

Career Commitment: Construction of a Measure and Examination of Its Psychometric Properties

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The design, development, and evaluation of the 12-item *Career Commitment Measure* (CCM) is reported. Measure construction was conducted in three major phases culminating with a field test of 476 respondents employed in various work settings. Consistent with its predefined content domain, a principal-axes factor analysis of the CCM produced three dimensions: Career Identity, Career Planning, and Career Resilience. Coefficient alpha reliabilities for the three dimensions ranged from .79 to .85. The CCM detected differences in career commitment levels associated with varying degrees of professionalism across occupational groups. Factor analytic results also supported the CCM's discriminant validity. Finally, an analysis of correlate relations generally supported the CCM's construct validity. © 1994 Academic Press, Inc.

The importance of careers to individuals, organizations, and society has led to increased attention being devoted to career commitment (e.g., Bedeian, Kemery, & Pizzolatto, 1991). Changing employee loyalties (Castro, 1989) and higher education levels (Burris, 1983) have furthered this interest. With an increase in mergers, acquisitions, and layoffs (Bremner, Rebello, Schiller, & Weber, 1991), many individuals are unable to depend on a single organization to sustain an entire career (Nussbaum, 1991).

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To cope with such uncertainty, better educated employees have become increasingly committed to their own careers. As Colarelli and Bishop (1990) explain, "commitment to an internally defined career [has] become an important source of occupational meaning as organizations become more fluid and less able to guarantee employment security" (p. 159).

A key variable in several integrative models of organizational behavior (e.g., Mobley, Griffeth, Hand, & Meglino, 1979; Price & Mueller, 1981), career commitment has been related to various work-related outcomes. For example, it has been positively associated with both skill development (Aryee & Tan, 1992) and job performance (e.g., Darden, Hampton, & Howell, 1989) and negatively correlated with actual turnover (Bedeian et al., 1991). At the same time, in Mueller, Wallace, and Price's (1992) view, career commitment is becoming increasingly recognized as integral to the study of all aspects of the so-called employment relationship (which they broadly define to include everything that happens between initial entry and exit).

Over the years, researchers have studied various forms of work commitment. In the process, over 25 work commitment measures have been generated (Morrow, 1983). Unfortunately, many of these measures are partially redundant or indistinct from one another (Morrow, Eastman, & McElroy, 1991). In an attempt to clarify the resulting confusion, Morrow (1983) identified five predominant work commitment foci: (a) career commitment (e.g., career identity), (b) job commitment (e.g., job involvement), (c) organizational commitment (e.g., loyalty to a company), (d) individual work values (e.g., Protestant work ethic), and (e) union commitment (e.g., loyalty to a bargaining unit). Of these five foci, the career commitment construct has lagged developmentally due to a lack of an established measure (Morrow & Wirth, 1989).

Operationalizing career commitment has been problematic because of its vague boundaries. This vagueness seems to result, in part, from a lack of agreement about what constitutes a career. At least three conceptions of "career" exist. One conception describes a career as a series of jobs held during an individual's lifetime (Greenhaus, 1987). This conception, however, is difficult to operationalize because of its breadth. A second conception is synonymous with professionalism, meaning identification with and involvement in one's profession (Hall, 1976). This emphasis is quite narrow since only about 12.7% of the U.S. labor force is professionally employed (U.S. Department of Labor, 1991). A final conception offered by Blau (1985) suggests that careers are vocations of which professions are but one type.

Based on the latter conception, career commitment can be defined as "one's attitude toward one's vocation, including a profession" (Blau, 1988, p. 295). Incorporating a vocational, as well as professional emphasis, this definition offers a broad, but limited construct representation. Using this

definition, Blau (1985, 1988) developed a career commitment measure which preliminary evidence suggests possesses encouraging psychometric properties (Chartrand & Camp, 1991). This assessment, however, is based on relatively few data sets.

Moreover, certain concerns remain with Blau's (1985) measure. First, the high correspondence reported by Blau (1989) between career commitment and career withdrawal cognitions may be due to items in his measure emphasizing intention-to-remain in one's vocation. Two example items from the measure are, "If I could go into a different profession other than the (newspaper or insurance) profession which paid the same, I would probably take it" and "I like this vocation (newspaper or insurance profession) too well to give it up" (Blau, 1988, pp. 290-291). This overlap of intention-to-remain and career commitment items parallels a concern involving construct contamination in the Organizational Commitment Questionnaire (OCQ; Mowday, Steers, & Porter, 1979). With the OCQ, the relation between organizational commitment and desire-to-maintain membership is artifactual in that the OCQ measures commitment in terms of turnover intentions. With respect to Blau's (1985) measure, research is needed to determine the degree to which career commitment and career withdrawal cognitions can be distinguished empirically, as well as conceptually.

Second, in developing his career commitment measure, Blau (1985) extracted the best items from two existing instruments emphasizing work attitudes and career orientation. Whereas such an approach is generally considered acceptable in generating an initial pool of items, unless final item selection is based on systematic development procedures, there is no assurance that an intended measure possesses content validity (DeVellis, 1991). Indeed, the extent to which the item content included in Blau's (1985) unidimensional measure adequately samples the career commitment domain has been questioned (Morrow & Goetz, 1988). Blau (1989) himself observes that career commitment is part of two components of London's (1983) theory of career motivation. These components are career resilience and career identity. Career resilience, the persistence component of commitment, has been used to tap commitment in the face of adversity (Lydon & Zanna, 1990). Career identity, the directional component of commitment embodying one's emotions, has been employed to tap both career commitment (Colarelli & Bishop, 1990) and professional commitment (Morrow & Wirth, 1989). Career planning, a component London (1983) identifies as being relevant to several career dimensions, has likewise been utilized to tap career commitment (Morrow, 1983), as well as career salience (Greenhaus, 1971). According to London (1985), career planning reflects the energizing component of career commitment.

Third, as noted, the Blau (1985) measure was developed by extracting the best items from two existing instruments. Consequently, beyond its

uncertain content validity, the internal (i.e., interitem) statistics of the Blau measure may well represent upper-bound or inflated estimates. Moreover, because items from the Blau (1985) measure were extracted from other instruments, ideally it should have been demonstrated to possess external measurement properties at least slightly better than the two instruments from which it was formed so as to provide evidence of its superior external validity (cf. Smith, Reilly, & Midkiff, 1989). No such statistical analysis has ever been provided.

