
RCA-6	37%	37%	58%	6%	5%	
RCA (M)	4.60 ^a	4.78 ^a	5.28	3.12 ^b	3.20 ^b	453.10***
PCDD (M)	3.49 ^a	4.85	3.14 ^a	6.46	6.86	472.80***
Sample 2						
RCA-1	3%	2%	1%	16%	13%	
RCA-2	12%	7%	2%	25%	20%	
RCA-3	9%	11%	5%	19%	23%	
RCA-4	16%	13%	10%	18%	22%	
RCA-5	24%	30%	23%	17%	16%	
RCA-6	35%	37%	59%	5%	5%	
RCA (M)	4.51 ^a	4.71 ^a	5.30	3.08 ^b	3.26 ^b	431.30***
PCDD (M)	3.98	4.79	3.01	6.48 ^b	6.61 ^b	423.90***

Note. RCA = range of considered alternatives; PCDD = perceived career decisional distress. Identical superscripts indicate profiles that are not significantly different at $p < .05$. Relative Frequencies $\geq 20\%$ are presented in **bold**. *** $p < .001$.

perceived career decisional distress for the five profiles separately for Sample 1 and Sample 2. A two-way analysis of variance (ANOVA), followed by Tukey's post hoc contrasts, was performed with career decision status, as indicated by the level of the RCA as the dependent variable and sample (two levels) and profile (five levels) as the independent variables. This analysis revealed no main effect for sample, $F(1, 8,908) = 0.80, p = .37$, nor the interaction of Sample \times Profile, $F(4, 8,908) = 0.55, p = .70$. A main effect for profile emerged, $F(4, 8,908) = 883.87, p < .001, \eta^2 = .28$, with significant differences in decision status among the five profiles. Specifically, across samples individuals profiled as *conflicted* or as *uninformed* were the least decided ($M = 3.22, SD = 1.44; M = 3.10; SD = 1.50$, respectively). Individuals profiled as *indecisive* or as *unmotivated* were relatively more decided ($M = 4.74, SD = 1.34; M = 4.55, SD = 1.45$, respectively), but were not as decided as those profiled as *unrealistic* ($M = 5.29, SD = 1.05$).

A second two-way ANOVA, followed by Tukey's post hoc contrasts, with career decisional distress as the dependent variable and sample (two levels) and profile (five levels) as the independent variables, revealed no main effect for sample, $F(1, 8,908) = 0.28, p = .60$. A main effect for profile emerged, $F(4, 8,908) = 892.88, p < .001, \eta^2 = .29$. Specifically, across samples, individuals profiled as *conflicted* experienced the highest career decisional distress ($M = 6.73, SD = 1.87$), followed by those profiled as *uninformed* ($M = 6.47, SD = 1.91$). *Indecisive* individuals reported average levels of career decisional distress ($M = 4.82, SD = 2.13$), whereas the *unmotivated* and *unrealistic* profiled individuals reported the lowest levels of career decisional distress ($M = 3.74, SD = 2.01; M = 3.08, SD = 1.81$, respectively). A significant interaction of Sample \times Profile emerged but was not further investigated given its negligible effect size, $F(4, 8,908) = 3.55, p < .05, \eta^2 < .01$.

Discussion

The primary goal of the present research was to identify homogeneous groups of individuals with similar patterns of causes of career indecision. The analyses of two large and diverse samples yielded five quantitatively and qualitatively distinct types of career indecision: *Unmotivated*, generally *indecisive*, *unrealistic*, *uninformed*, and *conflicted*. In doing so, the present research was the first to rely on a single multidimensional measure, using LPA to derive and replicate types of career indecision. Insignificant age and minor gender differences between the types, as well as meaningful associations of the types with perceived career decisional distress and career decision status further supported the validity of the identified typology.

Types of Career Indecision

Our findings demonstrate that five types with different combinations of the causes of career indecision can be meaningfully distinguished. These results are compatible with previous research supporting the notion of qualitatively different reasons for experiencing career decision-making difficulties (e.g., Chartrand et al., 1994; Germeijs et al., 2012; Kelly & Pulver, 2003; Savickas & Jarjoura, 1991). Specifically, three of the five types included individuals experiencing a single salient cause of career indecision related to lack of readiness (i.e., difficulties associated with an inclination to disengage from the career decision-making process; Brown & Rector,

2008; Gati et al., 1996; Xu & Bhang, 2019), whereas the remaining two types reported multiple salient causes of indecision but were mainly experiencing difficulties related to lacking information or external conflicts.

