CareerDIRECT
Living by Design
GLOBAL EDITION

RESEARCH & DEVELOPMENT

TECHNICAL MANUAL

THE *CAREER DIRECT*® ASSESSMENT PROGRAM

RESEARCH AND DEVELOPMENT TECHNICAL MANUAL

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Larry Burkett (1939-2003), co-founder of Crown Financial Ministries, responded to the call to develop ***Career Direct®.*** In his own words, "During the many years I was counseling families on their finances, I frequently observed people in career fields that didn't match their talents and abilities. It concerned me that so many people were not aware of their strengths and, therefore, were not being good stewards of their talents. This resulted in my vision for what is now *Career Direct®."*

Lee Ellis, former Vice President of Life Pathways Department, was recruited by Larry Burkett to develop the Career Direct Guidance Program and the ***Career Direct*** assessment. His leadership in providing the mission and vision for the project and assembling the exceptionally talented team as well as his personal talent in writing and career consulting enabled the organization to develop the comprehensive assessment and program in less than three years.

Garnett S. Stokes, Ph.D., Industrial and Organizational Psychology, former Psychology Department Head, former Dean of College of Arts and Sciences, Provost, major research university, Professor of Applied Psychology, and Licensed Industrial Psychologist, was the former lead research and development consultant for the Career Direct® project. Dr. Stokes, a gifted industrial/organizational psychologist, experienced in test construction and the study of the world of work, crafted the plan of research and development. Her expertise in the field guided the team to carry out the many studies and analyses described in this manual. The program of research and development resulted in an exceptional, comprehensive career assessment which is serving people around the world as they seek the work for which they were designed.

Jan Strydom, Vice President of Global Career Development, Crown Financial Ministries, responded to the vision and call to develop a global Career Direct program starting in South Africa with English and translation into the first new language, Afrikaans. His development of an inspirational and effective protocol for consultation and interpretation of individual career design within a excellent business model and training program is now being duplicated around the globe. As a result, millions of people will benefit from the knowledge of how to live and work by Design.

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INTRODUCTION

Deciding upon an occupation or occupational direction is a critical choice for many people as this choice can influence many aspects of an individual's life such as occupational success, satisfaction, and income level. Therefore, it is important for an individual to have an accurate assessment of both the world of work and how his or her personality, interests, skills, and values match and are compatible with various occupations. The ***Career Direct***® assessment provides guidance for individuals facing educational and occupational decisions as it provides information about individual and job characteristics.

The ***Career Direct*** assessment consisting of the ***Career Direct*** Personality Inventory (CDPI) and the Interests, Skills, and Values Inventory (ISVI) was developed to assess areas important to occupational decision-making such as personality, occupational interests, skills, and life and work values. Both a rational test construction approach and a principal components approach were employed in developing and revising the assessment. Several large samples were used to revise the inventory in order to develop a measure that concisely and accurately measures the areas considered in career direction. Finally, the factor structure of the assessment was reviewed to ensure a consistent factor structure across gender and age. With almost twenty years of development and over 150,000 assessments completed, the ***Career Direct*** assessment has provided significant contributions to the field of career decision making.

DEVELOPMENT OF *CAREER DIRECT*

The *Career Direct* assessment was developed in several phases. The first phase involved the development of the personality section, the Career Direct Personality Inventory (CDPI), while the second phase concentrated on the development of the interests, skills, and values sections, forming the Interests, Skills, and Values Inventory or ISVI. The third phase focused on combining the CDPI and ISVI to form a single instrument containing all the components most important to career decision-making. The third phase included the development of an online version of the single instrument and incorporation of many interactive components with O*Net (United States Department of Labor comprehensive database of occupations), and other online tools and resources. Finally, the fourth phase encompasses the reprogramming of the online version to accommodate the ongoing global development of language and cultural translations.

Personality

The Career Direct Personality Inventory (CDPI) was designed to measure normal personality and to assess personality strengths and opportunities that could impact job satisfaction and performance. Development of the personality section of *Career Direct* is fully described in Toth, Stokes, Ellis, and Elder (1995). The CDPI development began by compiling a comprehensive list of psychological traits and personality dimensions. Once the dimensions were defined, items were written in different formats (i.e. 252 single-word adjectives, 237 opposite word pairs, and 278 sentences) to rationally measure these dimensions.

The first sample of individuals participating in the development of the CDPI was divided into two groups, each receiving an instrument containing two of the three formats. The first group of 404 individuals completed a form containing single word adjectives and sentences, while the second group of 373

received opposite word pairs and sentences. Principal component analysis with an orthogonal rotation was used to determine the factor structure for each format. After comparing the interpretability of the factors resulting from these analyses, it was determined that single-word adjectives were the most easily interpretable. In addition, participants preferred the single adjective format.

A revised inventory of 171 single word adjectives measuring ten factors was developed from the item and factor analyses of Sample 1. This inventory was completed by 1000 participants along with the Marlowe-Crown Social Desirability Scale (1964). A principal component analysis was once again utilized to determine the underlying factor structure of the CDPI. This analysis revealed nine factors with internal reliability estimates (Cronbach Alpha) ranging from .64 to .95. Analyses of the items in the Sample 2 instrument revealed that the response options were not skewed and the relationship between items and social desirable responding was minimal.

Sample 3 participants (n=501) completed a revised CDPI consisting of 141 single word adjectives. They also completed the eleven item Marlowe-Crown Social Desirability Scale (1964) and two other personality assessments (the NEO-PI R and the Hogan Personality Inventory) in order to provide evidence of construct validity. The NEO-PI R (Costa & McCrae, 1985) is a self-report inventory that measures the "big five" personality factors: Neuroticism, Extraversion, Openness, Agreeableness, and Conscientiousness. The Hogan Personality Inventory (Hogan, 1986) measures seven personality factors: Ambitiousness, Sociability, Likability, Prudence, Intellect, and School Success. These inventories were included in the validation study of the CDPI because of their close correspondence with the personality factors of the CDPI and because of the extensive research supporting their use.

Personality Scale Construction: Factors

A principal component analysis with an orthogonal or varimax rotation was conducted and yielded seven interpretable factors. These factors were Extroversion, Conscientiousness, Stress, Compassion, Adventurousness, Dominance, and Innovation. The internal consistency estimates as assessed by Cronbach Alpha ranged from .88 to .94 indicating a high degree of internal reliability. The range of internal reliability coefficients was the same in a much larger sample of adults (n=4463). A listing of the reliability coefficients for each factor is presented in Table 1.

A total of 17 adjectives were eliminated from the CDPI using the following criteria: 1) adjective does not load on any factor, 2) had a low factor loading, 3) loaded on more than one factor and does not add to the definition of those factors/dimensions, 4) double loads on subfactors and is repetitive to the definition of the factor/dimension, and 5) rational judgment. Use of these criteria produced the fourth and current version of the CDPI consisting of 124 adjectives with a five-point response scale ranging from 1=Not at all like me to 5=Very much like me.

In order to assess test-retest reliability, the 124 item CDPI was given twice to 100 college students with a time interval of one week between the first and second administrations. Test-retest reliability was shown to be high with reliabilities of the factors ranging from .86 to .95. The lowest test-retest reliability was for the Stress scale ($r=.86$, $p < .001$). This was expected as the Stress scale is considered to be more situational and subject to change over time than the other scales. Table 2 provides a complete list of the test-retest reliabilities for one week, three to six weeks, six months, and one year.

The fourth and current version of the CDPI was administered to a sample of adults (n=1082) who were 21 years or older and had been in their current job (or unemployed/retired from a job which they held) for three years or more. The Interests, Skills, and Values Inventory (ISVI) (second version) was also administered to this sample. The impact of personality in occupation selection is inferred in the significant correlations between the ISVI and the personality factors of the CDPI as presented in Table 3 for ISVI General Interests, male vs. female and combined genders in Table 4.

Subfactor composition; strengths and weaknesses

To provide more specific feedback regarding personality traits and strengths and weaknesses, the seven personality factors of the CDPI were factor analyzed in order to form subfactors. A principal component analysis with a varimax rotation was conducted for each of the seven global factors. Two to three subfactors were formed from each global personality factor. The subfactors and their reliability coefficients as assessed by Cronbach alpha are presented in Table 1. The names of the factors and subfactors and their descriptions were determined based on the items in each factor and subfactor group. Strengths and weaknesses for each subfactor based on both high (>55) and low (<45) scores on the subfactor items were written and edited by the development team and were included in the report feedback to the adult normative sample of 1082 individuals.

Personality-determined career implications

Career environment implications based on high, low, and mid-range personality factors were written and edited by the development team based on the items in the factors and were included in the personality feedback report sent to the adult normative sample with a survey requesting feedback on accuracy and relevancy. According to Rounds and Day (1999), a match between personality types and environment can positively affect job performance, stability, and satisfaction.