Blau and his associates (Blau, Paul, & St. John, 1993), have recently developed a revised "occupational commitment scale," once again extracting items from existing instruments to construct this new measure. As a consequence, it is equally subject to the same content validity and reliability concerns as its predecessors. The purpose of the reported research was to develop and evaluate a psychometrically sound *Career Commitment Measure*, hereafter labelled the CCM.

Following Hall (1971), career commitment is conceptualized here as one's motivation to work in a chosen vocation. Further, building on the work of London (1983, 1985), it is seen as a multidimensional construct composed of three components: career identity, establishing a close emotional association with one's career; career planning, determining one's developmental needs and setting career goals; and career resilience, resisting career disruption in the face of adversity.

Since Blau's (1985) measure and the CCM both gauge career commitment, convergent validity, indicated by high positive correlations between the measures, is expected. However, given their differences in theoretical development and contrasting structures (unidimensional versus multidimensional), the CCM should reveal theoretically relevant relations masked by the Blau (1985) measure's unidimensional structure. Three hypotheses are advanced to test this possibility.

Career commitment (Blau, 1985), has been found to be positively but weakly correlated with age.

Hypothesis 1: We hypothesize that this weak relation is due to positive correlations between age and both career identity (as career orientation solidifies) and career resilience (as fewer career options are available) and a negative correlation between age and career planning (upon entering the stabilization stage in one's career).

Blau (1985) reports that career commitment is more strongly related to tenure in career field than to age.

Hypothesis 2: We hypothesize that career identity and career resilience will be more strongly associated with tenure in career (due to their common career focus) than to age.

Blau (1985) has reported a weak positive correlation between organization tenure and career commitment. This weak association may develop over time as a result of identifying more with one's employer (Gouldner,

1957) than one's career (i.e., career identity) and from passively allowing one's work environment to determine one's career progression (Gould, 1979), rather than actively planning one's career (i.e., career planning).

Hypothesis 3: Thus, we hypothesize that career identity and career planning should be negatively related to organizational commitment.

Further speculation suggests two additional hypotheses. Education level has been found to be positively related to general career commitment (Colarelli & Bishop, 1990).

Hypothesis 4: We hypothesize that this association is due to positive correlations between education and both career identity and career planning. Individuals with more education would be expected to display more career-related knowledge acquisition behaviors (Grover, 1992) and engage in more career planning.

Blau (1985) reports a positive correlation between professionalism and career commitment.

Hypothesis 5: Following the same logic as expressed with respect to education level, we hypothesize that this relation results from increased career identity and career planning associated with varying degrees of professionalism across occupational groups. More specifically, it would be expected that occupational groups higher in professionalism would have higher mean scores in both career identity and career planning than their less professional counterparts.

In addition, further evidence of discriminant validity would be shown by the CCM assessing distinct construct dimensions.

Hypothesis 6: In the present research, we hypothesize that the three CCM dimensions are distinct from affective organizational commitment and job involvement.

Finally, drawing on relevant theory and research, four additional hypotheses for investigating construct validity are advanced.

Hypothesis 7: Whereas education level has been found to be positively related to career commitment (Colarelli & Bishop, 1990), it should be negatively correlated with affective organizational commitment (Angle & Perry, 1981).

Hypothesis 8: Age should be more strongly positively correlated with affective organizational commitment (Mowday et al., 1982) than with career commitment (Parasuaman & Nachman, 1987).

Hypothesis 9: Tenure in career field should show a higher, positive correlation with career commitment than with organizational commitment (Blau, 1985) since career commitment should also increase over time.

Hypothesis 10: Organization tenure should display a stronger, positive correlation with affective organizational commitment (Angle & Perry, 1981) than with career commitment (Colarelli & Bishop, 1990).

Hypothesis 11: Organizational commitment is associated more closely with a job (Mowday et al., 1979) while career commitment is associated

with broader referents (e.g., vocation, occupation, profession). Therefore, career withdrawal cognitions should be more strongly and negatively correlated with career commitment than affective organizational commitment (Blau, 1985), whereas job withdrawal cognitions should be more strongly and negatively correlated with affective organizational commitment (Mowday et al., 1979) than career commitment (Aryee & Tan, 1992).

METHOD

Measure Construction

Construction of the CCM occurred in three major phases. As an initial step in measure construction, 87 items were generated to represent the full range of the career commitment content domain. Attention was directed at delineating each of the three predefined career commitment dimensions, avoiding overlap between dimensions as well as redundancy with other work commitments. Four knowledgeable judges served as a review panel to assess items for clarity and meaningfulness. A total of 36 items were retained on the basis of being correctly classified into their targeted dimensions by all four judges.

In Phase 2, two sequential pilot studies (A and B) were conducted to determine the factor structure of the item pool and the reliabilities (Cronbach α) of the intended instrument. Crowne and Marlowe's (1964) 33-item (true/false) measure of social desirability (Kuder-Richardson 21 reliability = .74) was administered in Pilot Study A.

In Phase 3, a field test of the instrument was conducted with respondents employed in various work settings. Validity was assessed on the basis of convergent validity, discriminant validity, and construct validity.

Samples and Procedures

Separate samples were used in the two Phase 2 pilot studies. A third sample was used in the Phase 3 field test. Surveys in the two pilot studies were administered to individuals representing various work settings, as well as to selected MBA students and undergraduates to ensure the likelihood of sufficient score variation in item responses. For the same reason, surveys in the field study were also administered to subjects in various work settings. Table 1 provides a summary description of the pilot and field study samples, measures administered, and procedures and contexts of administration.

