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AUTHOR Gribben, Carolyn A.; Keitel, Merle A.
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ABSTRACT

While previous studies have correlated career indecision with state and trait anxiety in college students, most researchers have examined the relationship between anxiety and career indecision without considering other variables. This paper, incorporating previous research on career indecision, profiles a study of a causal model of career indecision based upon D'Zurilla's (1986) social problem-solving theory. The social problem-solving process portrays how an individual typically attends to and thinks about problems and assesses his or her problem-solving skills. For this study, researchers administered measures of trait anxiety, state anxiety, problem orientation, problem-solving skills, and career indecision to 120 students from a multiethnic, urban community college. Results indicate that anxiety can contribute to career indecision. Trait anxiety exerted a stronger indirect effect on career indecision than a direct effect while state anxiety was found to directly influence career ambivalence. Surprisingly, problem-solving skills did not modify career indecision when the other variables in the model were statistically controlled. Conclusions suggest that problem-solving training which focuses on helping the college student develop a positive problem orientation may be more effective in reducing career indecision than actual training in problem-solving skills. Included are two tables and three figures which present statistical summaries and model conceptualizations. (RJM)

Career Indecision, Anxiety, and Social Problem Solving: A Path Analytic Model

Carolyn A. Gribben

Kingsborough Community College

Merle A. Keitel

Fordham University

Running Head: CAREER INDECISION

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Abstract

This study tested a causal model of career indecision based upon D'Zurilla's (1986) social problem-solving theory and the findings of previous research on career indecision. Measures of trait anxiety, state anxiety, problem orientation, problem-solving skills, and career indecision were administered to 120 community college students from a multiethnic, urban, community college. Results indicated that both state anxiety and problem orientation individually mediated the relationship between trait anxiety and career indecision. The implication of these results is that inclusion of problem orientation variables in models of career indecision may increase our understanding of the nature and antecedents of career indecision.

Career Indecision, Anxiety, and Social Problem Solving

Career indecision has been correlated with state and trait anxiety in college students (e.g., Fuqua, Newman, & Seaworth, 1988; Fuqua, Seaworth, & Newman, 1987; Hartman, Fuqua, & Blum, 1985, O'Hare & Tamburri, 1986). However, most studies have examined the relationship between anxiety and career indecision in isolation from other variables. A fuller understanding of career indecision might be gained by exploring how cognitive variables mediate the relationship between anxiety and career indecision (Fuqua, Newman, & Seaworth, 1988). One cognitive variable that has been related to career indecision is self-appraisal of problem-solving ability. Larson and Heppner (1985) found that individuals who appraised their own problem-solving abilities positively (as compared to individuals who appraised their problem-solving abilities negatively) endorsed fewer reasons for their career indecision, were more likely to have related their abilities to occupations, were less likely to describe the cause of indecision as external to

themselves, and were more confident about career decision making.

Another limitation of past research on career indecision is the lack of an underlying theoretical framework for hypothesis development and testing. Slaney (1988) stated that the lack of a theoretical frame of reference has led to simplistic views of the nature of career indecision, with important psychological correlates explored only sporadically. Social problem-solving theory (D'Zurilla, 1986; D'Zurilla & Nezu, 1982) was seen as a viable theoretical basis for understanding the relation between career indecision and anxiety for several reasons. First, as noted, problem-solving appraisal has been correlated with career indecision (Chartrand, Rose, Elliott, Marmarosh, & Caldwell, 1993; Larson & Heppner, 1985; Larson, Heppner, Ham, & Dugan, 1988). Second, social problem-solving theory may help to explain how the social problem-solving process mediates between the problem (i.e., career indecision) and emotions (i.e., anxiety).

Finally, the research on career indecision has been criticized for few studies of minorities (Larson, Piersel, Imao, & Allen). The current investigation utilizes a multiethnic sample to reexamine the relationships among anxiety, problem-solving variables and career indecision.