The first type—labeled *unmotivated*—included individuals insufficiently motivated to finalize their career choice. Previous studies identified a similar group of individuals who had a relatively crystallized vocational identity but felt nevertheless unready to decide (Chartrand et al., 1994; Germeijs et al., 2012; Lucas & Epperson, 1990). This group was the smallest in relative frequency (6% in both samples), in line with Chartrand et al.'s (1994) *ready to decide* type, representing 5% of their sample. The second type—labeled *indecisive*—comprised almost a third of both samples (30% and 32%) and included individuals expressing a general tendency to struggle with decision-making. Previous studies identified a similar group of relatively decided individuals who nonetheless experienced elevated goal instability and distress (Chartrand et al., 1994; Kelly & Pulver, 2003). The third type—labeled *unrealistic*—included individuals having dysfunctional beliefs (e.g., the belief in only one "right" career choice; 12% and 11% in Sample 1 and Sample 2, respectively). Interestingly, although Salomone and McKenna (1982) described a case resembling this type 4 decades ago, it did not emerge in previous person-centered research.

The fourth type—labeled *uninformed*—was the most frequent in both samples (40% and 39%). For this type, difficulties related to lack of information were most salient. A similar type (and with comparable relative frequency) labeled *developmentally undecided* was reported in previous studies (e.g., Chartrand et al., 1994; Kelly & Pulver, 2003; Santos & Ferreira, 2012). Indeed, the label of *developmentally undecided* corresponds to the view that lack of information is a normative, temporary difficulty that would be overcome by exploring the world of work and the self (Brown & Rector, 2008; Osipow, 1999). Finally, the most pronounced cause of career indecision in the fifth type—labeled *conflicted*—was related to *external conflicts*, but *internal conflicts* and *unreliable information* were additional causes. Lucas and Epperson (1990) Type 1 resembles this type, characterized by an external locus of control, dependent decision-making style, and high anxiety. A similar type emerged in subsequent studies (Kelly & Pulver, 2003; Santos & Ferreira, 2012). In contrast to the *uninformed* type, *conflicted* individuals appear to experience more persistent emotional and personality-related difficulties that are less likely to be resolved only by further exploration (Kelly & Lee, 2002; Saka et al., 2008).

Associations With Predictors and Outcomes

The present research included two large samples of individuals in the age range of 14–50. Despite this sizable range, age did not emerge as a significant predictor of career indecision type, indicating that the five emerged types are rather stable across age and that different typological solutions are unnecessary for different age groups. Furthermore, the five types were stable in gender distribution, which may be an advantage of the present findings over previous typological solutions in which gender differences emerged (e.g., Meldahl & Muchinsky, 1997).

In contrast, significant differences in career decision status and perceived career decisional distress emerged between the five types. Regarding career decision status, we found that the *unmotivated* and *indecisive* types reported a comparable, relatively high degree of

decidedness, as indicated by their career decision status, a finding consistent with previous research (Chartrand et al., 1994; Germeijs et al., 2012; Lucas & Epperson, 1990). In general, *unmotivated*, *indecisive*, and *unrealistic* types reported a more advanced decision status than *uninformed* and *conflicted*: More than 75% of the *unmotivated*, *indecisive*, and *unrealistic* types stated that they were already considering one specific alternative or being sure of their choice; among individuals classified as *unrealistic*, almost 59% reported being already sure of their desired occupation. These findings underscore the importance of considering the career decision-making difficulties of both apparently undecided as well as decided individuals as well as avoiding confounding the causes of problems (e.g., lack of information) and their consequences (e.g., decision status). Furthermore, these results appear conceptually surprising, as the difficulties reported by *unmotivated*, *indecisive*, and *unrealistic* types represent lack of readiness (characterized as having difficulty initiating the career decision-making process or being inclined to disengage from it) and lack of planning and goal-directedness (Brown & Rector, 2008; Gati et al., 1996; Xu & Bhang, 2019). However, previous findings have indicated a weaker association between career decision-making difficulties relating to lack of readiness and degree of decidedness than with other causes of career indecision (Hacker et al., 2013; Lent et al., 2019; Perez & Gati, 2017). Thus, it appears that difficulties related to motivation, general indecisiveness, and dysfunctional beliefs are more likely to emerge in the final stages of career decision-making rather than primarily in its early stages, as theoretically postulated.

Regarding perceived career decisional distress, the *unrealistic* type reported the lowest level of distress, perhaps due to their lack of awareness of the dysfunctionality of their beliefs (Amir & Gati, 2006). Both the *conflicted* and *uninformed* types reported high distress levels, with the *conflicted* type reporting greater distress than the *uninformed* type, in line with previous findings (Gordon, 1998; Kelly & Pulver, 2003). The *indecisive* type reported less distress than the *conflicted* and *uninformed* types but greater distress than the *unmotivated* and *unrealistic* types. *Indecisive*-type individuals may have become accustomed to their inclination to general indecisiveness, and this condition may be accompanied by only minimal concern and stress. An alternative explanation is based on the finding that the *indecisive* type is characterized by low internal or external conflicts. Thus, internal and external conflicts could thus be the main cause of distress for the *conflicted* type.