For the field test, an estimation sampling procedure intended to include occupational groups varying in such professional attributes as technical training, advanced education, formal testing and control of admission, professional associations, codes of conduct, and sense of calling (Benveniste, 1987) was enacted. Of the 1292 field surveys distributed, 476 were returned for a response rate of 36.8%, which exceeds the traditional return

TABLE 1
 Descriptions of Pilot and Field Study Samples, Measures Administered, and Procedures and Contexts of Administration

Study	n	Respondent descriptions		Average number of hours worked per week	Measures administered	Procedures and administration context
		By setting	By occupation			
Pilot study A	304	Loan office	Clerical (24%)	25.4	36 career commitment items	Non-student respondents surveyed in their workplaces
		Chemical plant	Professional/kindred (15.8%)			
		Law firm	Managers/supervisors (15.1%)			
		MBA students (2 universities)	Service (12.9%)			
		Undergraduate students (3 universities)	Sales (12.7%) Other (19.5%)			
Pilot study B	263	Public sector human resources department	Managers/supervisors (26.2%)	30.7	20 career commitment items	Non-student respondents surveyed in their workplaces
		Public high school	Clerical (24.3%)			
		Financial institution	Professional/kindred (22.1%)			
		Fast-food restaurant	Service (10.6%)			
		MBA student (2 universities)	Other (16.8%)			
		Undergraduate students (3 universities)				Student respondents surveyed in the classroom

Field study	476	Small teaching university in the mid-south ($n = 141$; response rate = 23.8%)	E.g., teaching faculty, counselor, admissions officer	>35	CCM Blau's career commitment Affective organizational commitment Job involvement Job withdrawal cognitions	Nursing home, packaging plant, & computer service employees provided with pre-stamped surveys distributed by unit manager with instructions to return surveys directly to researchers
		Large research university in the southeast	E.g., dietician, supervisor			
		<ul style="list-style-type: none"> • Food service workers ($n = 21$; response rate = 14.5%) • Engineering services ($n = 14$; response rate = 60.9%) • D.V.M. ($n = 94$; response rate = 55.0%) 	E.g., computer analyst, clerk			
		Nursing home ($n = 22$; response rate = 44.0%)	E.g., lecturing faculty clinician			University employees surveyed using campus mail
		Packaging plant ($n = 6$; response rate, 26.1%)	E.g., practical nurse nursing assistant Truck loader, truck driver			
		Public school computer service ($n = 8$; response rate = 66.7%)	E.g., data-entry operator, clerk			
		State library association—Academic section ($n = 137$; response rate = 66.5%)	E.g., reference librarian, circulation librarian			Library and personnel association members surveyed by mail using pre-stamped surveys
		Personnel association ($n = 33$; response rate = 47.8%)	E.g., personnel manager, human resource specialist			

rate of 20 to 30% (Peterson, 1982). Over 85% of the field study respondents were college graduates, 66% were married, 60.5% were women, and 95.8% were employed for more than 35 hours per week. Average respondent age was 43 years. Average tenure was 119 months in organization, 182 months in line of work, 80 months in present position, and 47 months with supervisor.

Surveys in both pilot studies and the field study were accompanied by a cover letter encouraging participation and assuring respondent confidentiality. The following prefatory instructions introduced the surveys' first section: "This survey begins with statements about your **LINE OF WORK** or **CAREER FIELD** in which you are currently employed. You may consider line of work/career field as having the same meaning as **occupation, profession, or vocation.**" The final section in all surveys requested information pertaining to **education level, chronological age, tenure in career field, organization tenure, gender, and marital status.** Age was measured in years, whereas the two types of tenure were measured in months. In both pilot studies, a 5-point rating scale was used to measure career commitment responses (1 = *strongly disagree* to 5 = *strongly agree*).

Field Study Measures

The following measures were used in the field study to assess convergent, discriminant, and construct validities.

Career commitment. **Career commitment** was gauged using the seven-item scale developed by Blau (1985; $\alpha = .87$) and the developmental CCM ($\alpha = .81$). Both measures used a *strongly disagree* (1) to *strongly agree* (5) response format. The internal consistencies on Blau's (1985) measure were reported to be .84 and .83 on insurance and newspaper samples, respectively (Blau, 1988). Sample items include, "If I could do it again, I would not choose to work in this career field" and "I definitely want a career for myself in this industry."

Affective organizational commitment. **Affective organizational commitment** ($\alpha = .89$) was measured by an eight-item scale developed by Meyer and Allen (1984). McGee and Ford (1985) found it reliable and offer support for its construct validity. A *strongly disagree* (1) to *strongly agree* (5) response format anchored the measure. A sample item is "I really feel as if this organization's company's problems are my own."

Job involvement. **Job involvement** ($\alpha = .87$) was tapped using a 10-item measure developed by Kanungo (1982). However, one of its items (gauging job detachment) has been shown to be unreliable and was deleted from the present application (Paterson & O'Driscoll, 1990). The remaining nine items were presented using a scale with responses ranging from *strongly disagree* (1) to *strongly agree* (5). A sample item is "I am very much involved personally in my job."

Withdrawal cognitions. **Job withdrawal cognitions** is a 3-item measure that can be linearly summed ($\alpha = .79$; Michaels & Spector, 1982). Blau (1985) reported that a similar instrument showed an internal consistency of .70 at time-1 and .73 at time-2, 7 months later, and a test-retest reliability of .60. The items are "I think often about quitting this job," "I plan to stay in this job for some time" (reverse scored), and "I intend to look for a different job." This measure gauges an individual's thoughts of quitting one's present job, intention to search for another job, and intent to quit. **Career withdrawal cognitions** is an identical 3-item measure as job withdrawal cognitions with the words "line of work/career field" replacing "job" ($\alpha = .82$; Michaels & Spector, 1982). For a similar instrument, Blau (1985) reported an internal consistency of .67 and .71 with a test-retest reliability of .57. Both measures used a *strongly disagree* (1) to *strongly agree* (5) response format.

RESULTS

Pilot Study A

The pool of 36 career commitment items defined in Phase 1 was examined using principal-axes factor analysis with oblique rotation. Six factors were extracted having eigenvalues greater than 1 (see Table 2). Individual factors were identified by those items loading $\geq |.40|$ on each factor. Factor 1 was identified as Career Identity (5 items); Factor 2 as Career Resilience (5 items), and Factor 5 as Career Planning (4 items). Factor 3 loaded on two items characterized by the judges as career resilience and two items characterized as career planning. This factor was labeled Conscientiousness. Factor 4 was defined by three items, all with negative loadings. The observation that all the items loading on Factor 4 had negative loadings, while none of the other common factors had loadings similar in sign, raised concern that the separation of factors resulted from an artifact of measurement. This likelihood pointed toward a decision to drop Factor 4. Finally, only one item loaded on Factor 6. Because single-item scales are notoriously unreliable, this factor was also dropped from further analysis. Coefficient alpha reliabilities for the four retained factors were all .78 or above.

Correlations between the Crowne-Marlowe (1964) Social Desirability Scale and individual career commitment items were less than $\pm .30$, ranging from $-.11$ to $-.26$. Since correlations in the range of $\pm .20$ to $\pm .40$ have been used to demonstrate the absence of biasing due to social desirability, such contamination did not appear to be a problem.

