

Bulletin of Educational Psychology, 2001, 33(1), 87-98
National Taiwan Normal University, Taipei, Taiwan, R.O.C.

Career Decision-Making Difficulties Perceived by College Students in Taiwan*

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The purposes of the study were threefold: (1) to construct the Chinese version of "Career Decision-making Difficulties Inventory;" (2) to investigate the career-related problems encountered by college students; and (3) to test a classification system for career decision difficulties for college students. Four hundred and sixty-seven college students completed the Career Decision-making Difficulties Questionnaire. Data obtained was analyzed by Chi-square, ANOVA, factor analysis, and ADDTREE. The results indicated the significant differences between decided and undecided students on their perceptions of career difficulties. The three-group classification system for career decision difficulties was generally speaking supported by the data in this study.

KEY WORDS: Career Decision-making, Career Difficulties, Career Problems

During the process of career development, an individual makes numerous important decisions that affect major areas of his or her life. For some of the college students, they need little time to decide. Some of them even have decided for a number of years prior to entering the world of work. However, many of them lack essential elements necessary to make a right decision. The empirical studies on the construct of career indecision provided us with a vehicle to realize the difficulties our clients might encounter. Gati, Krausz, and Osipow (1996) presented a model to explain career difficulties people might encounter.

The author of the present study concerns the difficulties college students perceived in Taiwan. To examine the career-related difficulties perceived by college students, the classification system proposed by Gati et al. (1996) was adapted in this study. The classification system is hierarchic, in which broad categories of career difficulties are separated into categories and then subcategories based on finer distinctions. Therefore each difficulty can be classified into one major category and

* This project was supported by a grant from the National Science Council (NSC87-2413-H-153-004). Itamar Gati's (professor at the Hebrew University of Jerusalem) help in ADDTREE analysis is deeply appreciated.

then into finer categories and subcategories.

Gati et al. (1996) developed the Career Decision-making Difficulty Questionnaire (CDDQ) to evaluate the difficulties perceived by individuals. The validity and reliability of the CDDQ were then tested in several studies after the theoretical model was proposed. Osipow and Gati (1998) examine the construct validity of the career decision making difficulties questionnaire and found that undecided students had significantly higher scores on the CDDQ. Similar to this finding, Lancaster, Rudolph, Perkins, and Patten (1999) found that decided students have a tendency to present themselves as having less difficulties in decision making than undecided students.

The central question of the present study concerned what kinds of difficulty college students encountered or perceived. One of the purposes of career counseling is to facilitate decision-making process, in particular, to help them overcome the difficulties they encounter during the process. However, several studies indicated that the dichotomous grouping of “decided-undecided” is too simplistic and leaves out other areas of concern (Brooks, 1984; Fuqua & Hartman, 1983; Salomone, 1982). In this study, students were classified into one of the five categories of decision status. The difficulties perceived by them will be examined.

Vondracek, Schulenberg, Skorikov, and Gillespie (1995) examined the relationship between identity statuses and different kinds of career decisions. The findings showed that membership in a specific identity status group was significantly related to the nature and amount of career indecision. Achievement responders had significantly lower career indecision scores than respondents in other three status groups.

Cohen, Chartrand, and Jowdy (1995) divided students who have not yet made a career decision into four groups: (1) Ready to decide- low anxiety, high self-esteem, good vocational identity; (2) Developmentally undecided-- emotionally stable, but do not yet have a clear picture of themselves or the world of work; (3) Choice anxious-- high choice anxiety, little need for career information, low vocational identity; and (4) Chronically indecisiveness-- low vocational identity, high need for career and self information, low goal directness, and low self-esteem. In this study, career difficulties experienced by students in different status of career decision will be examined.

In summary, the purposes of the study were threefold. The first purpose was to investigate the career-related problems encountered by college students. The second purpose was to construct the Chinese version of “Career Decision-making Difficulties Inventory.” Finally, a classification system of career decision difficulties was tested by the college sample in this study.

