



# Measuring work preferences

## A multidimensional tool to enhance career self-management

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### Abstract

**Purpose** – The purpose of this paper is to introduce a multidimensional work preference research instrument, and to relate scores on these dimensions with subjects' real world work choices.

**Design/methodology/approach** – Repeated samples of 1,002 and 975 adult subjects were used to identify 17 empirically derived constructs, using both EFA and CFA statistical applications. The CFA revealed measurement invariance among the predicted and measured constructs. The 17 validated constructs were culled from career development-related psychology that has variously been identified with learning styles, work interests, work values, and temperament. Using a third sample of 590 subjects, MANOVA analyses of work preference scores were conducted with working adults, representing ten different types of work. When the scores on the 17 measures were compared with occupational choices made by the subjects, significant differences in outcomes were identified, indicating commonality within specific work types.

**Research limitations/implications** – Because the work preference construct is relatively new and fluid, continuous research is needed to gain greater understanding of the construct and its characteristics. Additional sampling and tests for measurement invariance are indicated using cross-national samples, as well as non-English-speaking languages. Samples from younger, pre-career subjects in secondary schools and representing a wide array of demographic characteristics are also needed as the research progresses. In addition, more studies are needed to test for predictive validity, using other unobtrusive performance measures taken at different points in time.

**Practical implications** – Multiple measures embedded in one tool may prove useful aids to people when making career choice decisions that are associated with the selection of short-term work placement, long-term career occupations, and academic fields of study. The development of this tool will enable career development researchers to examine the relationships of psychological constructs identified with different fields of psychological measurement, and examine these constructs as they relate to classroom, organizational and cross-national contexts.

**Originality/value** – The creation of a tool consisting of measures from multiple psychological fields for use in short-term career planning, job placement, and enrichment is novel. When combined, the multiple constructs used in this instrument have been found to provide a constellation of useful indicators that are related to career choice and work placement decisions. The measures are also likely to be useful in cross-national research contexts.

**Keywords** Job satisfaction, Personality measurement, Career development, Job enrichment

**Paper type** Research paper



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## Introduction

*Career* is shifting in concept from the traditional hierarchical, linear, uni-dimensional, and structured form to that which is more self managed, transitional, multi-focused, and without boundaries (Baruch, 2006; Bozionelos, 2001; Harvey and Novicevic, 2006). Changes in career characteristics, and shifts in personal work values throughout one's career (Hall, 1996; Patton and McMahan, 1999, p. 182; Smola and Sutton, 2002) compel employers and workers to be continuously attentive to changing work requirements, new areas of employee skill development, and personal work preferences. Employers share an interest in understanding employees' work preferences (Konrad *et al.*, 2000) so as to gain insight about what motivates their workers, and create work environments that will enable their employees to be more productive over time.

Given these changing contexts and continuing challenge to learn what motivates individuals on the job, this paper has been written to shed light on the need to identify one's work preferences as they relate to one's suitability for specific work environments. Specifically, it introduces the Work Preference Indicator as a new tool to gauge work preferences.

## About work preferences

Work preferences are the outcomes individuals desire from their engagement in paid work (Konrad *et al.*, 2000). They answer the question, "What do I want from the work that I do?" Or "What do I want my work setting to be like?" (Barker and Kellen, 1998, p. 28). They influence career choice decisions (Brown, 1996) and are critical determinants of job attitudes and work motivation (Brenner *et al.*, 1988). Work preferences can be used to aid in the understanding of individuals engaged in different types of career related environments (Judge and Ferris, 1992; Kristof-Brown *et al.*, 2005; Werbel and Gilliland, 1999).

The term, "work preference," is not a tightly defined psychological construct. It includes overlapping constructs related to work values (Rounds and Armstrong, 2005; Rowe and Snizek, 1995), job attributes (Konrad *et al.*, 2000), interests (Barrick *et al.*, 2003; Holland, 1997), motivation (Amabile *et al.*, 1994), temperament (McCaulley, 1990), and practical work related considerations (Dowd, 2006). Work preferences influence shorter-term career choice decisions (Brown, 1996, pp. 337-372). They are said to be related to job satisfaction (Rounds *et al.*, 1987) and can be used to shed light on the person-to-work environment fit.

Both employers and careerists have an interest in ensuring that there is a good fit between the work environment and one's psychological characteristics. This has been conceptualized in the literature as the person-environment (P-E) fit. The P-E fit concept is derived from Lewin's (1935) person-environment interaction theory. A good fit produces positive individual and organizational outcomes (Sekiguchi, 2006). The closer the fit to the individual's job preferences and characteristics of their work environment, the greater the employee's work satisfaction (Holland, 1973, p. 9; Rounds *et al.*, 1987), morale, job commitment, and employee productivity (Barrick *et al.*, 2003; McCloy *et al.*, 1994).

Some have suggested that conceptually P-E fit is a complex and multidimensional construct (Jansen and Kristof-Brown, 2006; Law *et al.*, 1998; Sekiguchi, 2006). Various dimensions of P-E fit have been identified in the literature. These are the person-job (P-J) fit (Edwards, 1991), person-group (P-G) fit (Werbel and Johnson, 2001) and the person-organization (P-O) fit (Kristof, 1996). The P-J fit matches the knowledge, skills,

and abilities of the person with the job requirements; P-O fit matches the individual with the characteristics of the organization; and P-G matches individuals with work groups. Studies related to person-to-work environment fit theory demonstrate that individuals vary in their suitability for certain jobs (Simons *et al.*, 2000). Those having specific psychological characteristics or work preferences are more likely to perform better in certain organizational work environments than are others (Barrick *et al.*, 2003).

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### Assessing work preferences

Career related assessment tools provide scientifically based insight about the suitability of individuals for specific types of work and the best P-E fit for the organization (Simons *et al.*, 2000). These tools tend to focus on specific areas of psychology such as abilities, aptitudes, interests, personality, values, motivation, learning styles, and temperament. Although they are associated with different fields of psychology, they are both similar and different from one another (Niles and Harris-Bowlsbey, 2002, p. 65); they are not mutually exclusive.

In the past, many studies have approached person-environment fit from a single aspect of the work environment (Jansen and Kristof-Brown, 2006), when in reality the individual responds and reacts to multiple dimensions of the environment, which warrant assessment. In this study we introduce a multidimensional tool, the Work Preference Indicator (WPI), which consists of several constructs drawn from different fields of psychology that can be used by careerists to help individuals make more informed choices about work environments for which they may be better suited. Through the development of this tool we hypothesize that:

- H1.* Respondents' ratings on the empirically derived constructs will be significantly different in terms of: the expressed types of work they would prefer and; the type of work environments that they actually select.

If such differentiations are found, they will lend support to the use of the tool for further research related to career development and placement dynamics. They will also support the further exploration of the use of the tool to aid individuals who want to learn more about their work preferences and their own suitability (fit) for jobs that are emerging in highly adaptive and multi skilled organizations.