Social Problem Solving

D'Zurilla (1986) defines social problem solving as a cognitive-affective-behavioral process through which a person identifies effective means of problem-solving coping (i.e., the problem-solving process and situation-specific coping responses) with problems occurring in everyday living (D'Zurilla, 1990; Nezu & D'Zurilla, 1989). Stress is seen as a function of the reciprocal relationships among problems, emotions, and coping. The social problem-solving process includes problem orientation cognitions (i.e., how an individual typically attends to and thinks about problems, such as whether the problem is viewed as a challenge or a threat), and problem-solving skills (i.e., problem definition and formulation, generation of alternative solutions, decision making, and solution implementation

and verification). According to social problem-solving theory, a person's ability to cope effectively with specific problems (e.g., the need to choose a career) is determined by his or her generalized view of problems (e.g., viewing a problem as a challenge verses a threat), emotional responses to problems, and problem-solving skills. Based on the transactional/problem-solving model of stress, as well as prior research on career indecision, a causal model of career indecision was proposed. The causal model presented in the current study (Figure 1) suggests that the problem-solving process mediates the relationship between anxiety and career indecision. This model suggests that emotional responses may affect the nature of problem orientation cognitions, which, in turn, may influence the intensity of the initial emotional response (D'Zurilla, 1986).

Applied to the relationship between anxiety and career indecision, the transactional model would suggest that trait anxiety may lead to negative problem orientations, and these negative problem orientations may increase state anxiety about career decision

making. State and trait anxiety are also hypothesized to affect career indecision directly (Fuqua, Newman, & Seaworth, 1988; Fuqua, Seaworth, & Newman, 1987; Hartman, Fuqua, & Blum, 1985; O'Hare & Tamburri, 1986). Trait anxiety may also directly affect state anxiety (Spielberger, 1972). In turn, state anxiety may influence one's perceptions of one's problem-solving skills (D'Zurilla, 1986). For example, a high level of state anxiety about making a career choice may lead to difficulties in clearly defining the problem, generating alternative solutions, and decision making. When individuals perceive deficiencies in their problem-solving skills, their level of career indecision is hypothesized to increase.

Methods and Procedure

Sample

One hundred twenty (67 female and 53 male) full-time, matriculated, traditional-age undergraduates (ages 17-23) attending a multiethnic, urban, commuter community college comprised the sample. Incomplete data from an additional thirteen students were eliminated. Students were sampled from freshman

orientation classes and a psychology class. Most students (82%) were first semester freshmen, but 18% had completed one or more semesters. Students were White (47%), Hispanic (28%), Black (18%), Asian (4%), and Other (3%). All students were single and approximately 50% of the students worked at part-time jobs, while 50% were not employed. Ninety percent of the students indicated that making a career decision was very important.

Procedure

Participation in the study was completely voluntary and the students did not receive extra credit for participating. The measures were administered in class in the following order: Demographic Questionnaire, Career Decision Scale, Importance Scale, State Anxiety Scale, Social Problem-Solving Inventory, and Trait Anxiety Scale. The State and Trait Anxiety Scales were separated to reduce the correlations among the scores (O'Hare, 1985).

Instruments

Career Decision Scale (CDS). The CDS (Osipow, Carney, Winer, Yanico, and Koschier (1976) was designed

to measure career indecision and its antecedents on a 4-point Likert scale ranging from "exactly like me" (scored 4) to "not at all like me" (scored 1). Indices of vocational/educational decidedness and career indecision are provided. Test-retest reliability coefficients for the CDS were .90 and .92 for the Indecision Scale, and the manual cites over 40 studies which have examined the construct validity of the CDS (Osipow, 1987). Support for concurrent validity is provided by studies which have found significant correlations between the CDS and other instruments that measure career indecision (Osipow, 1987).

State-Trait Anxiety Inventory (STAI). The revised STAI (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1977) consists of two 20-item Likert self-report scales which measure anxiety as stable individual differences in anxiety proneness (trait anxiety or T-Anxiety), or as fluctuating feelings of tension (state anxiety or S-Anxiety). The instructions on the S-Anxiety scale were modified to reflect feelings about making a career decision, in accordance with the directions in the manual. Research with the STAI provides evidence of

concurrent, convergent, divergent, and construct validity of the STAI scales (Spielberger, Gorsuch, Lushene, Vagg, & Jacobs, 1983). For example, the STAI has been found to discriminate between normals and psychiatric patients for whom anxiety is a major symptom. Small nonsignificant, correlations were found between the STAI and unrelated constructs such as academic aptitude and achievement.