Method

Participants

In the stage of Questionnaire development, the participants were 307 college students (149 males and 158 females) from five universities in southern Taiwan. The age ranged from 18 to 29 with a mean of 21.23. All of them participated in career-related courses.

To test the difficulty classification system, the participants consisted of 172 male and 295 female students from 11 universities in Taiwan. They came from different majors across the six categories classified by Holland (1997). Among them, 25% were freshmen, 15% were sophomores, 26% were juniors, 30% were seniors, and 4% were graduate students. They were between the ages of 18 and 29 with the mean of 21.18.

Instrument

The Chinese version of the Career Decision-making Difficulties Questionnaire (CDDQ) were developed based on the 44 difficulties listed in the Appendix in Gati et al. (1996). The author added 6 items specific to the cultural context in Taiwan. The author believe those items might influence the college students' career decision making. Those items included the concepts of family members' involvement in making a decision, the college entrance examination system, and economic and political development of the country, etc. However, those items were not included in the final analysis because a factor analysis for the 50 items did not show a convergent of the six items.

According to Gati et al. (1996), the 44 items represented 10 distinct types of problems and subsumed three major categories of career difficulties. The first category, Lack of Readiness, includes three categories of difficulties: (1) lack of motivation; (2) indecisiveness; and (3) dysfunctional beliefs. The second category, Lack of Information, includes four subcategories: (1) lack of knowledge about the steps involved in the process of career decision making; (2) lack of information about the self; (3) lack of information about the various occupations; and (4) lack of information about the ways of obtaining additional information. The third major category is Inconsistent Information which is the results of (1) unreliable information; (2) internal conflicts; and (3) external conflicts. The internal consistent reliability of the 10 scales based on a 307 college students (149 males and 158 females) ranged from .53 to .91. To respond to the questionnaire, the participants were asked to rate from 1 to 9 according to the degree of difficulty they perceived on each difficulty item.

In addition to the items on the CDDQ, all participants were asked to choose among five alternatives. Those five statements represented respectively five different decision status or identity development: (1) Identity diffusion; (2) Anxious type of indecision; (3) Explorative type of indecision; (4) Foreclosure; and (5) Identity achievement. The five statements were developed based on Marcia's (1966) classification of adolescent identity status. She divided the identity status into four groups: achievement, foreclosure, moratorium, and diffusion. In this study, we adapt the ideas of differences between indecision and indecisiveness (Herr & Cramer, 1996) and divided the moratorium members into two subgroups, anxious types of undecided and explorative type of undecided.

Procedure

The participants responded to the questionnaire in classes of 20 to 45 students in career-planning related courses. The questionnaires were mailed to 11 university counseling centers and the counselors helped with the administrative procedure.

Data analysis

In the stage of instrument development, mean, standard deviation, item-total correlation, and reliability coefficient of each item were calculated to examine the appropriateness of the items. To test the differences between decided and undecided groups of students on their perceptions of career difficulty, ANOVA was used. The decided group included students with identity achieved and foreclosure status. The undecided group, on the other hand, included the explorative/anxious undecided and identity diffusion students. Homogeneity of different grade groups was tested to cope with the problem caused by different cell numbers. In addition, factor analysis was administered to examine the factor structure of the career difficulties perceived by college students.

In order to examine the empirical structure of the 10 scales of the CDDQ, we used ADDTREE (Sattath & Tversky, 1977), a kind of cluster analysis algorithm used by Gati et al. (1996). ADDTREE is compelling because it represents the proximity matrix in the form of an additive or “path length” tree, in which the variables are divided into clusters according to the proximity between them (Osipow & Gati, 1998).

Results

Psychometric properties of the Chinese version of the CDDQ

The means, standard deviations, and reliabilities of the scale scores were listed in Table 1. The table also presents the number of items for each scale. The intercorrelations among the scale scores are also presented in Table 1. The means for the 10 scales seem reasonable and the standard deviations show an acceptable variability.