Table I captures some of the more relevant work related psychological assessments that are widely used to enable others to gain insight about their suitability for specific work related jobs and environments. It was from tools such as these that the multidimensional work preference constructs reported in this paper were selected.

No one tool is suitable for all situations facing careerists and their career coaches. There continues to be a compelling need to build on theories developed in the past, advance them, and create new interventions to meet the changing occupational contexts within which careers emerge (Niles and Harris-Bowlsbey, 2002, p. 65). By building on the strengths of a variety of psychological tools, and combining them into one instrument consisting of work preference constructs, a broader picture about a person's unique characteristics is expected to be developed and can be used by researchers and others involved in career decision making.

The Work Preference Indicator (WPI) introduced in this study is another effort to develop a multidimensional tool that can be used to help detect the suitability of employees for various work assignments. Rather than administering multiple tools to

Study	Focus of study	Unique contribution
Rokeach (1973)	Values Survey. Developed a values measurement instrument used to help what people value terminally and instrumentally	Created an empirically based quantitative tool to measure work-related values
Super (1970, 1982)	Work Values Inventory; Work Importance Study Used to assess the general values a person seeks to satisfy through various life roles	Enlarged understanding of work values as they relate to career stage and occupational environments. WIS was cross-national in scope
Holland (1973, 1992)	RIASEC. Captured six types of work-related personality types. (Big Six): Realistic, investigative, artistic, social, enterprising, conventional	Linked vocational interests to job families. Identified Big Six measures that are associated with “work personalities”
Prediger (1976)	Identified two work-task dimensions: working with data vs working with ideas; working with people vs working with things	Found relationships between Holland’s hexagonal opposites and his two work task dimensions
Goldberg (1990, 1993)	Big Five personality factors. Extraversion, agreeableness, conscientiousness, neuroticism, openness to experience	Captured the Big Five common factors in personality measurement. Based primarily on factor analyses of adjectives
Costa and McRae (1992)	NEO Five Factor Inventory. Identified a hierarchical relationship among the Big Five	Extended Goldberg’s earlier work. Assessed the relationship between personality factors and career exploration variables
Myers (1987)	MBTI. Developed the Myers-Briggs Temperament Indicator. Measures psychological types described by Jung. Extroversion-introversion, sensing-intuition; thinking-feeling; judging-perceiving	Created profiles of individuals based on temperament type. Widely used personality assessment. Includes some associations with congruent work environments
Dunn <i>et al.</i> (1989)	Identified dimensions to the study of learning styles and associated them with student performance	Identified individual preferences to use of physical senses (auditory, visual, and kinesthetic) to learn
Rounds <i>et al.</i> (1981)	Minnesota Importance Questionnaire. Developed six broad factors related to work values: Achievement, comfort, status, altruism, safety, and autonomy	Provided useful guides to an individual’s work-related values and occupational environments
Amabile <i>et al.</i> (1994)	Work Preference Inventory. Measures intrinsic and extrinsic motivational factors. Related to work and student performance	Identified life course decisions based on individual motivational orientation. Captured work preferences, especially as they relate to creativity
Dowd (2006)	Work Preference Match. Includes multiple measures related to psychological temperament, work tasks, types of supervision, compensation, work culture	Emphasized a multi-dimensional focus. Enables career deciders to relate their own skills, interests, needs and abilities to career options – targeted for those having a change in life circumstance or disability

**Table I.**  
Summary of key person-environment fit contributions

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assess selected values, temperament, interests, and learning styles, the WPI can be used to gain reading of an individual's preferences in one relatively succinct tool. It measures key constructs that cut across other well-known psychological models like those presented in Table I. It also makes possible readily available research opportunities to compare the relationships of these constructs with one another and with other factors of interest related to the person-to-work environment fit. As an aid to careerists, it is not intended to replace the extensive work of Strong (Harmon *et al.*, 1994), Holland (1992), Goldberg (1993), Myers (1987) and other tools that are used to provide longer term occupational guidance. Rather, it is intended to build on others' contributions and provide relatively easy to generate and valid information that may guide those interested in shorter term decisions related to on-the-job work placement.

### **Rationale for the development of the WPI**

The WPI was created to fill a gap that was recognized by academic researchers and practitioners seeking to gain easy-to-use and quick to gauge constructs that pertain to individual work preferences and their relationship with specific types of work. (See methodology section of this paper.) Table II lists the 17 constructs nested in the WPI, along with a short definition and the key conceptual anchors associated with each.

### **The development of the Work Preference Indicator (WPI)**

The WPI is a selected response-type instrument consisting of 75 statements derived from well-established constructs associated with career psychology. (See examples of statements in Table III.) As shown in Table II, the constructs included in the WPI were drawn from several different psychological fields. These psychological fields are not mutually exclusive, but represent areas of emphasis employed in psychological testing.

### **Methodology**

When developing the instrument, four distinct stages were employed:

- (1) conceptualization of the constructs and scale development;
- (2) preliminary testing;
- (3) establishing reliability, validity and dimensionality; and
- (4) retesting and validation of the scale.

For each stage, we used a different sample of respondents to develop/test the scale.

#### *Conceptualization of the constructs and scale development*

Following a review of relevant literature from multiple psychological disciplines, we generated a list of constructs thought to be potentially useful as aids to help guide individuals to more suitable work environments.

To verify the relevancy of these constructs, we sought the expert counsel of a professional employed by a large employee development center that serves tens of thousands of employees annually. This professional had used over 40 different psychological work related assessment tools in his own work with adults and had a good working understanding of the relative utility of each. He was asked: "What information would you want to have about an individual's work preferences in order to help you coach or place them in jobs where they would be best suited?" From his

WPI psychological area of study and construct	Definition: prefers to	Conceptual anchors
<i>Learning styles:</i>		
Aurally learning (AURL)	Learn at work through open discussions with others; and others' aural explanations	Individuals process and understand information differently (Anderson and Adams, 1992; Fazarro and Stevens, 2004) identified aural and visual learning styles; Dewaele and Furnham (1999) reported a relationship between visual with introversion; aural with extraversion
Written learning (WRIT)	Learn at work by reading written material, computers, and other sources of visual information	
<i>Work values</i>		
Work independence (INDE)	Work independently and make one's own decisions; have a lot of autonomy at work	Douglas and Shepard (2002); Rounds <i>et al.</i> (1981) identified desire for some to make their own decisions and work independently
Want to be likeable (LKBL)	Be well liked at work and get along well with others. Seeks to be valued by others at work	Hogan and Hogan (1992) captured the value shared by some workers to be respected and liked by others in the workplace
Work with others in teams (TEAM)	Work with others to get the work done; be an effective team player; be an integral part of a high-performing team; share success with others on a work team	Dunn and Dunn (1999) captured the value some employees have for team-based work
Job fulfillment (JFUL)	Have a personally satisfying job; do work that one feels is important and meaningful	Amabile <i>et al.</i> (1994) and Malka and Chatman (2003) identified the need employees have for intrinsic reward and meaning from the work they do
Career ladder (CLAD)	Have a clearly defined career ladder spelled out by the organization; know one's own career potential in the organization; move up within the system	Employees vary in their value for upward mobility within the organization (Cox and Cooper, 1989; Judge <i>et al.</i> , 1995)
Achieve results (RSLT)	Achieve results on the job; be effective at doing one's work and contribute to the overall success of the organization	McClelland (1985) identified the value some employees have to get results through their work. The FFM (Costa and McCrae, 1992) includes this as Conscientiousness
<i>Work interests:</i>		
Helpful to others (HELP)	Help others at work; care for others; be a coach for them; and be of service to those with whom they work	Holland's (1992) Social; Costa and McCrae's (1992) Agreeableness; and Prediger's (1976) People constructs provide the framework for this measure