Financial Management

The CDPI also contains 14 sentences measuring two dimensions of handling one's own financial resources. Responses to the sentences are scaled on the same five-point scale as the personality items with 1='Not Like Me' to 5='Very Much Like Me'. The first factor consists of nine items that measure Indebtedness or the likelihood of having difficulties with debt. Examples of items on this factor include "I borrow money for normal operating expenses" and "I live above my financial means". This factor yielded a Cronbach alpha of .84. The second financial factor consists of five items dealing with general financial management practices. The items on this factor are reversed-scored so that a high score indicates financial mismanagement or the lack of sound financial practices such as following a budget. Reverse scoring was done so that the meaning of high and low scores on both scales would be similar and in the same direction. Items on this scale include "I save money regularly" and "I pay my bills on time". The Cronbach alpha for this scale is .70. Items on each scale are presented in Table 5. Indebtedness and Financial Management are moderately correlated ($r=.61$; $p<.001$) suggesting that the two factors are related but that each provides unique information.

Interests, Skills, and Values (ISVI)

The ISVI was developed using standard psychometric test construction procedures. Based on a literature

review, the dimensions important to occupational and educational decision-making were defined. A key dimension included vocational interests. Vocational Interests were defined as expressed interest in three areas a) work activities, b) occupations, and c) educational subjects. Other important dimensions were self-reported skills and abilities and life and work values.

After the dimensions were defined, items were written to measure the dimensions. In writing the items, care was taken to develop items that covered the full range of jobs in the workforce. For example, the activities section of the ISVI assesses interest in various work activities. Some examples of items in the activities section include "wait on tables in a restaurant", "campaign for a political candidate or cause", and "write television scripts". Similarly, the occupation section measures interest in different careers and occupations (e.g. accountant, florist, and pharmacist) while the subjects section assesses interest in educational subjects (e.g. mathematics, science, and social studies). The educational subjects were considered particularly important for clients who did not have much work experience (e.g. high school students). Clients respond to the items in the vocational interest section by using a five-point Likert scale (1=Dislike very much to 5=Like very much). Finally, the skill items assess confidence in performing a wide array of abilities such as interpersonal skills, mathematical skills, and musical skills. Skill items are rated on a five point scale from 1=No skill to 5=Very strong skill.

There are three sections measuring values: work environment, work expectations, and life values. Work environment assesses 12 elements that are important in the work setting (e.g. flexible hours, harmony, etc.). Work expectations list 8 values or outcomes desired from work (e.g. high income, recognition, etc.) Life values prioritize 9 values concerning fulfillment of life purpose. Examples of these values include family, friends, and achievement. The values in each section are ranked in order of priority from highest to lowest. This format was adopted to compel the client to consider the relative importance of his or her values and priorities.

Scale Construction: Factors

The initial version of the ISVI contained 500 activities, 146 occupations, 78 skills, and 24 values. A sample of 2239 adults completed this inventory. Item and dimension analyses with principal component analyses with an orthogonal or varimax rotation were conducted to choose the items that formed homogeneous factors. The internal consistency estimates were assessed by Cronbach Alpha.

The second version of the ISVI was completed by 1048 adults who were satisfied with their jobs and had been employed in their current job a minimum of three years. This sample was targeted in order to construct norms based on adults who were happy and satisfied with their employment. This sample completed Version II which contained 300 activity items, 128 occupations, 18 subjects, 64 skills, nine life values and 19 work values. Principal component analyses were conducted to determine the number of factors to extract and rotate. The scree plot and eigen value level greater than 1.0 were utilized to determine the number of factors to be retained and interpreted. A rotated varimax factor analysis was used. Items were deleted if they a) were redundant with other items on a factor, b) didn't rationally fit with the other items, c) had low factor loadings, or d) loaded on multiple factors. The retained items were used to form 16 activity factors, 15 occupational factors, and 12 skill factors. Many of these factors were further divided into subfactors through factor analysis and reliability analysis.

Creation of General Interest Factors

To increase the ease in interpreting the report results, global General Interest factors were formed by factor analyzing the vocational interest factors (activities, occupations, and subjects). A principal components analysis was conducted using a varimax rotation. Using both statistical criteria and a rational approach, twenty General Interest factors were retained. There were a number of factors that loaded on more than one General Interest scale. Several variables were considered in determining where to place a specific factor. These were a) factor loadings, b) change in Cronbach alpha if factor was eliminated from scale, and c) rational fit of factor with the other factors on the scale. For example, some factors that were highly correlated with one another were placed onto separate scales if it was felt that it would be useful for the client to receive scores on separate scales.

In the third version, the Interests, Skills, and Values Sections were further refined on a client sample of 3841 adults and 2540 youth. Item and dimension level analyses were again used to delete items that were redundant or heterogeneous with the other items on a factor. In addition, these large samples allowed investigation of gender and age differences in the factor structure of the Interests, Skills, and Values Section. In order to have identical factors for all groups, items that were unstable across gender or age were deleted. New items were written and added to the inventory based on a rational approach, with the intention of data collection and future re-analysis of the factor composition. A revised inventory was printed and a new computer program (ISVI4) was written to include: (1) updating the report and incorporating expanded report feedback, (2) Windows95 format and updating the database from MSAccess2.0 to MSAccess97, and (3) collecting of the new data items.

In preparation for the next version of the ISVI, a sample set of 8,870 ***Career Direct*** clients was randomly selected from the client database of the ISVI4. The sample sets were separated into adult and youth samples, and equated for gender in each age group. Items in each category were re-analyzed using factor analysis and item analysis techniques. Based on these analyses, decisions were made to revise and/ or re-name several activity, occupation, general interest, and skill groups and to incorporate these proposed changes into the next revision of the assessment (ISVI5). Several factors incorporated data from the items newly added in the last revision, strengthening and refining the composition of these factors as seen in Tables 6, 7, and 8.

ISVI5 was incorporated into the CD-ROM version of Career Direct which substantially changed the report format, combining the personality and interests, skills, and values sections together in one report for the first time. This version eliminated the requirement for mailing completed assessments into the home office for electronic scoring, printing, and returning mailing, and delivered results directly to the client's printer.

ISVI6, the first online version, included no changes in items or factors, but substantially changed the format and delivery of Career Direct as an online assessment. Three reports were added, the ***Summary Report***, consisting of a one page profile overview plus two table pages, the ***Coaching Report,*** including extra interpretive tables, and administrative indices for accuracy evaluation, and the interactive ***Action Plan Report***, which provided on-demand interactivity with O*Net, the United State's Department of Labor online occupational database for occupational research and discovery. The online version also provided all ancillary materials in downloadable digital format.

The ***Global Career Direct*** online version provides one report format for all available language/cultural translations and immediate translation of a client's report into any available and validated ***Career Direct*** language.

Normative Samples

Adult Sample

The sample consisted of volunteers who responded to a written appeal mailed to 6,500 persons randomly selected from a national mailing list of 150,000 persons. The criteria for participation required the individual to be 21 years or older and to have been in their current job (or unemployed/retired from a job which they had held) for three years or more. In addition, they were asked to rate their satisfaction with their occupation and their success in their occupation. Additional work information and demographic information was also requested. CDPI and ISVI Surveys and the Strong Interest Inventory were sent out to 1500 individuals who expressed an interest in participating and met the criteria for participation. Completed surveys were returned by 1082 individuals for a 72.1% completion rate. The demographics of this group are presented in Table 9. Of these, 1048 individuals met the criteria of age and satisfaction and relative success in an occupational field in which the person had been for at least three years. The sample was further refined to those currently employed and 24 years of age and older. This sample was used to develop normative scoring for the adult population of 24 years and older.

Youth Norms

In order to provide normative scoring for younger users of ***Career Direct***, the CDPI and the ISVI were sent to a group of people 23 years of age and younger. This sample of 572 individuals consisted primarily of college freshmen from 26 colleges across the United States. This sample was used to develop normative scores for a youth population aged 23 years or younger.

RELIABILITY

Internal Consistency

Coefficient alpha measures reliability by assessing the homogeneity of the items on a scale. That is, a scale's alpha indicates the degree to which the items intercorrelate with one another. High correlations among items provide evidence of a scale's internal consistency and indicate that the items are tapping a single underlying dimension (DeVellis, 1991).

The internal consistency estimates of the seven CDPI personality factors as assessed by Cronbach Alpha ranged from .88 to .94 indicating a high degree of internal reliability. The range of internal reliability coefficients was the same in a much larger sample of adults (n=4463). The coefficient alphas of the personality subfactors ranged from .73 to .92 with a mean of .83, also indicating a high degree of internal reliability. Review Table 1 for a listing of the reliability coefficients for each personality factor and subfactor.