As far as the intercorrelations among the scale scores, intercorrelations within the Lack of Information category are much closer to each other. The unreliable information in the category of Inconsistent Information seems closer to the scale scores on the category of Lack of Information. Hence, we categorized the unreliable information into the category of Lack of Information.

Table 1 Means, standard deviations, reliability, and intercorrelations among the Career Decision-making Difficulties Questionnaire (CDDQ) Scales (n=475)

CDDQ Scales	R1	R2	R3	L1	L2	L3	L4	I1	I2	I3
Lack of readiness										
Lack of motivation (R1)										
Indecisiveness (R2)	15									
Dysfunctional myths (R3)	-14	25								
Lack of information										
About the process (L1)	13	45	22							
About self (L2)	16	53	17	71						
About occupations (L3)	13	37	12	53	66					
About ways of obtaining additional information (L4)	07	36	17	55	63	65				
Inconsistent information										
Unreliable information (I1)	18	44	15	56	75	64	66			
Internal conflicts (I2)	16	31	13	33	45	38	35	45		
External conflicts (I3)	12	12	09	12	24	13	20	23	37	
Number of items	3	4	3	3	8	4	2	6	7	4
Mean	12.52	21.59	16.15	13.08	39.27	22.12	9.76	30.29	33.56	17.94
Standard Deviation	5.87	7.16	5.45	6.28	15.33	8.07	4.16	10.79	9.03	9.23
Cronbach alpha	.67	.73	.63	.86	.91	.89	.81	.87	.62	.93

Career difficulties perceived by college students

The numbers of participants' decision status in each of the five categories are listed in Table 2. The result of Chi-square test indicated that most of the students were in the status of explorative type of undecided ($\chi^2_4=10.68$). For college seniors and graduate students, most of them belong to the category of identity achievement. However, for freshmen, sophomores, and juniors, most of them are in the status of explorative undecided. In addition, one fifth (over 20%) of the freshmen were confused about their future.

Career difficulties perceived by college students were examined in terms of gender, grade, and decision status differences. Table 3 and Table 4 are summaries of ANOVA tests for gender, status, and grade differences. For the gender variable, male and female students' scores on the scales are not significant except for the scale, lack of motivation. Males' average score on the lack of motivation scale are significantly higher than that of females.

Table 2 Career decision-making status of all participants

		Identity achieved	Foreclosure	Explorative Undecided	Anxious Undecided	Identity Diffusion	Total	χ^2
Gender	Males	33(19.2)	22(12.8)	74(43.0)	16(9.3)	27(15.7)	172	10.68*
	Females	93(31.5)	30(10.2)	110(37.3)	32(10.8)	30(10.2)	295	
Grade	Freshmen	20(17.7)	13(11.5)	43(38.1)	14(12.4)	23(20.4)	113	42.17*
	Sophomore	16(23.5)	6(8.8)	31(45.6)	8(11.8)	7(10.3)	68	
	Juniors	22(17.9)	13(10.6)	61(49.6)	14(11.4)	13(10.6)	123	
	Seniors	58(40.0)	19(13.1)	45(31.0)	11(7.6)	12(8.3)	145	
	Graduate	10(55.6)	1(5.6)	4(22.2)	1(5.6)	2(11.1)	18	
Total		126(27.0)	52(11.1)	184(39.4)	48(10.3)	57(12.2)	467	

Notes: 1. Figures in the parentheses represented percentage. 2. $\chi^2=10.68$; $\chi^2_{16}=42.17$; * $p<.05$

Table 3 Means, Standard Deviations, and ANOVA test of the CDDQ scales in different gender and different decision status