(continued)

**Table II.**  
The 17 constructs included in the Work Preference Indicator

WPI psychological area of study and construct	Definition: prefers to	Conceptual anchors
Work with data (DATA)	Work with data; analyze numbers; keep data records	Prediger's (1976) Data and Holland's (1992) Conventional and Realistic constructs provide support for this measure
Work with mechanical things (MECH)	Work with, study about, build, and/or repair things	Prediger's (1976) Things, Holland's (1992) Realistic, constructs provide the conceptual foundation for this measure
Work with factual information (FACT)	Work with concrete information; study factual information, retain it, and use it at work	The foundation for this construct is associated with the Conventional interest of Holland (1992). It has not been specifically identified in interest literature
Lead others (LEAD)	Lead others; be in charge of others; be responsible for the work of a team; take charge of others	Chan and Drasgow (2001) analyzed the motivation to lead others. This measure parallels their Affective-Identity scale of leadership. It also is similar to McClelland's (McClelland and Boyatzis, 1982) Power construct of motivation
<i>Personality temperament:</i>		
Focus on task specific information (TASC)	Have clear guidance from others so they know what is expected of them at work; have helpful training and specific instructions when taking on a new task	The MBTI (McCaulley, 1990) includes the construct related to Sensing. Part of that construct includes one's propensity for detail and specific information
Explore ideas (IDEA)	Think in terms of ideas and possibilities; work with concepts and theories; generate knowledge through creative thinking and research	The MBTI (McCaulley, 1990) identifies Intuition as an indicator of one's attraction to theory and creativity. The IDEA construct is also linked to Holland's (1992) Artistic and Investigative constructs
Time management (TIMM)	Have one's daily work life well organized; have daily activities planned ahead of time	Judging is one of four polar opposite constructs in the MBTI (McCaulley, 1990). It captures one's need for organization and predictability
Flexibility (FLEX)	Have a lot of personal freedom on the job; do things without a rigid schedule; work spontaneously rather than having one's work life well defined	Perceiving is opposite of Judging in the MBTI (McCaulley, 1990). It refers to one's need for spontaneity and flexibility. Unlike the MBTI, the two constructs in the WPI are not polar opposites

Table II.

responses, we identified 16 constructs that were relevant, and created an initial 77-item Likert scale representing these constructs. To establish face validity, we tested the instrument with a pilot sample of 110 students in four college classes and 70 working adults who were attendees at employee development workshops. The pilot test did not

	SD	D	N	A	SA
At work it is very important for me to: Be part of a successful team	1	2	3	4	5
In my job, it is very important for me to be able to: Care for others Help others	1	2	3	4	5
At work, I strongly prefer to learn from: Written instructions Manuals that I can study	1	2	3	4	5
At work I most prefer to: Study how things work Repair things Analyze numbers Study data	1	2	3	4	5

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**Table III.**  
Sample of questionnaire items

yield any major change to the 16 constructs selected, but did result in some minor changes in the wording of some of the statements used in the scales.

*Preliminary scale testing*

To do a preliminary check of the reliability and dimensionality of the scale, we selected a convenience sample of 783 working adults and 219 college seniors. The working adults included federal managers and Air Force logisticians (201), municipal and county workers (128), welding instructors (19), telephone center supervisors (23), production engineers (84), public mail service employees (57), homecare employees (30), pharmaceutical unit workers (15), Native American organization workers (40), and co-workers of seniors majoring in business who were also gainfully employed (186). All respondents participated voluntarily. The college students in the study sample were seniors majoring in business and attending a large urban university in the USA.

Using this sample, we conducted an Exploratory Factor Analysis (EFA) principal components and varimax rotation. The EFA revealed 16 factors reflecting the originally conceptualized constructs, each having eigenvalues greater than 1.0, and item loadings of 0.60 or higher. No scale items were split loaded with another construct at 0.35 or higher. All 16 constructs had a minimum Cronbach alpha reliability of 0.70 (Nunnally and Bernstein, 1994, pp. 264-265).

Of the 77 items that were intended to load on the 16 factors, six variables were dropped because they did not load according to the pre-established standards, or reduced the reliability of a construct, if included. This resulted in a reduction of scale items from 77 to 71 that comprised the 16 constructs. Slight wording modifications were made to some statements in the questionnaire for the purpose of purifying the scales and improving face validity and content validity on a few of the constructs.

A meeting was then held with seven professionals from the same employee development center. They were interviewed together as a panel to review the structure and theoretical bases of the new WPI, its constructs, and to obtain their opinions regarding the practicality and utility of the 16 WPI constructs. That meeting served to confirm the adjudged practicality of the constructs. It yielded a recommendation to consider adding one more measure pertaining to one's preference for gathering and retaining factual information. Thus, four new statements were added to the

questionnaire, with the expectation that they would measure one's preference for factual information.

*Confirming reliability, validity and dimensionality of scale*

After the preliminary scale testing and modification, we conducted a follow-up study based on a sample of 975 seniors enrolled in randomly selected classes in a large urban university in the USA, consisting of a broadly diverse student population. The use of college students in this study was approved by a university Institutional Review Board for the use of human subjects. The sample included senior level students majoring in accounting (115), finance (141), information technology (92), management and international business (154), marketing (112), nursing (83), criminal justice (29), advertising (119), public relations (20), hospitality management (73) and "other" (37). The students' average age was 27 years.

The purpose of this follow-up study was to:

- verify the reliability of the revised scale;
- confirm the factor structure and dimensionality through a Confirmatory Factor Analysis (CFA) procedure;
- establish discriminant and convergent validity; and
- verify concurrent validity by testing for significant relationships between the scale constructs/dimensions and the job preferences of the students.

*Evidence of reliability:* Using the data from the two samples, reliability of the constructs was assessed two ways. First, we examined the item-to-total correlations for each of the 17 constructs, and computed their Cronbach coefficient alphas.