The coefficient alphas of the ISVI factors provide evidence of the factors' reliability and homogeneity.

The coefficient alphas for the 36 activity factors range from .78 to .93, with a mean of .85. The alphas for the 22 occupational factors range from .76 to .90, with a mean of .84. For the 14 skill factors, the coefficient alphas range from .70 to .90, with a mean of .84. The coefficient alphas for the 21 General Interest scales (comprised of the activity and occupational factors and the subject items) range from .82 to .93, with a mean of .88. Review Table 7 for the coefficient alphas for the General Interests factors and Table 8 for coefficient alphas for the activity, occupational, and skill factors.

Test-Retest

In order to assess test-retest reliability, which is defined as consistency of measurement over time, additional test-retest studies of the complete assessment were conducted to assess the reliability of the CDPI and ISVI factors over three different time periods (three to six weeks, six months, and one year). For these test-retest time intervals, individuals who had participated in the Occupational Profiling Study were contacted to ask if they were willing to take the assessment a second time. Review Table 2 for a complete list of the CDPI personality factor test-retest reliabilities.

In the first test-retest study of both inventories, there were 166 adults (96 males and 70 females) who completed Career Direct three to six weeks after originally taking the assessment. The average age of the sample was 43.83 +years. The mean correlation coefficient of the personality factors was .88 and ranged from .85 to .90. The mean correlation coefficient of the personality subfactors was .83 and ranged from .65 to .90. These values presented in Table 2 indicate that the personality factors and subfactors are stable over time.

The mean correlation coefficient of the General Interests between the first and second administrations was .88 with coefficients ranging from .81 for International to .93 for Mechanical. These values presented in Table 10 indicate that the General Interests factors are stable over time. The reliability coefficients for the components comprising the General Interest factors (Activities and Occupations) and the Skills factors presented in Tables 11a, 11b, and 11c are similar. For the 36 activity factors, the reliability coefficients ranged from .83 (Customer Service) to .94 (Athletic) with a mean of .88. The reliability coefficients for the 22 Occupational factors ranged from .80 for Languages to .91 for Adventure, with a mean correlation of .88. The 18 subject items had a mean of .79 and ranged from .69 to .88. The lower coefficients of the subjects are expected since the subjects are composed of only one item and therefore, are less reliable. For the skills, the coefficients ranged from .83 (Working with Others) to .94 (Musical). The mean correlation for the 14 Skill factors was .88. Overall, the correlations of the ISVI factors from the first administration to the second administration three to six weeks later support the conclusion that the ISVI factors remain stable and reliable over time.

For the second test-retest study, there were 75 participants who completed the assessment and then took it again approximately six months later. The mean correlation coefficient for the personality factors was .83, and ranged from .81 to .86. The mean correlation coefficient of the personality subfactors was .79, and ranged from .60 to .87. These values again presented in Table 2 indicate that the personality factors and subfactors are stable over a six month time frame. The mean correlation coefficient for the General Interests Scales between the first and second administration was .87, ranging from .79 for both International and Religious to .93 for Adventure. These values are similar to those from the first test-retest study and indicate that the factors demonstrate a very high degree of stability over a longer time interval. The mean correlations for the Activity, Occupational, and Subject factors for the six month retest study

were also similar to those yielded in the study with a much shorter retest interval. The mean correlation for the Activity factors was .83 and ranged from .72 to .93. The Occupational factors yielded a mean correlation of .85 and ranged from .74 to .95.

For the third test-retest study, there were 50 participants who completed the assessment and then took it again approximately one year later. The mean correlation coefficient for the personality factors was the same as six months at .83, and ranged from .80 to .86. The mean correlation coefficient of the personality subfactors was .78, and ranged from .58 to .87. These values presented in Table 2 indicate that the personality factors and subfactors are stable over a one year time frame. The mean correlation coefficient for the General Interests Scales between the first administration and one year later was .86, ranging from .68 for Religious which was also the most change to .92 for Computational/Financial, Security, and Technological. These values are similar to those from the two earlier test-retest studies and indicate that the factors demonstrate a very high degree of stability over a longer time interval. Again, the test-retest correlation values for all ISVI factors are presented in Tables 10, 11a, 11b, and 11c.

VALIDATION EVIDENCE

Correlations with Hogan and Neo-PI Personality Assessments

The validity evidence significantly supports the CDPI and the seven personality factors both in several measures of construct validity and in client feedback in empirical validity. Participants in Sample 3 of the CDPI also completed the NEO-PI and the Hogan Personality Inventory, both well-known and well-documented in academic, corporate, and professional counseling circles. Extroversion was strongly related to the NEO-PI's measure of extraversion ($r=.82$, $p < .0001$) and Hogan's measures of sociability ($r=.63$, $p < .0001$) and ambition ($r=.52$, $p < .0001$). Conscientiousness correlated highly with the NEO-PI's measure of conscientiousness ($r=.78$, $p < .0001$) and moderately with Hogan's measure of prudence ($r=.44$, $p < .0001$). More specifically, the conscientiousness factor correlated highly with Hogan's mastery subscale ($r=.53$, $p < .0001$) defined as being hard working. The stress factor was highly related to the NEO-PI's measure of neuroticism ($r=.81$, $p < .0001$) and the Hogan's adjustment scale ($r= -.74$, $p < .0001$). Compassion showed a significant relationship with NEO-PI's agreeableness ($r=.57$, $p < .0001$) and the Hogan's likeability scale ($r=.61$, $p < .0001$). Adventurousness was moderately related to the NEO-PI's extraversion ($r=.51$, $p < .0001$), and the Hogan's ambition scale ($r=.55$, $p < .0001$). Dominance correlated moderately with the NEO-PI's extraversion ($r=.33$, $p < .001$) and conscientiousness ($r=.36$, $p < .0001$). Dominance correlated moderately with Hogan's ambition scale ($r=.54$, $p < .0001$). Finally, innovativeness correlated moderately with the NEO-PI's openness ($r=.47$, $p < .0001$) and significantly with the Hogan's intellectance scale ($r=.55$, $p < .0001$). The correlations of the CDPI extroversion, conscientiousness, adventurousness, dominance, and innovativeness scales with the Marlowe-Crowne scale of social desirability were very low with a range of $r=.05$ to $r=.19$. Compassion ($r=.30$, $p < .0001$) and stress ($r= -.32$, $p < .0001$) were somewhat higher but these were still lower than the correlations between comparable NEO-PI scales of agreeableness ($r=.40$, $p < .0001$) and neuroticism ($r= -.38$, $p < .0001$) and the Hogan scales of likeability ($r=.41$, $p < .0001$) and adjustment ($r=.35$, $p < .0001$) with social desirability. See Tables 12-14 (or Tables 3-5 in Toth, et al., 1995) for the correlations of the CDPI with the NEO-PI and the Hogan Personality Inventories.

Correlations with Strong Interest Inventory

Validity evidence for the ISVI is provided by examining the correlations of the ISVI factors with another measure of vocational interests, the Strong Interest Inventory (SII, 1985), completed by the adult normative group participants. The first version of the SII was developed in 1927 by E.K. Strong to measure occupational interests (Harmon, Hansen, Borgen & Hammer, 1994). Since the construction of the original instrument, the SII has been revised numerous times, translated into five languages, and a tremendous amount of research supports the measure's validity.