CDDQ Scales	Gender				F	Decision Status				
	Males		Females			Decided		Undecided		F
	M	SD	M	SD		M	SD	M	SD	
Lack of readiness										
Lack of motivation	13.38	5.87	12.01	5.83	6.037*	10.34	5.07	13.80	5.95	41.61***
Indecisiveness	20.93	7.47	22.00	6.97	2.389	19.16	7.44	23.15	6.59	36.19***
Dysfunctional myths	15.50	5.36	16.51	5.47	3.751	15.83	5.60	16.37	5.35	1.08
Lack of information										
About the process	13.35	6.21	12.94	6.32	.463	10.03	5.32	14.93	6.11	77.91***
About self	39.80	14.93	38.99	15.61	.305	30.60	13.99	44.55	13.72	112.12***
About occupations	21.90	7.55	22.21	8.41	.162	19.29	8.64	23.81	7.27	36.02***
About ways of obtaining additional information	9.92	4.01	9.69	4.25	.332	8.16	4.26	10.77	3.80	47.11***
Inconsistent information										
Unreliable information	30.68	10.58	30.13	10.97	.279	24.47	10.66	33.79	9.33	94.87***
Internal conflicts	33.92	8.72	33.31	9.26	.474	30.49	9.45	35.42	8.32	34.14***
External conflicts	18.43	8.31	17.65	9.75	.784	15.63	9.73	19.35	8.67	18.34***

As far as the differences between decided and undecided students, the F values of the ANOVA tests on the questionnaire were significantly different except for the scale, dysfunctional myths. The results indicated that decided students have a tendency to present themselves as having less difficulty than undecided students have.

Finally, in different grade levels, the results of ANOVA tests indicate mainly the differences in the category of Lack of Information. The post hoc tests generally showed that seniors perceived less difficulty than other group students perceive except for the scale of obtaining additional information.

Table 4 Means, Standard Deviations, and ANOVA test of the CDDS scales in different grade groups

CDDS Scales	Freshmen		Sophomores		Juniors		Seniors		Graduates		F
	M	SD	M	SD	M	SD	M	SD	M	SD	
Lack of readiness											
Lack of motivation	14.06	6.21	12.16	5.92	12.03	5.24	11.97	5.99	11.72	5.69	2.65
Indecisiveness	22.90	6.50	22.01	7.64	21.79	7.06	20.75	7.36	17.71	6.98	2.82
Dysfunctional myths	15.60	5.65	16.67	5.46	16.18	5.23	16.40	5.61	15.17	4.34	.66
Lack of information											
About the process	14.60	6.62	13.76	6.71	13.38	5.62	11.73	6.10	10.06	5.46	4.81**
About self	41.81	14.55	40.34	15.22	41.25	15.17	36.10	15.63	31.67	14.48	4.15**
About occupations	24.48	6.90	21.91	7.49	22.39	7.92	20.39	8.79	19.83	9.36	4.54**
About ways of obtaining											
additional information	10.51	4.31	9.76	3.91	10.06	3.94	9.16	4.26	8.22	4.12	2.49
Inconsistent information											
Unreliable information	32.42	10.81	30.67	10.39	31.98	10.62	27.89	10.60	24.61	10.62	4.97**
Internal conflicts	34.62	8.82	33.62	9.69	33.58	8.98	32.76	9.25	32.33	7.15	.74
External conflicts	18.21	9.59	17.47	8.92	18.57	8.41	17.71	9.91	13.06	7.18	1.59

The internal structure of the Chinese version of the CDDQ

Since the difficulty scores perceived by college students are different in terms of their decision-making status, the separate factor analyses for decided and undecided students were conducted to examine the factor structure of the 10 scales.

For students who have decided the future directions, three factors were observed with eigenvalues greater than 1.0. Five of the 10 scales loaded on Factor 1. Loadings heavily on this factor were scales related to Information, such as information of decision-making process, information about self, about the occupations, about obtaining additional information, and unreliable information. Loadings heavily on Factor 2 include Readiness scales, indecisiveness and dysfunctional myths. The third factor, named as Conflict, includes three scales: motivation, internal conflicts and external conflicts. The three Factors accounted for about 64.43% of the total variance.

For those undecided students, there were also three factors with eigenvalues greater than 1.0. Similar to the results for decided group of students, loadings heavily on Factor 1 include the same five scales related to Information plus indecisiveness in Readiness category. The scales loaded on Factor 2 are internal and external Conflicts. The third factor includes motivation and dysfunctional myth scales in the category of Readiness. The three Factors accounted for about 63.06% of the total variance.