The Cronbach alpha scale reliability scores of these 17 constructs ranged from 0.78 to 0.93. For two constructs, they were 0.78 and 0.79; all others ranged between 0.83 and 0.93. Second, we computed the composite reliability of each construct factor using the standardized loadings obtained through the Confirmatory Factor Analysis (CFA) procedure described next. Table IV shows the summary statistics, correlations, Cronbach coefficient alphas and the composite reliabilities for the 17 constructs. Both sets of reliability scores are very similar to each other and exceed the norm of 0.70 recommended for early stages of research (Nunnally and Bernstein, 1994, pp. 264-265).

*Confirmatory factor analysis:* To verify the dimensionality of the scale, we conducted a CFA using Gerbing and Anderson's (1988) statistical procedure based on structural equation modeling theory with EQS software. Given the sample size ( $N = 975$ ), we had enough power to run a CFA model with all 17 factors simultaneously. All items loaded significantly ( $p < 0.001$ ) on their hypothesized factors. The model had a comparative fit index (CFI) of 0.946. The chi-square was 6612.692 (2564 d.f.) ( $p < 0.001$ ), which is expected for a model of this size. The root mean square residual (RMR) was 0.045. The root mean square error of approximation (RMSEA) is 0.041. All these statistics indicated that the CFA model fit the data well (Mulaik *et al.*, 1989). To test for gender related differences, we used Multi-Group Latent Variable Structural Equation modeling, also with EQS. Our analyses showed construct equivalency across the two groups and no significant differences between the men and women. Table V provides a detailed summary of the tests for the CFA.

Factors <sup>b</sup>	Factor correlations																
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1 Independent (INDE)	1.00																
2 Task clarity (TASC)	0.07	1.00															
3 Team-oriented (TEAM)	0.04	0.19	1.00														
4 Help others (HELP)	0.10	0.20	0.42	1.00													
5 Likeable (LKBL)	0.05	0.24	0.30	0.44	1.00												
6 Job performance (RSLT)	0.15	0.24	0.24	0.24	0.21	1.00											
7 Job fulfillment (FUL)	0.06	0.21	0.19	0.23	0.27	0.35	1.00										
8 Lead others (LEAD)	0.25	0.03	0.26	0.21	0.14	0.27	0.18	1.00									
9 Career ladder (CLAD)	0.12	0.26	0.20	0.16	0.25	0.40	0.20	0.27	1.00								
10 Written material (WRIT)	-0.04	0.16	0.15	0.10	0.02	0.14	0.06	0.14	0.19	1.00							
11 Aural learning (AURL)	0.05	0.20	0.15	0.18	0.25	0.11	0.13	0.06	0.22	-0.01	1.00						
12 Mechanical (MECH)	0.04	-0.02	0.18	0.10	0.00	0.04	0.01	0.14	-0.04	0.21	-0.01	1.00					
13 Data (DATA)	0.06	-0.03	0.07	0.03	-0.05	0.12	-0.01	0.18	0.08	0.24	-0.01	0.27	1.00				
14 Idea (IDEA)	0.22	0.02	0.18	0.16	0.07	0.22	0.09	0.25	0.20	0.07	0.11	0.18	0.29	1.00			
15 <i>Factual information (FACT)</i>	0.06	0.39	0.19	0.18	0.17	0.25	0.12	0.13	0.26	0.26	0.18	0.13	0.22	0.23	1.00		
16 <i>Time management (TMM)</i>	-0.04	0.23	0.20	0.20	0.16	0.24	0.14	0.21	0.23	0.23	0.09	0.06	0.14	0.10	0.27	1.00	
17 Flexibility (FLEX)	0.17	-0.07	0.03	0.02	0.03	-0.06	-0.04	0.09	-0.03	-0.03	0.09	0.13	0.05	0.09	-0.03	-0.42	1.00
Composite reliability	0.81	0.78	0.90	0.89	0.85	0.86	0.85	0.89	0.90	0.79	0.83	0.87	0.93	0.90	0.86	0.86	0.82
Coefficient alpha	0.81	0.78	0.89	0.89	0.85	0.86	0.85	0.89	0.90	0.78	0.83	0.87	0.93	0.90	0.86	0.86	0.82
Mean <sup>a</sup>	4.13	4.55	4.03	4.09	3.97	4.82	4.76	3.75	4.62	3.38	4.22	2.99	3.42	4.05	4.25	4.06	2.89
Standard deviation	0.64	0.54	0.72	0.70	0.67	0.33	0.46	0.81	0.51	0.78	0.64	0.91	0.96	0.74	0.63	0.73	1.02
Minimum	1.00	1.50	1.00	1.00	1.40	3.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00
Maximum	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00

Notes: <sup>a</sup>Means based on Likert type scale, 1 = Strongly disagree, 5 = Strongly agree; <sup>b</sup>Second sample,  $n = 975$

Table IV. Summary statistics and correlation matrix of Work Preference Indicator measures

Construct factors and items	Unstd. loadings	T-value*	Construct factors and items	Unstd. loadings	T-value*
<i>Independent (INDE):</i>			<i>Take the lead (LEAD):</i>		
1. Freedom	0.576	22.713	1. In charge	0.749	27.630
2. Decide on own	0.575	23.137	2. Lead	0.808	32.397
3. Independence	0.575	21.663	3. Be responsible	0.724	25.749
<i>Task clarity (TASC):</i>			<i>Results orientation (RSLT):</i>		
1. Clear directions	0.445	18.032	1. Do well	0.312	26.703
2. Know expectations	0.353	16.654	2. Be effective	0.308	28.150
3. Well trained	0.502	20.228	3. Achieve	0.292	22.441
4. Clear instructions	0.591	24.417	4. Excel	0.310	21.832
<i>Help others (HELP):</i>			<i>Likeable (LKBL):</i>		
1. Care	0.717	26.683	1. Be cared about	0.770	27.935
2. Help	0.666	28.099	2. Know others care	0.833	31.303
3. Coach	0.626	22.957	3. Be valued	0.499	20.448
4. Support	0.645	26.681	4. Be liked	0.545	19.433
5. Assist	0.599	22.587	5. Have fun	0.410	15.457
<i>Career ladder (CLAD):</i>			<i>Mechanical (MECH):</i>		
1. Know ropes	0.506	24.229	1. Work with things	0.576	16.409
2. Career potential	0.449	23.843	2. Fix things	0.985	28.592
3. Move up	0.535	27.510	3. Study things	0.775	21.242
4. Career development	0.443	26.974	4. Repair	1.031	31.079
5. Promotional	0.460	28.325	5. Mechanical work	0.915	25.633
<i>Written material (WRIT)<sup>a</sup>:</i>			<i>Aural learning (AURL):</i>		
1. Instructions	0.727	21.177	1. Verbal instructions	0.514	18.458
2. Manuals	0.848	24.635	2. Explanations	0.657	23.633
3. Guides	0.588	18.431	3. Discussions	0.618	25.609
4. Textbooks	0.586	16.115	4. Question and answers	0.533	21.454
<i>Data (DATA):</i>			<i>Team oriented (TEAM):</i>		
1. Analyze figures	1.038	25.955	1. Successful team	0.578	21.516
2. Records	0.792	21.125	2. Share success	0.600	22.609
3. Study numbers	0.947	28.025	3. Team approach	0.814	28.522
4. Work with data	1.018	26.270	4. Work with others	0.738	25.370
5. Examine data	1.024	32.025	5. High performing team	0.693	26.080
6. Study trends	0.817	25.123	6. Work closely	0.683	23.850
7. Study systems	0.890	26.313			
8. Do analytic work	0.845	25.318			
<i>Idea (IDEA):</i>			<i>Time management (TIMM):</i>		
1. Explore concepts	0.624	23.321	1. Plan work day	0.748	23.924
2. Ideas and theories	0.706	23.902	2. Plan week	0.781	24.071
3. Develop theories	0.811	33.125	3. Schedule work	0.715	24.377
4. Initiate concepts	0.777	31.583	4. Plan ahead	0.708	26.981
5. Innovate	0.549	22.207	5. Organize	0.458	18.112
<i>Factual information (FACT):</i>			<i>Flexibility (FLEX):</i>		
1. Concrete	0.599	24.681	1. Unscheduled	0.920	22.452
2. Factual information	0.570	24.856	2. Impromptu	1.025	27.340
3. Concrete information	0.610	24.854	3. Spontaneity	0.819	21.603
4. Detailed information	0.566	24.393			