Pilot Study B

A second pilot study was conducted to assess the psychometric properties of the reduced pool of 20 career commitment items. A principal-

TABLE 2
Rotated Factor Solutions for Pilot Study A, Pilot Study B, and Field Study

Items ^{a,b}	Pilot study A						
	Factor 1: Career identity	Factor 2: Career resilience	Factor 3: Conscientiousness	Factor 4: Unidentified	Factor 5: Career planning	Factor 6: Unidentified Communalities	
1. My line of work/career field is an important part of who I am.	<u>57</u>	-01	18	-09	23	-01	68
2. This line of work/career field has a great deal of personal meaning to me.	<u>61</u>	05	10	-07	18	03	66
3. I do not feel "emotionally attached" to this line of work/career field. ^c	<u>55</u>	01	08	-15	11	10	59
4. I strongly identify with my chosen line of work/career field.	<u>56</u>	03	06	-08	29	-04	64
5. I do not have a strategy for achieving my goals in this line of work/career field. ^c	11	-06	-08	-10	<u>52</u>	14	42
6. I have created a plan for my development in this line of work/career field.	12	02	08	07	<u>65</u>	13	65
7. I do not identify specific goals for my development in this line of work/career field. ^c	-03	-04	04	-20	<u>60</u>	27	69
8. I do not often think about my personal development in this line of work/career field. ^c	08	14	05	-02	<u>63</u>	12	65
9. The costs associated with my line of work/career field sometimes seem too great. ^c	04	<u>77</u>	05	06	-03	01	59

10. Given the problems I encounter in this line of work/career field, I sometimes wonder if I get enough out of it. ^c	-07	<u>55</u>	-06	-22	19	07	52
11. Given the problems in this line of work/career field, I sometimes wonder if the personal burden is worth it. ^c	07	<u>68</u>	-01	-13	-02	-05	54
12. The discomforts associated with my line of work/career field sometimes seem to great. ^c	01	<u>67</u>	03	-02	-10	01	46
13. I do not feel a strong sense of belonging in this line of work/career field. ^c	<u>51</u>	20	05	-11	02	12	54
14. I frequently tell people about how great line of work/career field is.	30	13	-01	-38	01	26	57
15. I readily learn new techniques and procedures associated with my line of work/career field.	08	03	18	-06	33	-08	23
16. The benefits of this line of work/career field outweigh its costs.	16	<u>42</u>	05	-03	15	21	50
17. I am constantly trying to improve the skills I need for success in my line of work/career field.	23	-05	<u>50</u>	-11	25	-01	64
18. I feel irresponsible if I do not keep up with developments in my line of work/career field.	03	-06	<u>52</u>	-10	06	10	40
19. Though my line of work/career field has its difficulties, I continue to try hard.	06	-03	<u>62</u>	-07	-10	17	49

TABLE 2—Continued

Items ^{a,b}	Pilot study A						Pilot study B				
	Factor 1: Career identity	Factor 2: Career resilience	Factor 3: Conscientiousness	Factor 4: Unidentified	Factor 5: Career planning	Factor 6: Unidentified	Factor 1: Career identity	Factor 2: Career resilience	Factor 3: Career planning	Factor 4: Conscientiousness	Communalities
20. I will continue to work hard in my line of work/career field despite its problem areas.	-09	23	<u>54</u>	03	04	09					51
21. When I initially meet others, I usually don't tell them my line of work/career field. ^c	-05	10	06	<u>-69</u>	13	-23					56
22. In social settings, I rarely discuss my line of work/career field. ^c	-01	04	01	<u>-77</u>	01	06					64
23. I often discuss my line of work/career field with people outside of it.	08	-05	04	<u>-64</u>	-13	15					47
24. I know what I need to do to reach my goals in this line of work/career field.	-11	-03	16	-01	06	<u>50</u>					31
α coefficient for items loading above .40	89	82	78	77	84	N/A					
Eigenvalues	14.43	2.74	1.65	1.43	1.15	1.03					
% of item variance explained	40.1	7.6	4.6	4.0	3.2	2.9					
	Pilot study B										
1. My line of work/career field is an important part of who I am.			<u>64</u>	-04	06	19					58
2. This line of work/career field has a great deal of personal meaning to me.			<u>76</u>	-04	23	04					81

3. I do not feel "emotionally attached" to this line of work/career field. ^c	<u>66</u>	07	03	07	53
4. I strongly identify with my chosen line of work/career field.	<u>83</u>	-06	10	06	80
5. I do not have a strategy for achieving my goals in this line of work/career field. ^c	-02	06	<u>68</u>	07	52
6. I have created a plan for my development in this line of work/career field.	13	-01	<u>75</u>	05	71
7. I do not identify specific goals for my development in this line of work/career field. ^c	10	03	<u>79</u>	01	73
8. I do not often think about my personal development in this line of work/career field. ^c	19	03	<u>53</u>	06	46
9. The costs associated with my line of work/career field sometimes seem too great. ^c	-12	<u>75</u>	03	-09	53
10. Given the problems I encounter in this line of work/career field, I sometimes wonder if I get enough out of it. ^c	11	<u>51</u>	03	11	36
11. Given the problems in this line of work/career field, I sometimes wonder if the personal burden is worth it. ^c	05	<u>77</u>	-01	05	63
12. The discomforts associated with my line of work/career field sometimes seem to great. ^c	07	<u>83</u>	01	01	72
13. I do not feel a strong sense of belonging in this line of work/career field. ^c	<u>63</u>	17	10	03	57
14. I frequently tell people about how great my line of work/career field is.	<u>51</u>	37	07	06	60
15. I readily learn new techniques and procedures associated with my line of work/career field.	-01	-01	26	<u>43</u>	33
16. The benefits of this line of work/career field outweigh its costs.	28	31	27	01	41
17. I am constantly trying to improve the skills I need for success in my line of work/career field.	10	03	<u>47</u>	37	60
18. I feel irresponsible if I do not keep up with developments in my line of work/career field.	-01	-02	01	<u>58</u>	34