Reliability data for the original as well as the revised STAI appear in the revised test manual. Stability coefficients for the Trait Anxiety Scale based on 3 different groups of undergraduate students ranged from .73 to .86 with retest intervals of 1 hour, 20 days, and 104 days. Test-retest coefficients for the State Anxiety Scale among college students ranged form .16 to .54. Stability is not expected to be high given that state anxiety is not conceptualized as a stable characteristic (Spielberger et al, 1983). Alpha coefficients for Form Y State and Trait anxiety scales computed by the KR20 formula were .90 and above for college students (Spielberger et al, 1983).

Social Problem-Solving Inventory (SPSI). The SPSI (D'Zurilla & Nezu, 1990) is a 70-item self-report measure of social problem-solving ability, which contains two major scales, the Problem Orientation Scale (POS) and the Problem-Solving Skills Scale (PSSS). Items on the SPSI reflect either a positive or negative cognitive, affective, or behavioral response in a real-life problem-solving situation. Items are rated on a 5-point scale ranging from 1 (not at all true of me) to 5 (extremely true of me). High scores on the POS are associated with (a) viewing problems as a challenge rather than a threat, (b) believing in one's abilities to solve problems, (c) believing that effective problem solving requires time and effort, and (d) tending to approach rather than avoid problems. High scores on the PSSS are associated with a rational problem-solving coping style, where individuals systematically apply adaptive problem-solving skills (D'Zurilla & Nezu, 1990). Test-retest correlation coefficients computed on a sample of 89 undergraduates tested three weeks apart for the SPSI subscales ranged from .73 - .86, and alpha coefficients ranged from

.81 - .93 for the subscales. The overall test-retest coefficient was .87. High internal consistency data have been reported. The alpha coefficient for the total SPSI was .94.

Concurrent, construct, and predictive validity data for the SPSI have been reported (D'Zurilla & Nezu, 1988). Concurrent validity was assessed by comparing the SPSI to the Problem-Solving Inventory (PSI). The SPSI is scored in the opposite direction to the PSI. Based on a sample of 105 college students, there was a significant correlation between PSI and total SPSI scores ($r = -.75$). SPSI scores were found to be unrelated to measures of general intellectual and academic ability and performance in college students. Additionally, SPSI scores were found to change in the expected direction following training in problem-solving components (D'Zurilla & Nezu, 1988).

Demographic Data Sheet. Demographic data were collected for descriptive purposes. Subjects were asked to indicate: sex, age, marital status, race/ethnicity, semester of entrance, curriculum,

student status, and number of hours per week of employment.

Importance Scale. Subjects were asked to indicate how important making a career decision was, ranging from (1) not at all important, to (3) very important.

Results

Preliminary t-tests indicated no significant differences among the research variables as a function of gender. Therefore, the scores of male and female subjects were combined in all subsequent analyses. T-tests were conducted to assess differences between the White (majority) and the combined Black/Hispanic (minority) groups. No significant differences between Black/Hispanic (minority) and White (majority) groups emerged, with the exception of problem-solving skills ($t = -2.30$, $p<.05$). It is important to note that the problem solving-skills variable was not significantly related to the other variables in the model. Therefore, the path analyses were conducted collapsing across majority and minority groups.

Table 1 contains the Pearson product-moment correlations among the variables, as well as their

means and standard deviations. The results of the path analysis appear in Figure 2. Model-fitting procedures revealed that the linkage between problem orientation and career indecision was necessary in order for the model to fit the data, and is thus included in Figure 2.

Although trait anxiety scores were originally positively correlated with career indecision scores (r = .38; p<.01), the direct effect was actually nonsignificant (P = -.06, p>.05). Trait anxiety had an indirect effect on career indecision through its effects on problem orientation and state anxiety. Problem-solving skills did not play a mediating role between trait anxiety and career indecision. The original correlation between problem orientation and career indecision (r = -.47, p<.01) remained significant when the effects of the other variables in the equation were statistically controlled (P = -.40, p<.01). Neither state anxiety nor problem-solving skills played a mediating role in the relationship between problem orientation and career indecision. The original relationship between state

anxiety and career indecision (r = .42, p<.01) remained significant after the effects of the other variables were statistically controlled (P = .31, p<.05). Although the problem-solving skills variable was originally negatively correlated with career indecision (r = -.18, p<.05), this relationship proved to be spurious after the effects of the other variables in the model were statistically controlled (P = 0, p = 1).