**Table V.**  
Results of confirmatory  
factor analysis model

(continued)

Construct factors and items	Unstd. loadings	T-value*	Construct factors and items	Unstd. loadings	T-value*
<i>Job fulfillment (JFUL):</i>					
1. Like job	0.395	21.557			
2. Like work	0.445	22.849			
<i>Goodness-of-fit indices:</i>					
Comparative fit index (CFI)			0.946		
Chi-Square (d.f.)			6,612.692 (2,564)		$p < 0.001$
Root mean square error of approximation (RMSEA)			0.041		
Root mean square residual (RMR)			0.045		

**Notes:** \*All the item loadings are significant at  $p < 0.001$ ;  $n = 975$ ; <sup>a</sup> Factor variances were fixed at 1 to set the scale

Table V.

*Face validity:* A second panel of experts was convened following the CFA analysis. Its purpose was to review the 17 constructs, the statistical reliability of each, and the value of each construct from their own professional perspectives. It was comprised of nine career specialists. Five had the PhD or equivalent, and all were highly experienced; seven of the nine had advanced degrees in fields such as management, human resource management, training and development, educational leadership, organizational psychology, and educational psychology. Two others were program managers who worked with the Program Director at the employee development center. They were all actively engaged in finding ways to enable others to find work that is best suited to their interests. As a result of this two day meeting, both the theoretical and practical use of each of the 17 constructs were identified following extensive discussions of their applicability in a variety of career development fields.

*Discriminant and convergent validity:* We established Discriminant validity through CFA by comparing the chi-square differences between a constrained confirmatory factor model (where the inter-factor correlation is set to 1, indicating they are the same construct) and an unconstrained model (where the interfactor correlation was free, indicating that the constructs were different). All chi-square differences (with 1 d.f.) were found to be significant, confirming that the constructs were significantly different from each other, thereby providing evidence of discriminant validity (Anderson and Gerbing, 1988). Convergent validity was also assessed using CFA. All items loaded significantly on their hypothesized factors, showing convergence in measurement (Anderson and Gerbing, 1988).

*Concurrent validity:* Concurrent validity assesses the degree to which scores obtained on certain predictor variables are statistically associated with certain outcome variables when measures for both sets of variables are obtained at the same time (i.e. concurrently) (Schriesheim, 2005).

To establish concurrent validity, we analyzed the relationship between the 17 WPI constructs and the job preferences of the graduating students. Using a five-point Likert-type scale, we assessed the degree to which the students would be interested in each of these 11 types of work placements: clerical/office; budget/finance; information technology; science/engineering/research; production/assembly/construction;

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maintenance/repair; marketing; social/health services; homemaking; creative arts; and management. These two measures (WPI constructs and work placement preferences) were assessed at the same time. The 11 types of work placements were selected because they were representative of a broad range of occupational environments and were assumed to be readily recognizable to most adults over 18 years of age.

We used multiple regression analysis to determine the significance of association between the WPI dimensions and preferences for each of the 11 work types. To minimize potential multicollinearity problems, we rescaled the independent variables as recommended by Cohen *et al.* (2003, pp. 201-204). The results of the analysis are in Table VI. For each regression, we have shown the unstandardized beta values to allow for comparisons between the work preference types. The  $R^2$  values of the regression equations range from 0.46 to 0.05; the average is 0.19.1. According to Cohen *et al.* (2003, pp. 423-424),  $R^2$  values of 0.02, 0.13, and 0.26 represent estimates of small, medium and large effect sizes. Therefore, most of these effect sizes are in the medium to large range, indicating differences in the attraction to different types of work based on the WPI scores. To check for multicollinearity, we examined the Variance Inflation Factors (VIFs) and the Condition Indices. The VIFs ranged between 1.15 and 1.56; the Condition Indices were between 1.00 and 2.86. These statistics indicate that multicollinearity is not a significant problem.

As revealed in Table VI, each job type was significantly associated with one or more dimensions of the WPI scale. Further, the unstandardized betas showed that there are differences in the direction and strength of the association between the WPI dimensions and the job preferences. The greatest number of significant work preference associations (nine) was for those who favored clerical/office, marketing, and creative arts/music type work environments, while the fewest number of significant associations (two) were found between the WPI constructs and those who preferred maintenance/repair type work).

The WPI construct, DATA, was found to be significantly associated with eight of the 11 job types, with five positive and three negative associations with the dependent variables. MECH was significantly associated with seven of the 11 job types, being negatively associated with two job types and positively associated with five others. No difference was found between work type and how respondents rated TEAM.

The results in Table VI seem to fit what might be expected. For example, those who had a high preference for jobs in budget and finance tended to score lower on HELP, AURL, MECH and IDEA, and higher on DATA, LEAD, FACT, and TIMM. Those who rate working in information technology high tended to score higher on MECH, DATA, and CLAD, but lower on RSLT. Those indicating a desire to work in management tended to score lower on INDE, LKBL, JFUL, WRIT, and higher on LEAD, CLAD, DATA and IDEA. Those who rated an interest in doing homemaking type work had the lowest  $R^2$  score (0.05), indicating that the 17 work preferences were least likely to explain this generally non-paid type of work.