7. I do not identify specific goals for my development in this line of work/career field. ^c	-01	03	77	60
8. I do not often think about my personal development in this line of work/career field. ^c	11	-01	47	28
9. The costs associated with my line of work/career field sometimes seem too great. ^c	-06	63	-08	39
10. Given the problems I encounter in this line of work/career field, I sometimes wonder if I get enough out of it. ^c	07	77	11	65
11. Given the problems in this line of work/career field, I sometimes wonder if the personal burden is worth it. ^c	06	83	06	73
12. The discomforts associated with my line of work/career field sometimes seem to great. ^c	06	78	02	63
13. I do not feel a strong sense of belonging in this line of work/career field. ^c				
14. I frequently tell people about how great my line of work/career field is.				
15. I readily learn new techniques and procedures associated with my line of work/career field.				
16. The benefits of this line of work/career field outweigh its costs.				
17. I am constantly trying to improve the skills I need for success in my line of work/career field.				
18. I feel irresponsible if I do not keep up with developments in my line of work/career field.				
19. Though my line of work/career field has its difficulties, I continue to try hard.				
20. I will continue to work hard in my line of work/career field despite its problem areas.				
21. When I initially meet others, I usually don't tell them my line of work/career field. ^c	79	79	85	
22. In social settings, I rarely discuss my line of work/career field. ^c	4.02	2.36	1.38	
23. I often discuss my line of work/career field with people outside of it.	33.5	19.7	11.5	
24. I know what I need to do to reach my goals in this line of work/career field.				
α coefficient for items loading above .40				
Eigenvalues				
% of item variance explained				

Note. Pilot A, $n = 304$; Pilot B, $n = 263$; Field study, $n = 476$.

^a Loadings of $\pm .40$ or lower are omitted to decrease clutter.

axes factor analysis with an oblique rotation was run on the total set of 20 items retained from Pilot Study A. Four factors having eigenvalues > 1 were extracted (see Table 2). The decision rule used for the final inclusion of an item in defining a factor was a loading of $\geq |.40|$. Factor 1 was identified as Career Identity (6 items); Factor 2 as Career Resilience (4 items); and Factor 3 as Career Planning (5 items). Factor 4 loaded on four items. Because it possessed a comparatively low reliability ($\alpha = .69$), and the eigenvalues-greater-than-1 rule overestimates the number of factors (Zwick & Velicer, 1986), Factor 4 was not retained for the field study. Finally, given evidence that using a different number of items in multi-dimensional measures may affect item context, the three surviving factors were tailored to have the same number of items (Rummel, 1970). Examination of the resulting factor structure and item content suggested that there would be little change in domain sampling adequacy or internal consistency reliability if the factors were so reduced. Thus, the four items with the highest loadings on Factors 1, 2, and 3 were carried forward. Coefficient α reliabilities for the three factors were all .81 or above.

Field Test

The principal-axes factor analysis performed earlier was conducted once again on the 12 items remaining from Pilot Study B (see Table 2). All items loaded as expected, and all but one loading was greater than .50. The three-factor solution explained approximately 64% of the total variance and coefficient alpha reliabilities of the factors ranged from .79 to .85. No items had even moderate cross-loadings on other factors.

Convergent validity. As noted, with convergent validity, one would expect high positive correlations between career commitment measures, as both Blau's (1985) measure and the CCM are intended to gauge the same construct. However, their correlations should be somewhat less than perfect given differences in theoretical development and dimensionality between the two measures. Table 3 reports the correlations among the field study variables. As indicated, the bivariate correlation between the CCM and Blau's (1985) career commitment measure was .63. Correcting for attenuation in both measures yields an expected correlation of .75. This marked correspondence between the two measures suggests convergent validity.

Discriminant validity. Exploration to determine the CCM's usefulness in revealing theoretically relevant relations otherwise masked by the Blau (1985) measure's unidimensional structure proceeded in two steps. Step One addressed construct contamination concerns resulting from items in the Blau (1985) measure overlapping with career withdrawal cognitions. In this regard, a principal-axes factor analysis with an oblique rotation was run on the total set of individual items comprising the Blau measure (7 items), the CCM (12 items), and the previously described career with-

TABLE 3
Means, Standard Deviations, and Intercorrelations for Field Study Variables

Variables	M	SD	r															
			1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
1. Career commitment measure (CCM)	3.79	.55	(.81)															
2. Blau's career commitment	3.73	.74	.63	(.87)														
3. Affective organizational commitment	3.45	.80	.45	.52	(.89)													
4. Job involvement	2.90	.76	.41	.49	.49	.87												
5. Career withdrawal cognitions	2.04	.82	-.54	-.73	-.43	-.35	(.82)											
6. Job withdrawal cognitions	2.19	.83	-.44	-.55	-.60	-.34	.63	(.79)										
7. Education level ^a	5.50	1.53	.18	.16	-.05	.12	-.17	-.04	(-) ^c									
8. Chronological age (years)	43.25	10.52	.15	.22	.26	.16	-.22	-.30	.15	(-) ^c								
9. Gender (female = 1, male = 2)	1.40	.49	-.03	.02	-.05	.07	-.03	-.04	.27	.18	(-) ^c							
10. Tenure in career field (months)	182.19	119.58	.20	.22	.23	.21	-.19	-.22	.19	.74	.18	(-) ^c						
11. Tenure in organization (months)	118.78	102.80	.03	.11	.25	.14	-.07	-.19	.07	.60	.10	.65	(-) ^c					
12. Marital status ^b	1.98	1.51	.08	.06	.09	.03	-.06	-.11	.13	.15	.20	.16	.14	(-) ^c				
13. Career identity	4.10	.74	.73	.59	.40	.53	-.47	-.31	.21	.10	-.01	.15	.02	.05	(.79)			
14. Career planning	3.85	.68	.71	.37	.18	.30	-.31	-.16	.16	-.02	.01	.06	-.04	-.04	.44	(.79)		
14. Career resilience	3.41	.87	.70	.41	.37	.11	-.38	-.42	.03	.21	-.06	.20	.09	.03	.20	.17	(.85)	

Note. $n = 476$. Correlations at or above $\pm .10$, $p \leq .05$, two-tailed. Coefficient reliability estimates are in parentheses.

^a Education coded 1 = some high school; 2 = high school graduate; 3 = some college; 4 = college graduate; 5 = some graduate work; 6 = master's degree; 7 = doctor's degree.

^b Marital status coded 1 = married; 2 = widowed; 3 = divorced; 4 = separated; 5 = never married.