Much of the structure of the SII is based on Holland's theory of vocational choice (Harmon, et. al, 1994). Holland's theory proposes that individuals and occupations can be characterized according to a combination of six types: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. Moreover, Holland's theory states that individuals are more satisfied and more productive in occupations that match or are congruent with their personality and interests. This theory of congruence is well established in the literature and supported by extensive research. Therefore, it was expected that sizeable correlations between the ISVI and the SII would provide significant evidence of validity for the ISVI. The ISVI General Interest factors were correlated with the Strong General Occupational Themes (GOT), the Basic Interest Scales (BIS) and the Occupational Scales (OS). The General Occupational Themes represent Holland's six broad vocational themes: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. The GOT scales were created in 1974 by selecting items that corresponded with Holland's definition of the six vocational types (Harmon et. al, 1994). The items were evaluated through examination of item intercorrelations, item-scale correlations, and endorsement of items by employees in various Holland-typed occupations (Harmon et. al, 1994). In 1994, items were deleted or added to the scales to enhance their internal consistency and to maintain consistency with Holland's typology (Harmon et. al, 1994). As such, the GOT scales are defined similarly to Holland's six vocational types. People scoring high on Holland's Realistic theme tend to be interested in mechanical, adventurous, physical, and outdoor activities (Harmon et. al, 1994). People who are interested in Investigative occupations typically like researching, analyzing, and gathering and interpreting new information (Harmon et. al, 1994). The Artistic theme characterizes people who enjoy art, writing, or performing (Harmon et. al, 1994). Individuals differentiated on the Social scale like to work, care, and lead others (Harmon et. al, 1994). Enterprising people typically enjoy selling and persuading others while those who are Conventional types like activities which require attention to detail such as accounting, mathematics, and data management (Harmon et. al, 1994)

The General Interest scales of the ISVI were correlated with the GOTs (Table 15, highest correlations and Table 15b, all correlations). Separate correlations were conducted for males (n=565) and females (n=410). A review of the correlations indicate congruence between the General Interest scales and the appropriate Holland category. For instance, the Artistic GOT correlates highly with the Artistic and Performing/Communicating General Interest Scales for both males and females. A subset of the table with correlations (r) above .30 (plus or minus) between the Strong Holland (RIASEC) scales and Career Direct scales for the full sample (males and females) is as follows (n=1002, normative sample of working adults):

Career Direct Occupational Scales	Strong Realistic	Strong Investigative	Strong Artistic	Strong Social	Strong Enterprising	Strong Conventional
Skilled Technical	0.87	0.47				
Professional						
Outdoors	0.66	0.37				
Non-technical	0.48					
Adventure	0.64	0.46				
Fashion			0.56			
Service						0.45
Science	0.51	0.79				
Performers			0.65	0.38		
Writers/Artists		0.32	0.78	0.35		
Management				0.44	0.77	0.50
Security	0.35					
Law/ Politics		0.35		0.42	0.48	
Counseling/		0.36	0.36	0.75	0.35	
Education						
Animal Services	0.34	0.35				
Medical		0.44		0.36		
Financial		0.42				0.72
Foreign Service/		0.33	0.50	0.44	0.33	
Languages						
Drivers	0.48					
Athletes	0.31			0.36		
	Note 1: $p < 0.001$					
	Note 2: Composition and names of occupation factors have changed slightly as item adjustments have been made from 1995 to 1999.					

The ISVI General Interest scales were also correlated with the Strong Basic Interest Scales. The 23 Basic Interest Scales (BISs) were formed through statistical analyses and are homogeneous subcomponents of the more diverse GOTs (Harmon et. al, 1994). Among the scales of the Strong, the BIS scales are most similar to the ISVI General Interests. The highest correlations between the General Interest Scales and the BISs for males (n=565) and females (n=410) are presented in Table 16 and all correlations in Table 16b. As expected, the General Interest Scale, Education (which is composed of interest in Educational Activities, Occupations, and Subjects) is highly correlated with the BIS scale, Teaching. The correlations for men and women are .82 and .83, respectively. Items from the BIS scale include elementary school teacher, high school teacher, teaching children, and having patience when teaching others (Harmon, 1994). These items are similar to the composition of the General Interest Scale, Education. As the General Interest Scales generally correlate with appropriate BISs from the SII, these correlations provide support for the validity of the ISVI.

The Strong Occupational Scales are empirically constructed by choosing items that differentiated members of a particular occupation from a more general group of employed individuals. Items were selected for an occupational scale if members of that occupation chose substantially different “Like” or “Dislike”

responses than a general comparison group of employed individuals. A review of Table 17 suggests that, in general, the General Interest Scales correlate with expected Occupational Scales. For example, in the male sample the General Interest factor 'Management/Sales' correlates with the Strong occupational scales of Realtor, Life Insurance Agent, and Store Manager with correlation coefficients of .80, .76, and .75; respectively. Table 17 presents the highest correlations between the General Interest Scales and the Strong Occupational Scales for males and females. Overall, the correlations of the General Interest Scales with the General Occupational Themes, Basic Interest Scales, and Occupational Scales of the SII provide strong evidence of the validity of the ISVI.

Regression Analysis

The relationship between the Strong Interest Inventory and the ISVI was further examined using regression analysis. In these analyses, ISVI factors were used to predict scores on the 1985 Strong occupational scales using a sample of 1024 adults (599 males and 425 females). Separate equations were developed for males and females using the male and female Strong scales (105 scales, male and females). Several models were compared to find what combination of factors explained the greatest amount of variance. The model using general interests along with personality subfactors was found to be the most predictive of the Strong scores. This model yielded an adjusted R-squared statistic, which represents the amount of variance accounted for out of a total of 1.00, which ranged from 0.52 (chiropractor) to 0.83 (computer programmer for males, and 0.54 (librarian) to 0.86 (veterinarian) for females. Due to a high intercorrelation between the Mechanical and Technological General Interest factors, these factors were combined into a single Mechanical/Technological General Interest factor. There was also multicollenarity among the personality subfactors of Compassion, Extroversion, and Stress; therefore, the factor scores were used in the analyses instead of the subfactor scores. This model yielded an average adjusted R^2 for the 102 male occupational scales of .71 (59% were higher than 0.70) and an average adjusted R^2 of .72 for the 105 female occupational scales (71% were higher than 0.70). This indicates that a combination of Career Direct interests and to a lesser extent, the personality factors, account for a significant amount of variance on the Strong occupational scales. A comparison of the statistic for the three models are provided in Table 18. These analyses also demonstrate how important various general interests and personality traits are in explaining the variance of specific Strong Occupational Scales. For instance, the regression analysis for the Strong Occupational Scale of computer programmer for males yields an adjusted R^2 of .83 and highlights what interests and personality traits are similar to those of computer programmers. Examination of the t-values indicates which variables are predictive of interest in various occupations. The General Interests with significant positive t-values include Mechanical/Technological ($t=14.48$, $p<.001$), Computational/Financial ($t=11.66$, $p<.001$), and Health/Science ($t=10.71$, $p<.001$). These General Interests are similar to the interests of computer programmers. The General Interests with significant negative t-values indicate which General Interests are dissimilar to those of Computer Programmers. These include Management/Sales ($t=-8.86$, $p<.001$), Food/Consumer Science ($t=-6.25$, $p<.001$), Law & Politics ($t=-5.091$, $p<.001$), and Counseling ($t=-4.45$, $p<.001$) among others. Several personality variables were also predictive with higher scores on Bluntness ($t=3.48$, $p=.001$), and preciseness ($t=2.07$, $p=.039$) and lower scores on Extroversion (-5.35, $p<.001$), Assertiveness (-3.43, $p=.001$), and Compassion ($t=-2.26$, $p=.039$).

ISVI Correlations with CDPI

Further evidence of the ISVI is provided by correlations between the General Interests and the *Career Direct* Personality Inventory. The pattern of correlations suggests that the General Interests are correlated with personality characteristics congruent with specific vocational interests and occupations (see Table 19). For example, Management/Sales which requires ease in communicating, directing, and interacting with others is significantly correlated with Extroversion, Adventurousness, and Dominance. Table 20 presents the correlations between the General Interests and the personality subfactors of the CDPI. These results pinpoint the specific components of personality that are important. For example, by examining the correlations between the subfactors of Dominance and the Management/Sales General Interests factor, it is clear that the subfactor of Assertiveness with a correlation of .426 is more important than independence (.211) and bluntness (.188).

Additional evidence of the ISVI is provided by correlations between the ISVI Skills Factors and the personality subfactors of the CDPI as shown in Table 21. For example, by examining the correlations between the subfactors of Adventurousness and Extroversion and the Marketing Skill factor, it is clear that the subfactors Ambitious with correlations of .452 and Daring (.395) are more important to Marketing skill than Enthusiasm (.338), Social (.360) and Verbal (.306), the subfactors of Extroversion.

Emperical Validity

Further evidence of validity was provided by client responses to evaluation surveys included in the returned feedback reports. Accuracy of the personality factors rated by the clients themselves ranged from 92% to 96%, accuracy of the strengths, 97%, accuracy of the weaknesses, 83%, and overall helpfulness of the report, 96%. The lower perceived accuracy of the weaknesses led to changes in the text to make the statements less conflicting. Accuracy of the personality factors rated by a close acquaintance or spouse ranged from 87% to 93%, accuracy of the strengths, 94%, and accuracy of the weaknesses, 71%. Again, changes were made in the text to make the statements less conflicting.

Further assessment of construct validity based on client responses to the evaluation surveys on the Interests, Skills, and Values sections indicated that 90% of clients considered the Interest scores accurate and 87% considered the Skills scores accurate. Clients gave ratings of helpfulness of the Values sections as follows: Work Environment, 91%; Work Outcomes, 89%, and Life Values, 99%.