Limitations and Future Research

Before discussing the implications of the present study to research and practice, its limitations should be acknowledged. First, our typology was identified and replicated across two large samples representing U.S. individuals deliberating on their career choice who choose to use an online version of the CDDQ embedded in a career-counseling website. In this respect, our findings may not replicate and generalize to individuals who are not actively seeking assistance despite experiencing career indecision or to individuals from other national and cultural contexts. In addition, as the www.cddq.org website is not limited to only U.S. users, contextual data such as regarding ethnicity or social class is not collected. Future research should test the relevance and generalizability of the present typology with additional demographic and socioeconomic variables.

Second, the derived typological solution was validated in the present study using two concurrently measured outcomes—career decision status and perceived career decisional distress. Future research should adopt a longitudinal design to investigate the interplay between type classification and such outcomes. In addition, future studies should validate the relevance and utility of our typology by testing associations between type classifications and additional predictors and outcomes (e.g., choice satisfaction), particularly in the context of career counseling (e.g., satisfaction from counseling). An important issue for future investigation is the differential effectiveness of various career interventions for individuals of different career indecision types. Another important matter warranting future research involves refining the distinction between the *indecisive* and *conflicted* types by testing their associations with, for example, other variables associated with the career decision-making process: Self-efficacy, anxiety, degree of commitment, and locus of control.

Implications for Research and Practice

From a methodological viewpoint, our research contributes to a more systematic and informed approach for identifying and selecting the optimal solution in LPA research. In the present study, we implemented an elaborated procedure for discerning the optimal number of types (or “profiles” in LPA terminology). This approach expands the existing standards—evaluation of model fit indices, content considerations, and criterion-related validation (Spurk et al., 2020)—by incorporating the replicability of types as an additional criterion for solution selection. Whereas previous typologies of career indecision were not replicated in subsequent studies, recent clustering studies of other vocational constructs reported replications of their profile solutions (e.g., Kim et al., 2021; Perera & McIlveen, 2017). However, these replications were performed in a second validation step rather than being incorporated as an integral component during the initial identification of the optimal solution. By integrating two or more samples as described in the present study, sample-specific characteristics are less likely to bias results, and the identified types are more likely to emerge in additional samples.

The present research demonstrated the utility of using a single multidimensional assessment of the causes of career indecision to classify individuals into types based on a typology that was replicated in two large samples. The five career indecision types revealed in the present study resemble those identified in previous research (e.g., Chartrand et al., 1994; Germeijs et al., 2012; Gordon, 1998; Kelly & Pulver, 2003); however, these types offer a broader understanding among apparently decided individuals (e.g., *unmotivated*), as well as capture empirically for the first time the *unrealistic* type. Thus, the present research underscores the effectiveness of relying on a single multidimensional assessment instead of a large battery of measures to identify career indecision types. Specifically, the results support applying the CDDQ (Gati et al., 1996) to classify individuals into career indecision types in addition to its extensive use for identifying the causes of career indecision (i.e., as represented by the 10 scale scores of the CDDQ). Diagnosing career indecision types can facilitate referring individuals to optimal intervention modules as it involves characterizing individuals by a single type rather than (or in addition to) mapping their causes of career indecision using a 10-score profile. In many colleges, for

example, classes are offered to help students select a major. Thus, identifying students' career indecision type can facilitate assigning them to classes tailored to their specific needs.

Moreover, for intervention planning, identifying the main types of career indecision can contribute to designing more effective career interventions tailored to each type (Kelly & Pulver, 2003; Rochlen et al., 2004). Whereas further research is needed to identify which intervention would best serve clients of each career indecision type, we offer some possible future directions. *Unmotivated* clients may benefit most from motivation-focused interventions such as motivational interviewing (Rochat & Rossier, 2016), whereas generally, *indecisive* clients may benefit from Cognitive Behavioral Therapy (CBT) interventions aimed at reducing anxiety or reframing pessimistic views (Swanson & Fouad, 2010). *Unrealistic* clients may benefit from interventions focused on identifying, raising awareness, and reframing their dysfunctional beliefs (Hechtlinger et al., 2019). Then, as the most salient impediment to *uninformed* clients' career choice relates to the lack of information, counseling such clients should involve increasing their knowledge about the career decision-making process as well as facilitating self- and career exploration. Finally, *conflicted* clients experiencing salient external conflicts may particularly benefit from interventions addressing the role of significant others in their career decisions.

Summary

We analyzed the Career Decision-Making Difficulties Questionnaire responses of 8,918 individuals from the U.S. deliberating about their careers. Using latent profile analysis, we identified five types of career indecision that differed in their salient causes of career decision-making difficulties. The emerged five types were replicated in two samples. Age and gender were only negligible predictors of type classification. In contrast, career decision status and perceived career decisional distress differed among the five types. Suggestions for facilitating deliberating individuals' career decision-making were delineated.

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