^c Not applicable.

drawal measure (3 items; Michaels & Spector, 1982). It was anticipated that four factors would underline the 21 items. Based on an evaluation of the eigenvalue pattern, this was the case. On the first factor, all three career withdrawal items loaded ($-.69$, $-.73$, $-.67$) with Blau's seven career-commitment items ($.68$, $.54$, $.60$, $.47$, $.63$, $.50$, $.55$). The four CCM items tapping Career Resilience ($-.63$, $-.74$, $-.82$, $-.76$) represented the second factor, the four CCM items tapping Career Planning ($.67$, $.77$, $.78$, $.47$) represented the third factor, and the four CCM items tapping Career Identity ($.71$, $.69$, $.51$, $.54$) represented the fourth factor. Eigenvalues for the four factors were 7.88, 2.45, 1.84, and 1.24, with percentages of item variance explained equaling 35.8, 11.1, 8.4, and 5.7%. Evidence thus suggests that, unlike the CCM, the Blau measure is subject to possible construct contamination.

To proceed in establishing the usefulness of the CCM's multidimensional structure, Step Two examined the theoretical relations advanced in Hypotheses 1 through 5. Given the preceding evidence concerning construct overlap, first-order partial correlations removing the effect of career withdrawal cognitions are reported for all independent-dependent variable relations involving the Blau (1985) measure. To provide for a fair comparison, identical first-order partial correlations are also reported for the CCM. Hypothesis 1 suggested a weak positive association between career commitment and age was due to positive correlations between age and both career identity and career resilience being offset by a negative correlation between age and career planning. As anticipated, unidimensional career commitment was weakly and positively (though nonsignificantly) correlated with age ($r_{2\ 8.5} = .07$, *ns*). Consistent with our prediction, career resilience was positively correlated with age ($r_{15\ 8.5} = .14$, $p < .05$), and career planning was negatively related ($r_{14\ 8.5} = -.09$, $p < .05$). Career identity and age, however, were virtually unrelated ($r_{13\ 8.5} = -.03$, *ns*), thus providing only partial support for *H1*.

As anticipated, unidimensional career commitment was more strongly related to tenure in career field ($r_{2\ 10.5} = .12$, $p < .05$) than age ($r_{2\ 8.5} = .08$, *ns*). By comparison, contrary to *H2*, tenure in career field was weakly and nonsignificantly related to career identity ($r_{13\ 10.5} = .05$, *ns*), but as predicted, was related to career resilience ($r_{15\ 10.5} = .15$, $p < .05$). Reflecting a relation similar to tenure in career field, organization tenure was also positively correlated with unidimensional career commitment ($r_{2\ 11.5} = .09$, $p < .05$). In support of *H3*, however, organization tenure was negatively, though nonsignificantly, associated with career identity ($r_{13\ 11.5} = -.04$, *ns*) and significantly related with career planning ($r_{14\ 11.5} = -.08$, $p < .05$).

With respect to *H4*, the previously reported relation between unidimensional career commitment and education level was expected to be due to positive correlations between education and both career identity

and career planning. As anticipated, unidimensional career commitment was positively associated with education level ($r_{2\ 7.5} = .05$). As predicted, this association is largely attributable to the career identity ($r_{13\ 7.5} = .14$) and career planning ($r_{14\ 7.5} = .10$) dimensions, the full strength of both relations being slightly offset by the nonsignificant, negative correlation between education and career resilience ($r_{15\ 7.5} = -.03$).

Finally, *H5* predicted that career identity and career planning scores would be associated with varying degrees of professionalism across occupational groups. Analysis of covariance was employed to test this prediction for four occupational groups chosen to represent varying levels of professionalism (Benveniste, 1987). Because the demographic variables of age, gender, and marital status have been shown to be related to commitment (e.g., Mathieu & Zajac, 1990), the analysis was conducted controlling for these variables across groups, as well as for career withdrawal cognitions. Group 1 included assistant, associate, and full professors (D.V.M./Ph.D.) of veterinary medicine at a research university ($n = 60$); Group 2 included assistant, associate, and full professors at a small teaching college ($n = 54$); Group 3 included librarians in nonsupervisory positions ($n = 70$); and Group 4 included secretaries and clerical workers ($n = 33$).

As shown in Table 4, mean scores across groups on both career identity and career planning dimensions were significantly different ($p \leq .01$), as they also were for Blau's (1985) measure ($p \leq .05$). As expected, professors (Groups 1 and 2) scored higher on both career commitment dimensions than librarians, a group with less professional training. Further, the group with the least professional training, secretaries and clerical workers, scored the lowest on both dimensions. *H5* was thus confirmed.

To assess the distinctiveness of the CCM (*H6*), it was factor analyzed together with two additional measures of work commitment to discern the extent to which the three measures were tapping different constructs. A principal-axis factor analysis with an oblique rotation was conducted on the total set of individual items comprising the three CCM dimensions (12 items), the Meyer and Allen (1984) measure of affective organizational commitment (8 items), and the Kanungo (1982) measure of job involvement (9 items). All items loaded cleanly on only the factor they were designed to measure. Affective organizational commitment identified the first factor (.71, .77, .72, .75, .60, .57, .62, .47); career resilience, the second factor (.59, .77, .84, .79); career planning, the third factor (.67, .75, .75, .46); job involvement, the fourth factor (.63, .37, .37, .71, .75, .41, .63, .65, .52); and career identity, the fifth factor (-.66, -.78, -.52, -.60). Eigenvalues for the factors, with percent of item variance explained given in parentheses, were 8.33 (28.7%), 3.26 (11.3%), 2.57 (8.9%), 1.63 (5.6%), and 1.28 (4.4%).

Construct validity. The CCM was correlated with years of education,

TABLE 4
 Mean Scores Adjusted by Age, Gender, Marital Status, and Career Withdrawal Cognitions on Career Identity, Career Planning, and Blau's Measure for Four Occupational Groups and *F* Ratio for Analyses of Covariance

Career commitment dimension/measure	Occupation				<i>F</i> (<i>df</i> = 208)
	Professors of veterinary medicine (<i>n</i> = 60)	Small teaching college (<i>n</i> = 54)	Librarians in nonsupervisory positions (<i>n</i> = 69)	Secretaries and clerical workers (<i>n</i> = 69)	
Career identity	4.27	4.41	3.91	3.58	8.11**
Career planning	4.00	3.78	3.71	3.30	4.39**
Blau's measure	3.86	4.02	3.76	3.23	2.98*

* *p* < .05, ** *p* .01.