Table 5 Factorial structure of the CDDQ on two groups

CDDQ Scales	Decided (n=178)			Undecided (n=289)		
	Factor I	Factor II	Factor III	Factor I	Factor II	Factor III
Lack of Readiness						
Lack of motivation (R1)			.714			.805
Indecisiveness (R2)		.597		.592		
Dysfunctional myths (R3)		.631				-.751
Lack of information						
About the process (L1)	.607			.783		
About the self (L2)	.745			.871		
About the occupations (L3)	.877			.815		
About additional info. (L4)	.923			.785		
Inconsistent information						
Unreliable information (I1)	.731			.790		
Internal conflicts (I2)			.616		.660	
External conflict (I3)		-.514	.604		.882	

Note. Factor loadings under .5 were not listed.

In addition to the factor analysis, a clustering algorithm called ADDTREE was conducted to test the empirical model proposed by Gati et al. (1996). Figure 1 presents the empirical structure of the 10 scales obtained by an ADDTREE analysis of the intercorrelation matrix shown in Table 1. The clustering structure in Figure 1 adequately summarizes the empirical relations among the scales: The linearly accounted-for variance by the distances in the clustering structures was 98.9%. The distance between any pair of scales in this clustering structure is represented by the sum of the horizontal segments on the shortest path connecting them. Thus, scales within the same cluster are generally more closely related to each other than those belonging to different clusters.

As can be seen in Figure 1, the 10 scales are grouped into three clusters except for the scale Lack of Motivation. The three major clusters, as proposed by Gati et al. (1996) are: “Lack of Readiness, Lack of Information, and Inconsistent Information.” The cluster of Lack of readiness includes, as expected, the scales of indecisiveness and dysfunctional myths. The cluster of Lack of Information includes the scales of lack of knowledge about the decision-making process, lack of information about self, lack of information about occupations, lack of information about obtaining additional information, and unreliable information. Finally, the cluster of Inconsistent Information includes two scales, internal conflicts and external conflicts.

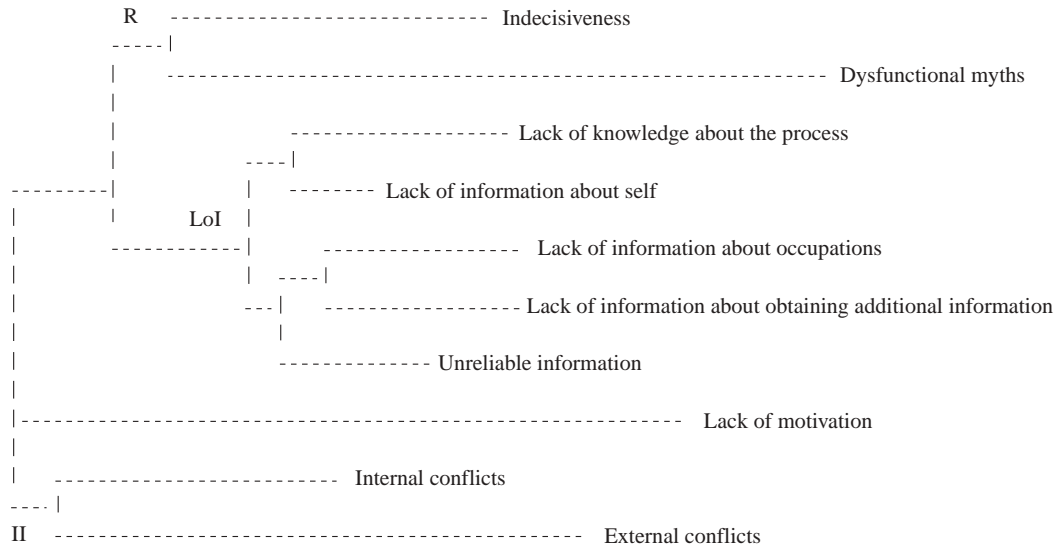


Figure 1. The empirical structure of the 10 difficulty scales (n=467).