The results of the path analysis led to the reduction of the model appearing in Figure 3. In this reduced model, the problem-solving skills variable and the direct linkages between trait anxiety and career indecision, and between problem orientation and state anxiety were eliminated. A chi-square analysis provided the justification for omitting these linkages (X (2) = 0, p =.95). As shown in Figure 3, the multiple correlation for career indecision was R = .54; thus the reduced model accounted for approximately 30% of the variance in career indecision. Trait anxiety accounted for 28% of the variance in career indecision, and 48% of the variance in problem orientation. The

decomposition table for the analysis for the reduced model appears in Table 2.

Discussion

The present investigation suggests that problem orientation variables be included in models of career indecision. Problem orientation was found to mediate the relationship between trait anxiety and career indecision. Thus, students with a positive problem orientation may view career decision making as challenging, possess confidence in initiating career decision-making activities, and therefore be less likely to experience career indecision than students with a negative problem orientation. In contrast, students with a negative problem orientation may view career decision making as threatening, and may be likely to avoid making a decision. Larson and Heppner's (1985) finding that college students with positive problem-solving appraisal styles were less likely to endorse career indecision test items supports problem orientation as a critical variable. Further studies should examine which particular problem appraisals contribute to career indecision.

The results of the current investigation are consistent with those of a prior path analytic study which found that trait anxiety had a stronger indirect effect on career indecision than a direct effect (Hartman, Fuqua, & Blum, 1985). The results of this study also support Goodstein's (1965) theory that anxiety can be an antecedent to career indecision, inhibiting the ability to attend to the task of making a career decision. Mendonca and Siess (1976) also suggested that anxiety was an antecedent to career indecision, and inhibited problem solving. Trait anxiety may inhibit the ability to attend to a problem, and carry out the cognitive, affective, and behavioral tasks (e.g., self-efficacy beliefs, hopefulness, approach behavior) necessary for facilitating a positive problem orientation. In turn, negative problem orientations may lead to career indecision.

The finding that state anxiety affected career indecision directly supported results from previous studies which have consistently established a relationship between career indecision and state anxiety (Berger-Gross, Kahn, & Weare, 1983; Fuqua &

Hartman, 1983; Fuqua, Newman, & Seaworth, 1988; Fuqua, Seaworth, & Newman, 1987; Hartman & Fuqua, 1983; Hartman, Fuqua, & Blum, 1985; Hawkins, Bradley, & White, 1977; Mendonca & Siess, 1976; O'Hare & Tamburri, 1986).

Surprisingly, problem-solving skills did not have an effect on career indecision when the effects of the other variables in the model were statistically controlled. Perhaps the various problem-solving skills are more useful in teaching a prescriptive approach to career decision making than in exploring antecedents of career indecision (O'Hare, 1985). In any case, since the present investigation found differences between minority and majority groups on the problem-solving skills variable, further exploration is warranted.

In conclusion, the present study suggests that problem-solving training which focuses on helping the college student develop a positive problem orientation may be more effective in reducing career indecision than actual training in problem-solving skills. Future investigations of career indecision should explore other variables which have been correlated with career

indecision, such as identity (Hartman, Fuqua, & Blum, 1985). These variables could be included in causal models of career indecision.

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Table 1

Pearson Product-Moment Correlation Matrix and Means and Standard Deviations (N=120)

	Trait	PO	State	PSS	CI
Trait	1.00	-.69***	.53***	-.27**	.38***
PO		1.00	-.36***	.34***	-.47***
State			1.00	-.19*	.42***
PSS				1.00	-.18*
CI					1.00
Mean	43.08	73.43	44.86	91.04	30.58
SD	9.65	21.24	14.18	22.45	9.81

Note. Trait = trait anxiety; PO = problem orientation; State = state anxiety; PSS = problem-solving skills; CI = career indecision.