TABLE 5
Correlations and Differences in Correlations^a between Career Commitment (CCM) and Affective Organizational Commitment for Selected Correlates

Correlates	Career commitment (CCM)	Affective organizational Commitment	<i>t</i> (<i>df</i> = 473)
Education level ^b	.18	-.05	4.95 ^e
Chronological age (years)	.15	.26	-2.38 ^c
Tenure in career field (months)	.20	.23	-0.67
Tenure in organization (months)	.03	.25	-4.97 ^e
Career withdrawal cognitions	-.54	-.43	-2.77 ^d
Job withdrawal cognitions	-.44	-.60	4.21 ^e

Note. *n* = 476. Correlations at and above $\pm .15$, $p \leq .005$, one-tailed.

^a Differences in correlation values were evaluated using tests for differences between dependent correlations.

^b Education coded: 1 = some high school; 2 = high school graduate; 3 = some college; 4 = college graduate; 5 = some graduate school; 6 = master's degree; 7 = doctor's degree.

^c Significance of difference in correlation values was $p \leq .05$, one-tailed.

^d Significance of difference in correlation values was $p \leq .01$, one-tailed.

^e Significance of difference in correlation values was $p \leq .001$, one-tailed.

chronological age, tenure in career field, organization tenure, career withdrawal cognitions, and job withdrawal cognitions (Table 5). Significance tests of differences between dependent correlations were conducted to examine the paired correlations specified in Hypotheses 7–11.

As anticipated in *H7*, education level was positively related to career commitment ($r = .18$) and negatively correlated with affective organizational commitment ($r = -.05$). As predicted, there was a significant difference between the correlations. Career identity ($r = .21$) and career planning ($r = .16$) were significantly associated with education.

Age was positively correlated with career commitment ($r = .15$) as anticipated in *H8*. Further, the correlation between age and affective organizational commitment ($r = .26$) was significantly greater than the correlation between age and career commitment ($r = .15$) as expected. Career identity ($r = .10$) and career resilience ($r = .21$) were significantly related to age.

Contrary to *H9*, there were no significant differences in the correlations between tenure in career field–career commitment ($r = .20$) and tenure in career field–affective organizational commitment ($r = .23$). Dimensions significantly related to tenure in career field were career identity ($r = .15$) and career resilience ($r = .20$). Consistent with *H10*, organization tenure was significantly correlated with affective organizational commitment ($r = .25$), but not significantly correlated with career commitment ($r = .03$). There was a significant difference between the correlations.

As anticipated in *H11*, career withdrawal cognitions was significantly and more negatively correlated with career commitment ($r = -.54$) than affective organizational commitment ($r = -.43$). The dimensions significantly related to career withdrawal cognitions were career identity ($r = -.47$), career planning ($r = -.31$), and career resilience ($r = -.38$). Finally, as predicted, job withdrawal cognitions was significantly and more negatively correlated with affective organizational commitment ($r = -.60$) than career commitment ($r = -.44$).

DISCUSSION

The purpose of the reported research was to develop and evaluate a new measure of career commitment. Results reveal that none of the CCM items were highly correlated with social desirability. Both positively and negatively phrased items were used in the various survey measures, thus reducing the likelihood of mono-method bias (Campbell, Siegman, & Rees, 1967). Some respondents received their surveys at work whereas others received their surveys at home. Varied contexts for survey completion have been shown to reduce method variance (Mitchell, 1985). Different scaling methods used for obtaining responses to the Crowne-Marlowe measure of social desirability and for collecting demographic information in the three surveys likewise further reduced the potential

threat of method bias (Cook, Campbell, & Peracchio, 1990). Therefore, the results suggest that the CCM may be useful in research on the increasingly important career commitment construct.

Beyond the preceding considerations is the issue of ambiguity associated with the word "career" (Blau, Paul, & St. John, 1993). To overcome the word's vagueness, its isolated use in connection with the CCM measure was avoided throughout the entire research project. Instead, the words "line of work/career field" were used throughout the pilot studies and field test. Respondents were directed to consider line of work/career field as having the same meaning as occupation, profession, or vocation.

A further issue is the high correspondence between Blau's (1985) career commitment measure and career withdrawal cognitions. This overlap was viewed here as construct contamination similar to that reported with the OCQ. However, there could be another view. It could be suggested that the two constructs should be related (i.e., career commitment should be inversely related to withdrawal cognitions). This alternative interpretation would support the validity of Blau's (1985) measure.

Lastly, an attempt was made in the field study to survey occupational groups associated with varying degrees of professionalism. Response rates, however, were somewhat low for individuals representing nonprofessional groups. Besides surveying additional groups with less professional work patterns, other occupational classifications should be investigated. Respondents in the present study primarily worked in the service and academic sectors. To extend the CCM's generalizability, employees in other settings, in varying geographical regions, and in atypical work arrangements, should be studied (Cook, Campbell, & Peracchio, 1990).

Though there are potential limitations in any research project, the procedures for item selection used in the present effort were specifically designed to address psychometric issues that have, in the main, continued to hamper the development of career constructs (Hackett, Lent, & Greenhaus, 1991). The failure to establish adequate measures not only makes their use problematic, but forestalls efforts to evaluate and integrate findings. All too often, one suspects that modest relationships between variables have been interpreted as a failure in underlying theory when instrumentation was the true problem.

REFERENCES

- Angle, H. L., & Perry, J. L. (1981). An empirical assessment of organizational commitment and organizational effectiveness. *Administrative Science Quarterly*, *26*, 1-14.
- Aryee, S., & Tan, K. (1992). Antecedents and outcomes of career commitment. *Journal of Vocational Behavior*, *40*, 288-305.
- Bedeian, A. G., Kemery, E. R., & Pizzolatto, A. B. (1991). Career commitment and expected utility of present job as predictors of turnover intentions and turnover behavior. *Journal of Vocational Behavior*, *39*, 331-343.
- Benveniste, G. (1987). *Professionalizing the organization*. San Francisco: Jossey-Bass.