SCORING AND SCALES

The CDPI personality item scores for the normative adults and youth groups were summed for each factor (six personality, one life/stress, and two financial) and each subfactor (sixteen, two or three for each factor) These are the sums of the numerical responses marked for each word of the factor (a five-word factor with all “5’s”, “very much like me” responses has araw score of twenty-five; all “1’s”, “not at all like me” responses results in a raw score of five).

Standardized “T”scores were derived from the raw scores of the standardization sample for adults and youth normative samples. The conversion formula for “T” standard scores is: T score = ((x-m)/ s)(S) + M, where x = raw score, m = sample mean, s = sample standard deviation, S = Standard t-score

deviation of 10 and M = standard t-score mean of 50.

Standardized scores insure that all scores are on the same scale of reference and therefore can be meaningfully compared and contrasted. Standardized T-scores put all scores on a scale where the mean or midpoint is 50 and almost all scores fall between 20 and 80. Within the scoring program, T-score conversion tables for adults and youth exist for each factor and subfactor for converting raw scores to standardized T-scores.

Using a T-score scale, low scores of below 20 were rounded up to 20 and high scores above 80 were rounded down to 80, making twenty the lowest possible score and 80 the highest. Fifty is the mean and the standard deviation is 10. One standard deviation above is 60, and one standard deviation below is 40.

The report sets the cutoff points for low and high at 45 and 55, respectively (½ standard deviation). Low scores are 44 and below, mid-range are 45 to 55, and high are 56 and above. These categories place approximately one-third of the scores in the low category, one-third in the mid-range, and one-third in the high range.

In recent versions of the ISVI, item scores for each factor are summed and then averaged. This average is converted onto a scale ranging from 20 to 80 with 1=20, 2=35, 3=50, 4=65, and 5=80. This scoring allows the relative comparison of scores across factors and provides the client with an intra-individual ranking of interests and skills.

Earlier versions of the ISVI utilized normative scoring. This led to several problems, especially when separate norms were used for males and females. Many of the interest scales were not normally distributed within the normative sample. For example, the Transportation activities and occupational factors had below average means, indicating a lack of interest in this career field by most people/women. However, when the raw scores were converted to standardized scores, individuals who may have indicated only a neutral interest in the Transportation field yielded high standardized scores, indicating high career interest. Since this occurrence was frequent and misrepresented clients' relative interest in different career fields, normative scoring was discarded and a criterion reference scoring system was adopted using averaged raw scores. The criterion reference scoring system is supported by The Standards for Educational and Psychological Testing (1999) which was jointly developed by three organizations (the American Educational Research Association, the American Psychological Association, and the National Council on Measurement in Education) to guide test developers and researchers in the construction and use of tests. As such, the Standards provide specific criteria to use when evaluating educational and psychological tests.

CONSTITUENCY RESEARCH

College Major Selection

Christian Financial Concepts began in 1995, prior to the merger which formed Crown Financial Ministries, to study college major and career selection as part of its larger research and development program. The study began with a sample of 536 college students, primarily freshmen, from all regions of the

United States. This sample formed the basis of the youth scoring norms for ***Career Direct®***. All students in the sample completed ***Career Direct***, and also a questionnaire containing data elements regarding college major and career plans and an agreement to participate in follow-up studies. In 1998, the senior year for most of the sample, students were invited to complete ***Career Direct*** again for comparison purposes, and to complete a follow-up questionnaire regarding their college experience, selection of major, career expectations and the benefits of ***Career Direct*** in this process.

Of the students who participated in the follow-up study (20%), an overwhelming 82% indicated that they would recommend ***Career Pathways*** (now called ***Career Direct***) to others because it was an excellent way to learn more about oneself and the career opportunities that are available. Identification of strengths and weaknesses was frequently cited as the most useful information provided to the students in their ***Career Direct*** feedback reports. When asked about their career decision and goals, about half of the students indicated that they did not know what they wanted to study when they entered college, but that the guidance they received from ***Career Direct*** provided them with a direction to pursue. Half also found that they did well in the areas which were recommended to them in their ***Career Direct*** feedback. As indicated in other studies, a primary source of career information was reported to be parents, indicating a need to educate parents as well as students about the career selection process and the information available from career guidance programs. About half of the students felt that the ***Career Direct*** told them interesting things about themselves and encouraged them to investigate their career options further. An additional 22% gave the assessment higher ratings on this scale, indicating they viewed the assessment as contributing greatly to their career decision making process (Cooper & Noble, College Students' Feedback, 1998).

The comparison of the assessment scores in 1995 and 1998 yielded some interesting results, especially when looking at differences in major declaration. Overall, test-retest correlations between the 1995 and 1998 personality factors and subfactors were all significant. This finding supports previous research which largely holds that personality stabilizes during young adulthood. The personality factors and subfactors were all significantly correlated from 1995 to 1998 and ranged from .459 to .681 with a mean of .580 as presented in Table 22. The stability of interests has received less attention from researchers, however, they were also found to be quite stable and for this sample test-retest correlations of the activity interests dimensions were unexpectedly higher than personality with a range of .566 to .782 and a mean of .688 as presented in Table 23.

This study looked further to see whether personality or interests will distinguish between Major-Declared (majors relatively unchanged from college entry to follow-up survey in 1998) or Major-Deciders (changed from undecided at college entry to selection of a single major) and/or Major-Changers (those who had had several majors or had made drastic changes in the area of their beginning and ending major). The points in time for career/major decisions for the three categories are presented in Table 24. Overall, there was not a great deal of change on the personality dimensions. However, the Major-Declared group had a high level of mean change on Compassion. Major-Deciders had high mean change on Sympathetic and Financial Management. Unexpectedly, most of the amount of change on the interest dimensions was found in the Major-Decider group (those who were undecided at college entry). They exhibited change on five interest activities; two interest/occupations; and one skill group. Major-Changers exhibited a great deal of change on four interest activities. Overall, most of the amount of identified change was on the students' interest in particular activities, rather than in occupations or skills. Several significant differences were identified on the items taken from the College Follow-up Survey.

The students differed significantly on the degree to which they found "interesting subject" important to their career decisions, F(2,90) = 3.11, p £ .049, and "advice from family" F(2,87) = 4.89, p £ .010. In both instances, the Major-Deciders had higher mean importance ratings. Two additional significant differences were related to differences among the three groups regarding how helpful/useful they found the ***Career Direct*** feedback. Major-Deciders had the highest agreement rating with "I didn't really know what I wanted to study when I entered college but the guidance I received from ***Career Direct*** provided me with a direction to pursue," F(2,90) = 6.28, p £ .003. However, on the item which asked the students to make an overall rating on how useful they found the ***Career Direct*** feedback, the Major-Changers had the highest mean rating, F(2,90) = 4.28, p £ .017. Students who made their career decisions sometime during their 2nd year were much more likely to agree with "When I started college, I thought that I knew what I wanted to study, but I changed my mind once I took classes in that area", F(3,65) = 6.09, p £ .001 and "I didn't really know what I wanted to study when I started college, but the guidance I received from ***Career Direct*** provided me with a direction to pursue", F(3,65) = 5.01, p £ .0003, (Cooper & Noble, An Investigation of Personality, 1998).

The results of this initial phase of study are encouraging and indicate positive benefits from ***Career Direct*** for the students who participated in the follow-up study. The study has been limited somewhat due to the logistics of contacting students at more than twenty different institutions. ***Crown Financial Ministries*** has expanded the study over the last twelve years to large percentages of the student bodies (including almost all entering freshmen) at two colleges in order to better examine retention rates, frequency of major changes, length of college stay, and career choices after graduation under somewhat more controlled conditions. Regression analyses using personality, interests, and skills factors to form multivariate predictive profiles for specific college majors are also planned. These are very complex issues that may not be highly correlated with a single element, such the right major, no matter how excellent the career guidance provided. However, ***Crown*** expects to obtain data that will add to the knowledge about these areas and will be helpful to the institutions involved and a large portion of their student bodies. Data from nineteen graduating classes between the two colleges are being prepared for analysis.

Occupation Selection/Job Satisfaction

In a preliminary paper, *Using Personality to Differentiate Between Hollard's Occupational Groups*, Toth (Toth, et al., 1998), found that although there have been studies that have explored the relationships between personality and interest dimensions and studies linking personality to Holland's typology operationalized by responses to an interest measure, studies linking personality to actual job choice have been limited. This study investigated the degree to which seven personality scales (Dominance, Extroversion, Conscientiousness, Compassion, Stress, Innovation, and Adventurousness) differentiate between occupational groups coded using Holland's typology.

Historically, vocational assessment's dominating purpose was classifying and identifying individuals for industrial jobs. The focus has shifted from measuring individual differences to that of person-job fit within occupational groups and differential occupational activity (Kapes & Mastie, 1988). The person-environment model has proven to be a useful frame work for assessing and understanding occupational choice.