#### *Retesting and validation of the scale*

After establishing the dimensionality, reliability and validity of the WPI instrument, we administered it to a new sample of 590 adult workers who were actually employed in one of ten different types of work settings. The purpose of this analysis was to validate the scale by determining if there are significant differences between the

WPI constructs <i>n</i> = 975	Clerical office <i>n</i> = 926	Budget finance <i>n</i> = 931	Info tech <i>n</i> = 951	Science engineer, Research <i>n</i> = 927	Product assembly construct <i>n</i> = 928	Maint and repair <i>n</i> = 927	Marketing <i>n</i> = 926	Soc. and health services <i>n</i> = 923	Home-making <i>n</i> = 921	Creativearts music <i>n</i> = 923	Management <i>n</i> = 928
1. INDE	-0.17***				-0.14**		-0.18**		-0.11*		-0.16**
2. TASC	0.18**									0.27**	
3. TEAM											
4. HELP	0.14*	-0.25****			-0.11*		0.17*	0.25****	0.17**	0.18*	-0.13*
5. LKBL	-0.26*		-0.30*	-0.25*		-0.24*				0.33*	
6. RSLT											-0.26****
7. JFUL	-0.12**	0.13**	0.20*		0.15****		0.21***	-0.15*	-0.12*	-0.12*	0.40****
8. LEAD				0.11*			0.25**	0.11*			0.33****
9. CLAD	0.11*			-0.12*							-0.18
10. WRIT		-0.15**		0.38****							
11. AURL		-0.12*	0.50***	0.16**	0.43****	0.58***	-0.16****			0.24***	
12. MECH		0.96****	0.40***	0.18****			-0.11*	-0.11		-0.28****	0.17****
13. DATA	0.16**						0.40****			0.37****	0.28****
14. IDEA	-0.13**	-0.30****								-0.21**	
15. FACT	0.17*						0.14*				
16. TIMM	0.13*						0.16***		0.09*	0.20***	
17. FLEX	0.12***		0.26	0.20	0.21	0.31	0.12	0.06	0.05	0.13	0.20
<i>R</i> <sup>2</sup>	0.11	0.46									

Notes: \**p* < 0.05; \*\**p* < 0.01; \*\*\**p* < 0.001

<sup>a</sup>Unstandardized regression coefficients (β) reported for each significant construct in the model

All based on Likert type scale, 1 = Strongly disagree; 5 = Strongly agree. INDE = Work independently; TASC = Task specific instructions; TEAM = Work with others in teams; LKBL = Want to be likeable; HELP = Helpful to others; RSLT = Achieve results; JFUL = Job fulfillment; LEAD = Lead others; CLAD = Career ladder; WRIT = Written learning; AURL = Aural learning; MECH = Work with things; DATA = Work with data; IDEA = Explore ideas; FACT = Work with factual information; TIMM = Time management; FLEX = Flexible

**Table VI.**  
Multiple regression analysis of Work Preference Indicator constructs on job preferences<sup>a</sup>

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ratings on the WPI constructs and the types of work adult workers had actually chosen to perform.

This sample included HR managers (34) who were in mid-level professional positions, Municipal bus drivers (56), Clerical workers in a correctional setting (51), Customer service workers from banking and hotels (132), Directors of social and health service agencies (102) having more senior positions, Executives of a public utility company (17) having very senior positions within a very large company, Finance and payroll workers (33) ranging from those having CPA's to payroll clerks, Production and assembly workers in an aluminum company (91), Welding Educators (43) who worked in vocational education and academic settings, and Fire fighters working in a large metropolitan area (31). The total sample was 590 and an entirely new sample of respondents than that used for the EFA and CFA analysis.

These respondents were asked to complete the WPI by the first author when attending adult training and education sessions conducted by him, and did so voluntarily. No randomization of their selection was possible. Due to the nature of the selection of these samples (convenience), they cannot be assumed to represent the universe of employees in their types of work. However, the differences on the 17 WPI constructs found based on the respondents' ten work types aid in the further validation of the WPI instrument, for their choice of employment occurred at a different time (before) than when they took the WPI. Table VII shows the differences in WPI ratings based on the subjects' types of work. It reflects the work preference scores and the type of work respondents performed in jobs that they had already chosen for purposes of their own employment.

The MANOVA analysis revealed significant difference in work preferences based on the type of work the subjects were engaged in professionally (Wilks'  $\lambda = 0.212$  ( $_{153,000}$ )  $F = 6,079$ ,  $p < 0.001$ ;  $\text{Eta}^2 = 0.162$ ). Of the 17 WPI measures, 16 were found to differ significantly ( $p = < 0.05$ ). These findings provide empirical evidence that points toward a commonality in work preferences among employees who perform similar types of work, and, collectively, employees who engaged in similar work differ from those in other job placement settings. It lends further support for the working hypothesis of this study that the 17 constructs can be used to assess work preferences and their suitability for specific types of work.

The findings add additional evidence to validate the utility of the 17 constructs that comprise the WPI and give support for its use in further research. It appears that the WPI can be used to help careerists and their employers gain insight about their potential fit with specific types of work placements within the organization, as well as occupations they may opt to pursue.

While the samples employed in the two analyses (see Tables VI and VII) were independent, there are some findings that reveal commonalities among the college seniors ( $n = 975$ ) who indicated a like or dislike of certain work placements and those adults who already were working in the same type of work ( $n = 590$ ). While most work types in the two studies are different (i.e. fire fighters were only studied in the second analysis), there appears to be some opportunity to compare outcomes related to the WPI constructs and: a. Adjudged work type preference of graduating seniors and their work preferences and; b. Actual work that one has chosen. In both studies there were respondents who were identified with either clerical, budget and finance, social and health services, and production and assembly line type work. A review of the