- Blau, G. J. (1985). The measurement and prediction of career commitment. *Journal of Occupational Psychology*, **58**, 277-288.
- Blau, G. J. (1988). Further exploring the meaning and measurement of career commitment. *Journal of Vocational Behavior*, **32**, 284-297.
- Blau, G. J. (1989). Testing the generalizability of a career commitment measure and its impact on employee turnover. *Journal of Vocational Behavior*, **35**, 88-103.
- Blau, G. J., Paul, A. A., & St. John, N. (1993). On developing a general index of work commitment. *Journal of Vocational Behavior*, **42**, 298-314.
- Bremner, B. Rebello, K., Schiller, Z., & Weber, J. (1991, October 14). The age of consolidation. *Business Week*, pp. 86-94.
- Burris, B. H. (1983). The human effects of underemployment. *Social Problems*, **31**, 96-110.
- Campbell, D. T., Siegman, C. R., & Rees, M. B. (1967). Direction of wording effects in the relationships between scales. *Psychological Bulletin*, **68**, 293-303.
- Castro, J. (1989, September 11). Where did the gung-ho go? *Time*, pp. 52-56.
- Chartrand, J. M., & Camp, C. C. (1991). Advances in the measurement of career development constructs: A 20-year review. *Journal of Vocational Behavior*, **39**, 1-39.
- Colarelli, S. M., & Bishop, R. C. (1990). Career commitment: Functions, correlates, and management. *Group & Organization Studies*, **15**, 158-176.
- Cook, T. D., Campbell, D. T., & Peracchio, L. (1990). Quasi experimentation. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology* (2nd ed., Vol. 1, pp. 419-490). Palo Alto, CA; Consulting Psychologist Press.
- Crowne, D., & Marlowe, D. (1964). *The approval motive: Studies in evaluative dependence*. New York: Wiley.
- Darden, W. R., Hampton, R., & Howell, R. D. (1989). Career versus organizational commitment: Antecedents and consequences of retail salespeoples' commitment. *Journal of Retailing*, **65**, 80-106.
- DeVellis, R. F. (1991). *Scale development: Theory and applications*. Newbury Park, CA: Sage, 1991.
- Gould, S. (1979). Characteristics of career planners in upwardly mobile occupations. *Academy of Management Journal*, **22**, 539-550.
- Gouldner, A. W. (1957). Cosmopolitans and locals: Toward an analysis of latent social roles—I. *Administrative Science Quarterly*, **2**, 281-306.
- Greenhaus, J. H. (1971). An investigation of the role of career salience in vocational behavior. *Journal of Vocational Behavior*, **1**, 109-216.
- Greenhaus, J. H. (1987). *Career management*. Hinsdale, IL: Dryden.
- Grover, S. L. (1992). The effect of increasing education on individual professional behavior and commitment. *Journal of Vocational Behavior*, **40**, 1-13.
- Hackett, G., Lent, R. W., & Greenhaus, J. H. (1991). Advances in vocational theory and research: A 20-year retrospective. *Journal of Vocational Behavior*, **38**, 3-38.
- Hall, D. T. (1971) A theoretical model of career subidentity development in organizational settings. *Organizational Behavior and Human Performance*, **6**, 50-76.
- Hall, D. T. (1976). *Careers in organizations*. Santa Monica, CA: Goodyear.
- Kanungo, R. (1982). Measurement of job and work involvement. *Journal of Applied Psychology*, **67**, 341-349.
- London, M. (1983). Toward a theory of career motivation. *Academy of Management Review*, **8**, 620-630.
- London, M. (1985). *Developing managers: A guide to motivating and preparing people for successful managerial careers*. San Francisco: Jossey-Bass.
- Lydon, J. E., & Zanna, M. P. (1990). Commitment in the face of adversity: A value-affirmation approach. *Journal of Personality and Social Psychology*, **58**, 1040-1047.

- Mathieu, J. E., & Zajac, D. (1990). A review and meta-analysis of the antecedents, correlates, and consequences of organizational commitment. *Psychological Bulletin*, **108**, 171-194.
- McGee, G. W., & Ford, R. C. (1985). Two (or more?) dimensions of organizational commitment: Reexamination of the affective and continuance commitment scales. *Journal of Applied Psychology*, **72**, 638-642.
- Meyer, J. P., & Allen, N. J. (1984). Testing the "side-bet theory" of organizational commitment: Some methodological considerations. *Journal of Applied Psychology*, **69**, 372-378.
- Michaels, C., & Spector, P. (1982). Causes of employee turnover: A test of the Mobley, Griffeth, Hand and Meglino model. *Journal of Applied Psychology*, **67**, 53-59.
- Mitchell, T. R. (1985). An evaluation of the validity of correlational research conducted in organizations. *Academy of Management Review*, **10**, 192-205.
- Mobley, W. H., Griffeth, R. W., Hand, H. H., & Meglino, B. M. (1979). Review and conceptual analysis of the employee turnover process. *Psychological Bulletin*, **86**, 493-522.
- Morrow, P. C. (1983). Concept redundancy in organizational research: The case of work commitment. *Academy of Management Review*, **8**, 486-500.
- Morrow, P. C., Eastman, K., & McElroy, J. C. (1991). Concept redundancy and rater naivety in organizational research. *Journal of Applied Social Psychology*, **21**, 219-232.
- Morrow, P. C., & Goetz, J. F., Jr. (1988). Professionalism as a form of work commitment. *Journal of Vocational Behavior*, **32**, 92-111.
- Morrow, P. C., & Wirth, R. E. (1989). Work commitment among salaried professionals. *Journal of Vocational Behavior*, **34**, 40-56.
- Mowday, R. T., Steers, R. M., & Porter, L. W. (1979). The measurement of organizational commitment. *Journal of Vocational Behavior*, **14**, 224-247.
- Mueller, C. W., Wallace, J. E., & Price, J. L. (1992). Employee commitment. Resolving some issues. *Work and Occupations*, **19**, 211-236.
- Nussbaum, B. (1991, October 7). I'm worried about my job! *Business Week*, pp. 94-97.
- Parasuraman, S., & Nachman, S. A. (1987). Correlates of organizational and professional commitment. *Group & Organization Studies*, **12**, 287-303.
- Paterson, J. M., & O'Driscoll, M. P. (1990). An empirical assessment of Kanungo's (1982) concept and measure of job involvement. *Applied Psychology*, **39**, 293-306.
- Peterson, R. A. (1982). *Marketing research*. Plano, TX: Business Publications.
- Price, J. L., & Mueller, C. W. (1981). A causal model of turnover for nurses. *Academy of Management Journal*, **24**, 543-565.
- Rummel, R. J. (1970). *Applied factor analysis*. Evanston, IL: Northwestern University Press.
- Smith, C. S., Reilly, C., & Midkiff, K. (1989). Evaluation of three circadian rhythm questionnaires with suggestions for an improved measure of morningness. *Journal of Applied Psychology*, **74**, 728-738.
- U. S. Department of Labor (September, 1991). *Employment and earnings*. Washington, DC: Bureau of Labor Statistics.
- Zwick, W. R., & Velicer, W. F. (1986). Comparison of five rules for determining the number of components to retain. *Psychological Bulletin*, **99**, 432-442.

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