Holland (1973) uses a congruity model that states that job satisfaction is most likely to be found in work situations in which personality characteristics of the individual are congruent with characteristics of the

work environment. As Gottfredson and Holland (1989) noted, "a variety of types of people are found successfully working within any single occupation, but some types are found more frequently than others" (p. 3). It is suggested that those types tend to cope more successfully than others with the demands of the occupation. As Kenrick and Funder (1988) noted in their review of personality literature, "people with different personality traits will choose different settings" (p. 29).

Holland (1985; 1996) was able to develop a theoretical model of vocational interests that meaningfully integrated past research. Holland's theory continues to dominate current theories of vocational interests and occupational choice, and the typology has been used extensively in research (Borgen, 1991; Fouad, 1994; Gottfredson, 1980). Holland maintains that there are six dimensions of vocational preference (Realistic, Investigative, Artistic, Social, Enterprising, and Conventional) that form a typology of vocational personalities. Although there have been several studies that have explored the relationships between personality and interest dimensions (see Hogan & Blake, 1996), and a few studies linking personality to Holland's typology operationalized by responses to an interest measure (Costa, et aI., 1984; Gottfredson, et aI., 1993), studies linking personality to actual job choice have been limited (Stokes, et al., 1997). This study investigated the degree to which seven personality scales (Dominance, Extroversion, Conscientiousness, Compassion, Stress, Innovation, and Adventurousness) differentiate between occupational groups. Participants (N = 808) were volunteers who were part of the adult normative group described elsewhere in this Manual. Research participants were required to be 21 years or older and to have been in their current job for a minimum of three years. Participants completed the ***Career Direct Personality Inventory*** (CDPI; Stokes, et al., 1996). The Dictionary of Holland Occupational Codes (2nd ed) (Gottfredson & Holland, 1989) was used to classify the participant's current occupation.

A Descriptive Discriminant Analysis (DDA) was conducted to determine which personality scales contributed most to occupational group separation. The DDA resulted in four significant canonical discriminant functions, Wilks' $\Lambda = .813$, $X2\ (49) = 165.770$, $p < .01$. The effect size was ή (squared) = .19. The functions were interpreted in terms of the structured rs, as suggested by Tatsuoka (1986). Occupational groups were evaluated on the discriminant functions using the group means on the function. The first significant canonical function was defined by Compassion (r = .712) and Extroversion (r = .535). The occupations classified as CS/SC (e.g. secretary, clerk, bank teller) were high on this function (group mean of .45), whereas the IR/Rl (e.g. engineer, electrician, pilot) occupations and the ER/RE (e.g. mechanic, plumber, construction worker) occupations were low (group means of -.48 and -.38, respectively).

The second significant canonical function was defined by Adventurousness (r = .81), Dominance (r = .65), and Extroversion (r = .58). The ESR (e.g. realtor, insurance agent, sales) occupations had a group mean of .35 on this second function, making them the highest scoring group, whereas the CR/RC (e.g. bookkeeper, accountant) occupations and the IS/SI (e.g. physician, dentist, nurse) occupations had a group means of -.33 and -.29, making them low.

The third significant canonical function was defined by Conscientiousness (r = .64), Dominance (r = .51), and Compassion (r = -.47). The CR/RC occupations had the highest group mean (.39) on the third function.

Finally, the fourth significant canonical function was defined by Stress (r = .60), Innovation (r = -.53), and Conscientiousness (r = -.49). The ER/RE occupations had the highest group mean (.26) on the fourth

function.

This research provides evidence of generalizable patterns of personality that influence preferences for particular occupations. The most important personality dimensions for differentiating the Holland groups were Compassion, Extroversion, Conscientiousness, and Stress. These results are consistent with previous research relating the Big Five personality dimensions to vocational interest categories using Holland's model, with one important exception. Stress, similar to the NEO-PI Neuroticism scale (Costa & McCrae, 1985), has previously been shown to have little or no relationship to the construct of interests (Hogan & Blake, 1996). Finding that individuals in jobs such as mechanic, plumber, and construction worker were high on the function defined by Stress possibly suggests environmental factors in those jobs creating anxiety and depression.

This research has implications for vocational counseling and helping clients improve the probability of making a satisfying career choice. Wilk and Sackett (1996) noted, as with Wanous' (1976) research on realistic job previews, that individuals need accurate information about their abilities and interests to make informed occupational choices. Our results suggest that personality measures should be an important component of any overall assessment for vocational counseling. These findings also suggest that personality measures can be useful as part of a broad personnel classification system to enhance person-job fit. Based on our results, the increasing focus of career specialists on the usefulness of personality measures appears warranted.

In a more in-depth study, Toth's Doctoral dissertation, Using Career Profiles to Differentiate Between Occupations and Predict Job Satisfaction, 1998, Dr. Toth used the data from the Career Direct normative sample of working adults to investigate the person-job fit within occupational groups and differential occupational activity.

The research indicated that patterns of personality traits, vocational interests, and skills (abilities) influence preferences for particular occupations in Holland's occupational typology. Descriptive discriminant analysis combined the four domains of personality, interests, skills, and work values into one analysis to test the significance of the four aspects together in accounting for individual's preferences for different occupations. The results indicated that vocational interests, personality characteristics, and skills are significantly related to occupational preference and need to be incorporated into the assessment process to guide occupational choice. The investigation of predicting vocational choice with these multiple simultaneous predictors had not been evaluated prior to this study.

Multiple regression analysis was used to investigate whether those variables that differentiate between occupations also contribute to job satisfaction based on satisfaction data collected at the same time as the ***Career Direct*** normative data. The results indicated that work values, while not contributing to occupational differentiation, did significantly contribute to satisfaction with one's job.

This comprehensive study of data from working adults concluded that in order to help persons improve the probability of making a satisfying career choice and to identify stable career paths, one should include all four domains of vocational interests, personality characteristics, skills/abilities, and work values.

CROSS-CULTURAL AND LANGUAGE TRANSLATION VALIDATION

In the first language translation and first international version of Career Direct, Strydom and Noble, (Strydom & Noble, 2010), reported on the statistical validation of the Career Direct Global Edition language translation into Afrikaans.

In this study, the ***Career Direct*®** items, dimension/factor names, and feedback reports text were translated from American English to Afrikaans and inserted in the updated software programmed by the Crown South Africa office for use in the international CD-ROM version of ***Career Direct.*** Prior to release for use, new translation responses must be validated against the original validated English version to demonstrate the accuracy of a translation which measures significantly correlated dimensions. In order to validate the translation, the Afrikaans version must significantly correlate at the factor level to the original American English version in order to statistically demonstrate that the new translation measures the same career dimensions as the original.

After refinement and field-testing, a group of 100 bi-lingual adults and students, 68% home language Afrikaans, completed both English and Afrikaans versions on the same day. Most completed their home language version first, then immediately completed the other language version.

Uncharacteristically high correlations across all dimensions (95% above 0.90) led to a request for a second smaller testing group (23 Ss) in which the test was taken in the opposite language first, resulting in a broader range of correlation coefficients.

Pearson Correlation one-tailed analyses were performed on the standardized (z-score) scores for factors and subfactors for Personality, Interests, and Skills data comparing each individual's factor scores in the English and Afrikaans versions for each dimension. This procedure was based on the test-retest analysis format originally used in reliability testing over various time intervals for the English version.

Correlations of the three value sections priority ratings were also performed using the Spearman Rank-order correlation analysis. Subsequent analyses were performed on two sub-groups of subjects composed of home language English subjects (10 Ss) and home language Afrikaans subjects (13 Ss).

The combined smaller group (23 Ss) correlations were significant at the .01 significance level on all factors and subfactors for the full group. The correlation coefficients between the English and Afrikaans versions of the ***Career Direct*** Personality factors and subfactors ranged from .97 to .52 and are presented in Table 25. The Interests and Skills Factors were also significant as presented in Table 26.

English and Afrikaans home language subjects were divided into separate sub-groups and correlations between the English and Afrikaans versions were computed separately for the English home language group and the Afrikaans home language group.

The English home language group correlations produced higher level significance in almost all factors except two subfactors significant at the .05 level and one non-significant school subject: Personality subfactors, Independent, Blunt were significant at the .05 level. Occupation subfactors, Animal Care, Business Leaders were significant at the .05 level. Among school subjects, Agriculture was non-significant. The Afrikaans home language group had one non-significant factor and several non-significant subfac-

tors, all in the Personality section: Personality factor non-significant: Conscientiousness (*r* correlation =0.35). Sub-factors, non-significant: Ambitious (*r* =0.40, Adventure subfactor2), Organized (*r* = 0.44, Conscientiousness subfactor2), Independent (*r* = 0.44, Dominance subfactor2) and Blunt (*r* =0.20, Dominance subfactor3).