Measure	HR Dir n = 34 (a)	Bus drivers n = 56 (b)	Clerks in corrections n = 51 (c)	Customer service n = 132 (d)	Health services directors n = 102 (e)	Pub utility mgrs n = 17 (f)	Fin and payroll workers n = 33 (g)	Prod and assembly line wkr n = 91 (h)	Welding educators n = 43 (i)	Fire fighters n = 31 (j)	MS	F	Part. Eta <sup>2</sup>
INDE <sup>k</sup>	4.20 <sup>h</sup> (0.58)	3.85 (1.03)	3.93 (1.03)	3.82 (0.83)	4.44 <sup>abcdh</sup> (0.48)	4.39 <sup>h</sup> (0.57)	4.24 <sup>h</sup> (0.48)	3.55 (1.08)	4.36 <sup>abcdh</sup> (0.59)	3.88 (0.82)	6.22	9.27 <sup>***</sup>	0.13
TASC	4.57 <sup>ef</sup> (0.58)	4.53 <sup>ef</sup> (0.83)	4.43 <sup>ef</sup> (0.63)	4.63 <sup>ef</sup> (0.45)	3.86 (0.73)	3.85 (0.83)	4.31 <sup>e</sup> (0.52)	4.59 <sup>ef</sup> (0.39)	4.43 <sup>ef</sup> (0.56)	4.44 <sup>e</sup> (0.65)	5.24	14.47 <sup>***</sup>	0.18
TEAM	4.40 <sup>c</sup> (0.49)	4.38 <sup>c</sup> (0.8)	3.85 (0.95)	4.47 <sup>c</sup> (0.51)	4.33 <sup>c</sup> (0.63)	4.45 <sup>c</sup> (0.53)	4.33 <sup>c</sup> (0.57)	4.58 <sup>c</sup> (0.45)	4.26 (0.75)	4.67 <sup>c</sup> (0.48)	2.50	6.44 <sup>***</sup>	0.09
LKBL	3.85 (0.55)	4.01 <sup>c</sup> (0.84)	3.39 (0.85)	4.05 <sup>c</sup> (0.61)	3.82 <sup>c</sup> (0.64)	4.02 <sup>c</sup> (0.41)	3.87 (0.52)	4.10 <sup>c</sup> (0.62)	3.79 (0.68)	4.22 <sup>c</sup> (0.57)	2.75	6.35 <sup>***</sup>	0.09
HELP	4.35 <sup>c</sup> (0.59)	4.33 <sup>c</sup> (0.75)	3.72 (0.98)	4.51 <sup>c</sup> (0.52)	4.28 <sup>c</sup> (0.51)	4.25 (0.51)	4.13 (0.66)	4.47 <sup>c</sup> (0.48)	4.46 <sup>c</sup> (0.58)	4.45 <sup>c</sup> (0.51)	3.07	8.39 <sup>***</sup>	0.12
RSLT	4.93 <sup>c</sup> (0.23)	4.67 (0.63)	4.41 (0.58)	4.83 <sup>c</sup> (0.36)	4.74 <sup>c</sup> (0.38)	4.84 <sup>c</sup> (0.29)	4.95 <sup>c</sup> (0.16)	4.75 <sup>c</sup> (0.36)	4.80 <sup>c</sup> (0.31)	4.86 <sup>c</sup> (0.26)	1.11	6.95 <sup>***</sup>	0.10
JFUL	4.65 (0.54)	4.63 (0.72)	4.37 (0.68)	4.63 (0.62)	4.61 (0.55)	4.65 (0.46)	4.74 (0.52)	4.52 (0.58)	4.62 (0.52)	4.84 <sup>c</sup> (0.35)	0.66	1.91 <sup>*</sup>	0.03
LEAD	3.76 (0.91)	3.83 <sup>c</sup> (0.89)	3.28 (1.11)	3.74 <sup>c</sup> (0.85)	4.04 <sup>c</sup> (0.62)	4.26 <sup>c</sup> (0.58)	3.73 (0.86)	3.77 <sup>c</sup> (0.82)	3.81 (0.68)	3.82 (0.68)	2.63	3.93 <sup>***</sup>	0.06
CLAD	4.44 <sup>e</sup> (0.57)	4.29 <sup>e</sup> (0.75)	4.17 <sup>e</sup> (0.73)	4.51 <sup>cef</sup> (0.53)	3.72 (0.71)	3.91 (0.71)	4.45 <sup>e</sup> (0.51)	4.45 <sup>ef</sup> (0.53)	4.03 (0.51)	4.16 <sup>e</sup> (0.65)	5.40	14.19 <sup>***</sup>	0.18
WRIT	3.28 (0.74)	3.96 <sup>ae</sup> (0.68)	3.58 <sup>e</sup> (0.71)	3.72 <sup>c</sup> (0.71)	3.17 (0.74)	3.41 (0.62)	3.70 <sup>e</sup> (0.85)	3.82 <sup>ae</sup> (0.74)	3.87 <sup>e</sup> (0.62)	3.63 (0.67)	4.39	8.39 <sup>***</sup>	0.12
AURL	3.78 (0.78)	3.96 (0.79)	3.77 (1.09)	3.96 (0.69)	4.06 (0.61)	4.06 (0.4)	3.97 (0.58)	4.00 (0.59)	4.05 (0.67)	4.18 (0.54)	0.66	1.34	0.02
MECH	2.66 (0.99)	3.80 <sup>acde</sup> (0.75)	3.04 (0.95)	3.29 <sup>ae</sup> (0.99)	2.87 (0.84)	3.81 <sup>ae</sup> (0.79)	3.29 (0.8)	4.05 <sup>acdeg</sup> (0.69)	4.44 <sup>acdeg</sup> (0.57)	3.94 <sup>acde</sup> (0.72)	11.76	25.03 <sup>***</sup>	0.28
DATA	3.36 (0.75)	3.52 (0.8)	3.47 (0.76)	3.37 (0.94)	3.49 (0.76)	3.85 (0.82)	3.98 <sup>cdi</sup> (0.69)	3.69 (0.71)	3.22 (0.82)	3.11 (0.86)	2.40	3.72 <sup>***</sup>	0.06

(continued)

Table VII.  
Comparison of  
respondent ratings by job  
type

Table VII.

Measure	HR Dir n = 34 (a)	Bus drivers n = 56 (b)	Clerks in corrections n = 51 (c)	Customer service n = 132 (d)	Health services directors n = 102 (e)	Pub utility mgrs n = 17 (f)	Fin and payroll workers n = 33 (g)	Prod and assembly line wkrs n = 91 (h)	Welding educators n = 43 (i)	Fire fighters n = 31 (j)	MS	F	Part. Eta <sup>2</sup>
IDEA	4.32 <sup>c</sup> (0.56)	4.06 <sup>c</sup> (0.74)	3.49 (0.76)	4.28 <sup>ce</sup> (0.58)	4.57 <sup>bcdeghi</sup> (0.48)	4.13 <sup>c</sup> (0.69)	3.9 (0.67)	4.19 <sup>c</sup> (0.57)	4.26 <sup>c</sup> (0.61)	4.07 <sup>c</sup> (0.78)	5.10	13.43 <sup>***</sup>	0.17
FACT	4.24 <sup>e</sup> (0.57)	4.16 <sup>e</sup> (0.77)	3.99 (0.76)	4.39 <sup>ce</sup> (0.53)	3.77 (0.63)	3.97 (0.5)	4.24 <sup>f</sup> (0.58)	4.38 <sup>ce</sup> (0.58)	4.20 <sup>e</sup> (0.56)	4.11 (0.74)	3.31	8.62 <sup>***</sup>	0.12
TIMM	4.19 (0.61)	4.12 (0.78)	3.87 (0.73)	4.19 <sup>ce</sup> (0.57)	3.96 (0.57)	4 (0.66)	4.23 (0.64)	4.21 (0.6)	4.21 (0.57)	3.81 (0.69)	1.24	3.18 <sup>**</sup>	0.05
FLEX	3.52 (0.78)	3.11 (1.03)	2.86 (1.3)	3.35 <sup>c</sup> (0.91)	3.55 <sup>h</sup> (0.69)	3.27 (0.83)	3.23 (0.74)	3.09 (0.94)	3.43 (0.85)	3.60 <sup>c</sup> (0.85)	3.12	3.78 <sup>***</sup>	0.06