*p<.05. **p<.01. ***p<.001.

Table 2

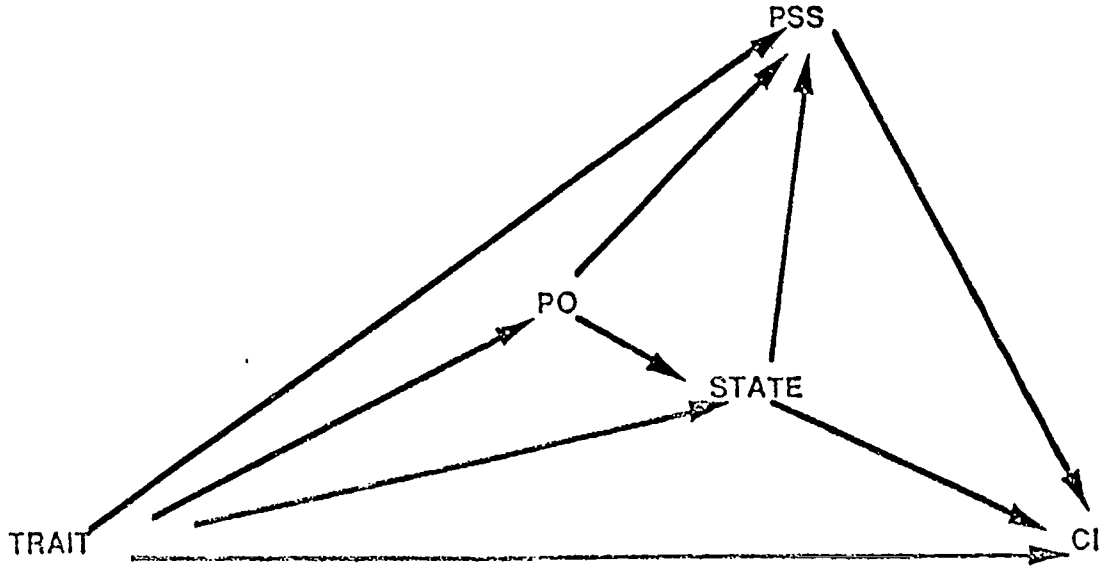
Decomposition Table for the Reduced Path Model

Measures			Causal			Spurious
X	Y	r	Direct	Indirect	Total	
1	2	-.69	-.69	0.00	-.69	0.00
1	3	.53	.53	0.00	.53	0.00
1	4	.38	-.06	.44	.38	0.00
2	4	-.47	-.40	0.00	-.40	-.07
3	4	.42	.31	0.00	.31	.11

Note. 1 = trait anxiety; 2 = problem orientation; 3 = state anxiety; 4 = career indecision.

Figure 1

Conceptual Model Indicating Relations Between Trait Anxiety, State Anxiety, Problem Solving, and Career Indecision Within a Path Analytic Framework.