Other weaker factors but still significant at the .05 level were: Interests/Activities - Civil Design (*r* =0.56), Interests/Subjects - Technological Studies (*r* =.55), and Skills - Organizing (*r* =0.53).
Items composing the *non-significant* factors and subfactors were further analyzed to determine the individual words or phrases for which responses were least similar in English versus Afrikaans as demonstrated by the scores of the home language Afrikaans participants.

Although the overall correlation coefficients were all significant for the full sample group of 23 subjects, several weak components were noted in the Afrikaans home language group. The Personality main factor of Conscientiousness which was not significantly correlated between the English and Afrikaans version for the Afrikaans home language is of greatest concern. Also of concern was one subfactor of the Conscientiousness factor, 'Organized'; 'Independent' and 'Blunt,' subfactors of the Dominance factor; and 'Ambitious,' subfactor of Adventurousness, which were all non-significantly correlated between the English and Afrikaans versions completed by the Afrikaans home language group. The subfactor 'Precise' of the Conscientiousness factor was weaker as well with the significant, but lower at the .05 level, which probably contributed to the non-significance of the full factor, Consciousness.

Since the personality subfactor scores determine the individual's key strengths and non-strengths descriptions in the personality section of the feedback report, accuracy of the item translation from English to Afrikaans in this area is particularly critical.

The only non-significant section for the English home language group was the Agriculture subject, a part of the Interest factor Outdoors/Agriculture. In English this refers to school subjects or courses in agriculture, farming, gardening, etc. Another title for this subject in Afrikaans is needed.

A number of items had the very low correlations within the non-significant subfactors above. These items have subsequently been examined to determine the words or phrases in Afrikaans which are more similar to definitions of the English words and have been substituted to replace the current Afrikaans words. The Afrikaans version is now being reexamined for a possible second edition.

Additional languages in various stages of translation and validation are Russian (Ukraine), Croatian (Croatia), British English (United Kingdom), Spanish (South America), and Dutch (The Netherlands). The Global Career Direct online edition is already programmed to accommodate new languages as they are prepared for Career Direct translation and subsequent validation. Trained consultants in approved countries will soon offer ***Career Direct*** around the globe.

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TABLES

Table 1: Coefficient alphas for the CDPI Personality Factors and Subfactors (n=4463)

Personality Factor	Number of Items	Coefficient Alpha
Adventurous	13	.89
Compassion	18	.90
Conscientious	22	.91
Dominance	14	.88
Extroversion	19	.93
Innovative	12	.86
Stress	19	.94
Personality Subfactor		
Adv1: Daring	8	.90
Adv2: Ambitious	5	.76
Comp1: Sympathetic	7	.86
Comp2: Supportive	7	.79
Comp3: Tolerant	5	.76
Cons1: Precise	9	.88
Cons2: Organized	9	.86
Cons3: Achieving	6	.73
Dom1: Assertive	7	.87
Dom2: Independent	4	.77
Dome3: Blunt	3	.82
Ext1: Enthusiastic	6	.83
Ext2: Social	7	.90
Ext3: Verbal	7	.87
Inn1: Imaginative	7	.86
Inn2: Clever	6	.77
Str1: Tense	13	.92
Str2: Bitter	7	.88

Table 2: Test-Retest correlations for the CDPI Personality factors and subfactors over four time intervals

Personality Factor	1 week (n=100)	3-6 weeks (n=166)	6 months (n=75)	One year (n=50)
Adventurous	0.90	0.87	0.83	0.84
Compassion	0.89	0.87	0.86	0.80
Conscientious	0.91	0.90	0.83	0.85
Dominance	0.94	0.89	0.86	0.86
Extroversion	0.95	0.89	0.84	0.82
Innovative	0.92	0.86	0.81	0.86
Stress	0.86	0.85	0.81	0.81
Personality Subfactor				
Adv1: Daring		0.85	0.82	0.78
Adv2: Ambitious		0.87	0.80	0.85
Comp1: Sympathetic		0.87	0.85	0.79
Comp2: Supportive		0.82	0.81	0.75
Comp3: Tolerant		0.79	0.76	0.58
Cons1: Precise		0.89	0.87	0.87
Cons2: Organized		0.87	0.79	0.78
Cons3: Achieving		0.80	0.68	0.83
Dom1: Assertive		0.89	0.85	0.85
Dom2: Independent		0.75	0.77	0.67
Dome3: Blunt		0.83	0.73	0.80
Ext1: Enthusiastic		0.87	0.85	0.70
Ext2: Social		0.90	0.83	0.76
Ext3: Verbal		0.65	0.60	0.87
Inn1: Imaginative		0.84	0.83	0.84
Inn2: Clever		0.83	0.77	0.80
Str1: Tense		0.85	0.79	0.83
Str2: Bitter		0.80	0.77	0.72

Note. All correlations are significant ($p<.001$).

Table 3: Correlations of *Career Direct* General Interest Scales with CDPI

	Adventurous	Compassionate	Conscientious
Male (n=559)	.411 Mgmt/Sales .319 Adventure .287 Security .281 Law & Politics	.360 Counseling .348 Education .276 Religious .264 Performing/Comm	.310 Computational/Financial
Female (n=405)	.406 Adventure .367 Law & Politics .352 Mgmt/Sales .320 Security .253 Athletic .251 Outdoors/Agriculture		

	Dominance	Extroversion	Innovation
Male (n=559)	.336 Mgmt/Sales .273 Law & Politics	.392 Performing/Comm .363 Mgmt/Sales .319 Counseling .308 Law & Politics .264 Religious .255 Education	.414 Artistic .277 Writing .266 Performing/Comm
Female (n=405)	.358 Mgmt/Sales	.397 Performing/Comm .321 Law & Politics .314 Mgmt/Sales .303 Counseling .285 Writing	.483 Artistic .348 Writing .309 Performing/Comm. .262 Technological

Note. Correlations .250 and above are presented.

Table 4: Correlations ISVI General Interests vs. CDPI Personality Factors (n=896)

General Interests	Extrov.	Conscien.	Compass.	Advent.	Domin.	Innov.	Stress
Mechanical	-0.167	0.043	-0.15	0.17	0.063	0.168	0.059
Management/ Sales	0.232	0.136	0	0.32	0.351	0.17	-0.144
Performing/ Comm	0.303	-0.058	0.179	0.153	0.114	0.313	0.011
Food/ Consumer Sci.	0.101	-0.006	0.256	-0.143	-0.086	0.017	0.044
Service	-0.063	0.095	0.108	-0.15	-0.085	-0.113	0.028
Transportation	-0.07	-0.105	-0.073	0.085	-0.005	0.026	0.083
Outdoors/ Agriculture	-0.143	0.034	-0.016	0.062	-0.035	0.099	0.1
Health/ Science	-0.039	0.12	0.097	0.087	0.023	0.14	0.041
Computational/Financial	-0.174	0.282	-0.087	0.038	0.082	0.038	-0.031
Athletic	0.182	-0.02	-0.005	0.379	0.127	0.028	-0.108
Counseling	0.178	0.043	0.359	-0.055	0.062	0.003	0.023
Writing	0.141	-0.012	0.112	0.038	0.079	0.292	0.024
International	0.093	0.046	0.137	0.047	0.053	0.126	-0.008
Religious	0.058	0.139	0.212	-0.019	0.031	0.036	-0.059
Artistic	0.064	-0.051	0.139	0.035	-0.034	0.41	0.08
Security	0.108	-0.116	-0.113	0.361	0.177	0.122	-0.018
Technological	-0.121	0.064	-0.146	0.232	0.105	0.258	0.004
Law & Politics	0.189	0.011	-0.019	0.219	0.273	0.169	-0.051
Adventure	0.06	-0.093	-0.133	0.445	0.177	0.189	-0.02
Animals	0.007	-0.048	0.073	0.075	-0.039	0.083	0.062
Education	0.135	0.099	0.171	0.009	0.101	0.066	-0.065

Table 5: Financial Management factors of the CDPI

Financial Management (α=.84)
(all items reverse scored so that high scores indicate financial mismanagement)

119 I save money regularly.
120 My financial planning has been realistic.
124 I pay my bills on time.
129 I live on a written budget.
130 I invest money regularly.

Indebtedness (α=.70)

117 I spend more than I make.
118 I live above my financial means.
121 I lose track of where my money goes.
122 I am willing to pay interest on credit cards to get what I want.
123 I have many financial debts.
125 I am an impulsive buyer.
126 I borrow money for normal operating expenses.
127 I buy things I don't really need.
128 I have bounced a number of checks.