**Notes:** \* = < 0.05; \*\* = < 0.002; \*\*\* = < 0.001  
<sup>a</sup> = opstive difference with HR Directors; <sup>b</sup> = Positive difference with bus drivers; <sup>c</sup> = Positive difference with Clerks in Corrections; <sup>d</sup> = Positive difference with customer service workers; <sup>e</sup> = Positive difference with Social and Health Care Directors; <sup>f</sup> = Positive difference with public utility managers; <sup>g</sup> = Positive differences with finance and payroll workers; <sup>h</sup> = Positive difference with production and assembly line workers; <sup>i</sup> = Positive difference with welding educators; <sup>j</sup> = Positive difference with fire fighters; <sup>k</sup> = Mean (SD); <sup>l</sup> = Means based on a Likert five-point scale, 1 = SD, 5 = SA; Adjusted mean calculated at means of covariate (sex); Wilks'  $\lambda = 0.212$  (0.53,000)  $F = 6.079, p < 0.001$ ; Eta<sup>2</sup> = 0.162  
INDE = Work independently; TASC = Task specific instructions; TEAM = Work with others in teams; LKBL = Want to be likeable; HELP = Helpful to others; RSLT = Achieve results; JFUL = Job fulfillment; LEAD = Lead others; CLAD = Career ladder; WRIT = Written learning; AURL = Aural learning; MECH = Work with things; DATA = Work with data; IDEA = Explore ideas; FACT = Work with factual information; TIMM = Time management; FLEX = Flexible

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preferences of those associated with these four work types reveal notable similarities (*Note:* Such comparisons should be made with caution, as the work types are not identical and the samples were not derived randomly):

- (1) *Clerical:* Both analyses revealed clerical types' preferences to be lower than others in RSLT, INDE, LEAD, and IDEA, and higher in TASC and WRIT.
- (2) *Budget and finance:* In both studies, accounting and finance types have higher preferences for DATA and FACT, and lower in HELP, IDEA, and MECH.
- (3) *Social and health services:* Both analyses revealed these types have higher interests in HELP and IDEA, and lower interests in CLAD and MECH.
- (4) *Production and assembly line workers:* Both studies revealed higher interests in MECH, and lower preference for INDE and JFUL.

Given the differences in the two studies conducted following the CFA analysis (Tables VI and VII), there appears to be empirical support for the working hypothesis of this paper:

Respondents' ratings on the empirically derived constructs will be significantly different in terms of: the expressed types of work they would prefer and; the type of work environments that they actually select.

### Limitations of the study

Most fundamental to the understanding of this contribution is that it is still in its formative stage of development, and much more rigorous and systematic research is needed in the future in order for the constructs in the WPI to be used to predict career choice outcomes. Limitations to this work at this initial developmental stage include:

Randomization of students and their majors and those working adults actually engaged in their careers was not employed. Thus, all results relating to work types used to compare outcomes need to be viewed as tentative. More work types need to be included in the study, with specific sampling of working adults.

The WPI constructs are assumed to be similar to constructs already reported in the literature. However, actual testing of the WPI constructs with those associated with RIASEC, FFM, MBTI and others is needed before the WPI constructs may be assumed to be equivalent to other constructs previously reported in the literature. Also, many other potentially important constructs that were not included in the WPI may have been omitted and further review of other tools and constructs is merited as research in the use of multidimensional tools is expanded.

The preliminary studies did not focus specifically on short-term work placements, and more systematic research needs to be conducted to test the utility of the outcomes of the tool with specific short-term placements at work.

It is likely that other demographic variables in addition to gender may influence respondent ratings on the constructs. Future research is needed to explore this.

### Summary and conclusions

This is an introductory work that reports on the development of the WPI and its potential use as an aid to careerists as they review shorter-term career decisions associated with today's changing work contexts. As a first step, the constructs have been validated and their relationship with different types of work has been

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demonstrated. The use of the constructs in the tool may shed light on the degree to which one may find satisfaction when working with others in teams, value working with organizational customers, find meaning in helping others, leading others, be supervised, and instructed about work assignments. It helps identify one's preferred manner of learning and interacting with others on the job, achievement motivation, the values one holds that provide greatest job fulfillment, and interests related to working with data, facts, mechanical objects, ideas or people. It helps career decision makers gain insight about their preferred work environment in relation to working on detailed tasks or grasping broader concepts and ideas. It pinpoints the degree of flexibility and time management control that is suitable for a person.

These preferences can be relevant to a person involved in making work related choices in job placements as diverse as computer science, management, budget and finance, maintenance and repair, and the arts. Information generated by the WPI may be useful to employees, their supervisors, human resources planners, team leaders, mentors and vocational counselors in terms of the relative suitability of the individual with new job assignments, tasks to be performed on work teams, and career broadening options.

The WPI, as a multidimensional tool, includes constructs that have been derived from different areas of concentration within the field of career psychology. To venture a metaphor, the WPI is not intended to add a new color (i.e. new construct) to the career developer's professional palette from which to choose. However, because it is multidimensional (i.e. having multiple measures from different fields), it provides a unique mix of colors that are available to the career development specialist at one time through one instrument, validly and reliably. This is especially useful when reviewing a person's preferences as they pertain to their work related choices from either the organization or individual's perspective.

The sampling reported here has been drawn from students and other adults, most were already involved in their careers. Sampling of pre careerists at the secondary school level would aid in gaining added insight about the validity of the tool with this younger population. Further analyses of working adults' self reported satisfaction with actual work assignments, their work environments, performance appraisal scores, career progress, and succession planning rankings and their scores on the 17 measures to determine if relationships exist between them would aid in understanding the predictive power of the 17 constructs.

It is recognized that work preferences may be affected by many variables (e.g. level of education, gender, life and career stages, college major, race, ethnicity, socioeconomic status, and other organizational characteristics); these, too, merit further investigation.

Given the many limitations cited above, the development of the WPI has provided a sound basis for continued research and opens the door for further collaborative efforts among academicians and others involved in career development analysis. To this end, research partnerships with other academicians and practitioners are being developed to further explore the application of the WPI and its constructs as such relate to career choice and work satisfaction.

In conclusion, this study represents an initial effort to establish the WPI as a valid multidimensional tool to gauge individual work preferences. Future research using more specific psychological constructs and outcome measures associated with each

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will lead to modifications in order to further the purification of the instrument and its practical applicability.

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