Note. R= Readiness; LoI= Lack of information; II= Inconsistent information

Discussion

One of the main purposes of the study was to examine the properties and structure of the Chinese Version of the CDDQ. The results suggest that the empirical structure of the 10 CDDQ scales was similar to the theoretical model. The Chinese version of the CDDQ can be used for counseling and research purposes. More specifically, it can be used to obtain a global assessment of difficulty, or a more specific evaluation of the three major categories of difficulty.

In contrast to the theoretical model proposed by Gati et al. (1996), the scale “Lack of Motivation” in the current data was isolated from the other three major groups. It seems that motivation is not less important than information in making a career decision. However, the low correlations among motivation and other scales indicated that Motivation might not be appropriate to be included as one category of the career difficulties.

As far as the decision status and difficulties perceived by college students, the study indicated that over 20% of the freshmen were in the status of identity diffusion. They have not decided future directions, neither are they worried about their future. Buckham (1998) investigated 24 art undergraduates about their career planning. The results indicated that many of the students are lack of expectation about their futures. The attitude of unwilling to be in the labor market also lead to the negative culture amongst undergraduates. It might be necessary for college freshmen to engage more opportunities to think about their future.

However, students who have not decided about their future might be divided into several categories. In the present study, diffusion type of students have not made any decision for the

future career, neither do they worry about their future. Explorative type of students needs further information for making decision. However, for anxious type of undecided students, further information about the occupations might not be enough to enable them reach a good decision. Career difficulties perceived by these students need to be further examined.

Conclusions and Suggestions

The author of the present study developed the Chinese version of the “Career Decision-making Difficulties Questionnaire,” investigated the career-related problems encountered by college students, and tested the theoretical model of classification system for career decision difficulties. Four hundred and sixty-seven college students completed the Chinese version of the Career Decision-making Difficulties Questionnaire. Data obtained was analyzed by Chi-square, ANOVA, factor analysis, and ADDTREE. The results indicated the significant differences between decided and undecided students on their perceptions of career difficulties. The three-group classification system for career decision difficulties was generally supported by the data in this study. The three groups of career difficulties were renamed as Readiness, Information, and Conflicts.

As far as suggestions for future research, the relationship between anxiety and career difficulty perception could be examined. It's strongly suggested that anxiety correlated with career indecision (Stead & Watson, 1993). Further studies were suggested to examine the relationships between those variables in Chinese culture.

In addition, Valde (1996) indicated that there might be three subtypes of identity achievement, exploration, tentative commitment, and openness to alternatives. For those who have decided future career directions, the process of making a decision might be different. It's necessary to further examine their perceptions of career difficulties and influences of those perceptions on career decision-making process.

For counseling practitioners, the Career Decision-making Difficulties Questionnaire has the potential to serve as a diagnostic instrument in career counseling. The reliability and construct validity of the Chinese version of the CDDQ are good and could be applied for further research and counseling practice as well.

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收稿日期：2001年3月16日

接受刊登日期：2001年6月12日

國立臺灣師範大學教育心理與輔導學系
教育心理學報，民90，33卷，1期，87—98頁

大專學生對生涯決定困難的知覺分析

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摘 要

本研究主要目的有三：(1)發展「生涯決定困難量表」；(2)探討大專學生所面臨的生涯問題；(3)考驗Gati等人(1996)所提生涯決定困難分類系統的適用性。研究對象為467位大專學生，平均年齡為21.18歲。施測所得資料以 χ^2 、變異數分析、因素分析、及樹狀群聚分析(ADDTREE)等方式處理後，發現男女學生及不同年級學生所處的生涯決定狀態屬不同類型，而所知覺到的生涯決定困難也因不同的決定狀態而有不同。因素分析及樹狀群聚分析的結果也支持Gati等人所主張的三大類群決定困難分類模式。

關鍵詞：生涯決定、生涯困難、生涯問題