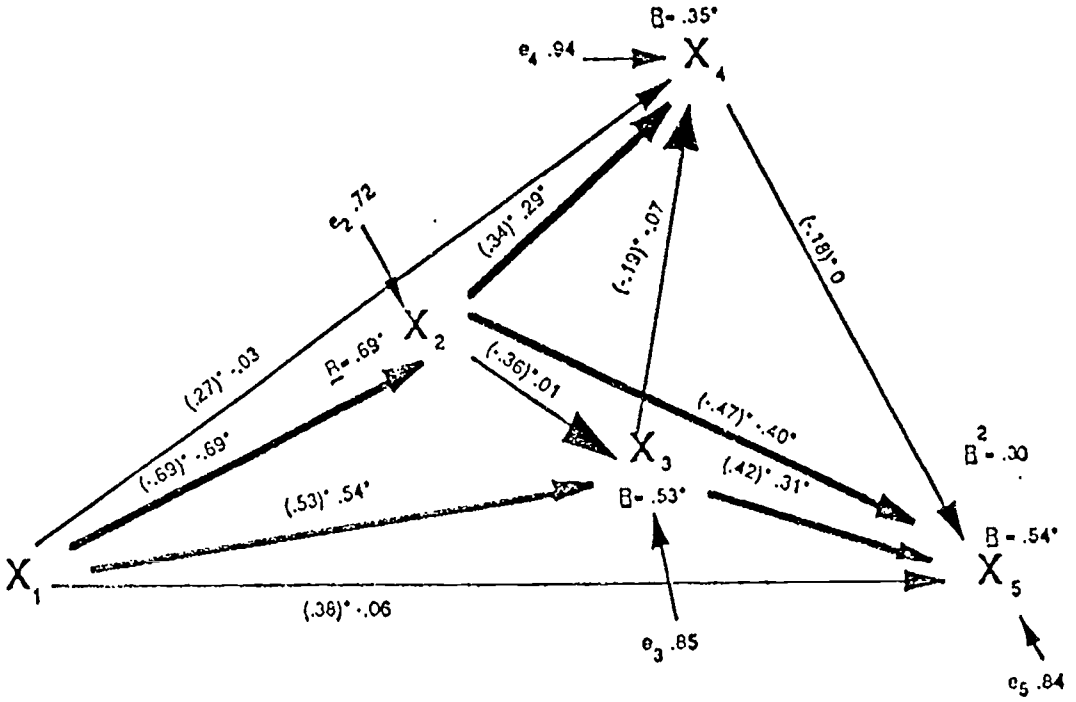


KEY:

TRAIT	=	trait anxiety
STATE	=	state anxiety
PO	=	problem orientation
PSS	=	problem-solving skills
CI	=	career indecision

Figure 2

Conceptual Model Indicating Relations Between Trait Anxiety, State Anxiety, Problem Solving, and Career Indecision Within a Path Analytic Framework.



KEY:

X_1 = trait anxiety

X_2 = problem orientation

X_3 = state anxiety

X_4 = problem-solving skills

X_5 = career indecision

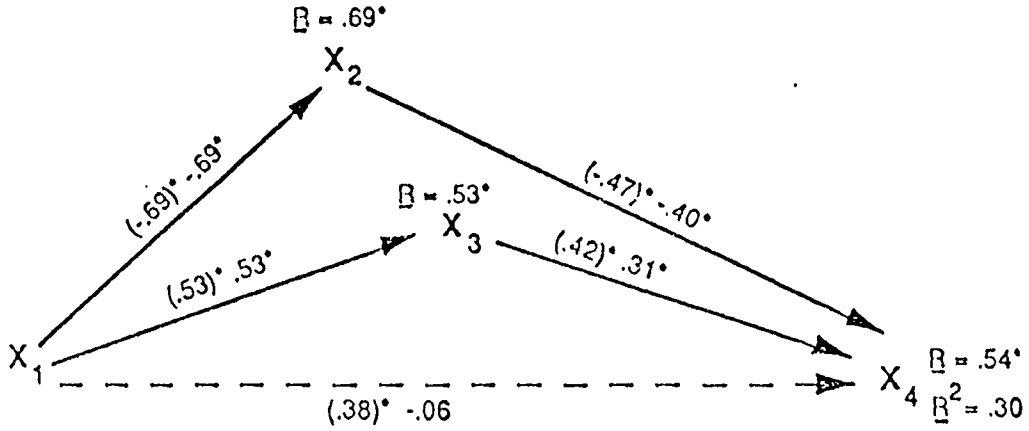
Note. The Pearson product-moment correlation coefficients appear inside parentheses, and the path coefficents appear outside parentheses.

e = error term, R = multiple correlation, R^2 =coefficient of determination.

*p<.05.

Figure 3

Reduced Model Indicating Relations Between Trait Anxiety, State Anxiety, Problem Orientation, and Career Indecision Within a Path Analytic Framework.



KEY:

X_1 = trait anxiety

X_2 = problem orientation

X_3 = state anxiety

X_4 = career indecision

Note. The broken-lined arrow between trait anxiety and career indecision is not part of the reduced model. However, it was included to highlight the fact that their true relationship was indirect, through mediation of problem orientation and state anxiety.

The Pearson product-moment correlation coefficients appear inside parentheses, and the path coefficients appear outside parentheses. R = multiple correlation, R^2 = coefficient of determination.

*p<. 05