Table 6: ISVI—General Interest Scales and Factor Cronbach Alpha

1: Mechanical (α=.87)

act1	Electronics/Machines act.
s18	Vocational shop classes
act4	Hand Construction act.

2: Management/Sales (α=.89)

act32	Management act.
occ11	Management occ.
s03	Business & Mgmt classes
act10	Sales communication act.
act33	Self-employment act.
occ22	*Business Leaders*

3: Performing/Communication (α=.88)

act15	Entertainment act.
act14	Musical act.
occ8	Performers occ.
s11	Music classes
s13	Public performing classes
act7	Comm. large group act.

4: Consumer Science (α=.84)

s09	Home econ/domestic classes
occ5	Home economics
act30	Food
occ4	Fashion
act16	Styling

5: Service (α=.84)

occ6	Customer Service occ.
act11	Customer Service act.
so4	Clerical
act35	Business Clerical act.
act12	Hotel/Restaurant Service
act2	Factory/Assembly act.

6: Transportation Services (α=.93)

occ19	Drivers
act5	Transportation

7: Outdoors/Agriculture (α=.90)

act25	Research Nature act.
act24	Farming/Ranching act.
s01	Agriculture classes
occ2	Professional Outdoors occ.
act36	Landscaping Act.

8: Science & Health (α=.88)

act17	Research Medical act.
occ16	Medical occ.
act18	Provide medical care act.
act19	Health service/support act.
occ7	Science occ.
s15	Science classes
act20	Science Research act.

9: Computational/Financial (α=.88)

act22	Math act.
s10	Math classes
occ17	Financial/mathematical occ.
act21	Financial act.
s07	Finance classes

10: Athletic (α=.91)

s12	PE/Training
act28	Athletic act.
occ20	Athletic occ.

11: Counseling (α=.89)

occ14	Counselors occ.
act27	Counseling act.

12: Writing (α=.87)

s06	English classes
act8	Writing comm. act
occ10	Reporters/Writers occ.

13: International (α=.86)

s08	Foreign language classes
act34	International act.
occ18	Languages occ.

14: Religious (α=.82)

s14	Religion classes
act29	Religious act.

15: Artistic (α=.88)

act13	Artistic act.
s02	Art classes
occ9	Artists occ.

16: Security (α=.90)

act31	Security act.
occ12	Security occ.

17: Technological (α=.86)

act6	Civil Design act.
s17	Technological studies
occ1	Skilled/Technical occ

18: Law & Politics (α=.88)

act9	Political Comm. act.
occ13	Law & Politics occ.

19: Adventure (α=.86)

act3	Risky/Transportation act.
occ3	Adventure occ.

20: Animals (α=.92)

act23	Animal act.
occ15	Animal occ.

21: Education (α=.86)

act26	Educational activities
occ21	Education occ.
s05	Education classes

Table 7: Coefficient alphas for the ISVI General Interests

General Interest	Number of Scales	Coefficient Alpha
Mechanical	3	.87
Management/Sales	6	.89
Performing/Communication	6	.88
Consumer Science	5	.84
Service	6	.84
Transportation	2	.93
Outdoors/Agriculture	5	.90
Science & Health	7	.88
Computational/Financial	5	.88
Athletic	3	.91
Counseling	2	.89
Writing	3	.87
International	3	.86
Religious	2	.82
Artistic	3	.88
Security	2	.90
Technological	3	.86
Law & Politics	2	.88
Adventure	2	.86
Animal Care	2	.92
Education	3	.86

Table 8: Coefficient alphas for the ISVI Activity, Occupational, and Skill Factors

Activity	Number of Items	Coefficient Alpha
Electronics/Machines	8	.93
Factory/Assembly	5	.86
Risky	5	.84
Hand Construction	4	.86
Transportation	6	.86
Civil Design	3	.84
Communication Large Groups	6	.90
Writing Communication	7	.88
Political Communication	5	.86
Sales Communication	5	.82
Customer Service	6	.81
Hotel/Restaurant Service	5	.78
Artistic	8	.86
Musical	5	.86
Entertainment	4	.83
Styling	4	.86
Research Medical	4	.80
Provide Medical Care	6	.83
Health Service/Support	5	.84
Science Research	7	.82
Financial	5	.85
Math	3	.89
Animal Care	4	.86
Farming	5	.86
Research Nature	4	.79
Education	6	.86
Counseling	6	.86
Athletic	8	.92
Religious	6	.85
Food	5	.87
Security	7	.88
Management	7	.89
Self-employment	2	.86
International	5	.79
Clerical	7	.84
Landscaping	4	.84

Table 8 (cont.): Coefficient alphas for the ISVI Activity, Occupational, and Skill Factors

Occupation	Number of Items	Coefficient Alpha
Skilled/Technical	7	.90
Professional Outdoors	6	.87
Adventure	5	.82
Fashion	7	.88
Home Economics	5	.79
Customer Service	6	.88
Science	5	.87
Performers	6	.83
Artists	7	.87
Reporters/Writers	5	.83
Sales & Management	8	.84
Security	5	.82
Law & Politics	5	.86
Counseling	3	.79
Animal Care	3	.84
Medical	8	.88
Financial/Mathematics	6	.81
Languages	2	.81
Drivers	4	.86
Athletic	3	.88
Education	3	.76
Business Leaders	4	.87

Skill	Number of Items	Coefficient Alpha
Managing	7	.86
Interpersonal	9	.87
Working with Others	5	.84
Mechanical	5	.90
Analytical	7	.88
Musical	3	.81
Athletic	3	.83
Organizing	6	.85
Marketing	4	.86
Artistic	4	.80
Cross-cultural	4	.81
Clerical	5	.84
Writing	3	.84
Math	4	.70

Table 9: Demographics -Personality Inventory Sample IV
(N=1082)

Sex

Male = 625 (57.8%)
Female = 457 (42.2%)

Age

21-25 = 32 (3.0%)
26-30 = 93 (8.6%)
31-35 = 196 (18.2%)
36-40 = 206 (19.1 %)
41-45 = 222 (20.6%)
46-50 = 152 (14.1 %)
51-55 = 95 (8.8%)
56-60 = 54 (5.0%)
61-65 = 15 (1.4%)
66-70 = 9 (0.8%)
72-74 = 5 (.5%)

Highest Level of Education

7th-9th	=	6 (0.6%)
10th	=	3 (0.3%)
11th	=	6 (0.6%)
12th	=	135 (12.5%)
GED	=	15 (1.4%)
College l yr	=	70 (6.5%)
College 2 yrs	=	75 (6.9%)
College 3 yrs	=	52 (4.8%)
College 4 yrs	=	53 (4.9%)
Apprenticeship	=	10 (0.9%)
Technical School	=	64 (5.9%)
Associate's Dgr	=	66 (6.1 %)
Bachelor's Dgr	=	315 (29.2%)
Master's Dgr	=	161 (14.9%)
Doctorate	=	38 (3.5%)
JD	=	11 (1.0%)

Ethnic Status

White	=	1018 (94.4%)
African American	=	23 (2.1 %)
American Indian	=	2 (0.2%)
Asian	=	12 (1.1%)
Hispanic	=	17 (1.6%)
Other	=	6 (0.6%)
Missing	=	4

Employment Status

Full-time	=	869 (83.2%)
Part-time	=	118 (11.3%)
Unemployed	=	13 (1.2%)
Retired	=	20 (1.9%)
Homemaker	=	25 (2.4%)

Marital Status

Single	=	78 (7.2%)
Married	=	902 (83.6%)
Divorced	=	83 (7.7%)
Separated	=	5 (0.5%)
Widowed	=	11 (1.0%)

Satisfaction With Job

Very Satisfied	=	255 (25.0%)
Satisfied	=	531 (52.1%)
Neither Satisfied nor Dissatisfied	=	153 (15.0%)
Dissatisfied	=	68 (6.7%)
Very Dissatisfied	=	13 (1.3%)

Number of Children

0 = 193 (18.3%), 1 = 135 (12.8%), 2 = 336 (31.8%), 3 = 210 (19.9%), 4+ = 180 (17.1%)

If married do both partners work outside of the home? Yes =542(59.3%), No =366 (40.0%)

Table 10: Test-Retest correlations for the ISVI General Interests Factors

General Interest Factors	3-6 weeks n=166	6 months n=75	One year n=50
Mechanical	0.93	0.92	0.91
Management/Sales	0.91	0.89	0.89
Performing/Communication	0.89	0.91	0.85
Consumer Science	0.86	0.82	0.87
Service	0.90	0.86	0.83
Transportation	0.86	0.82	0.91
Outdoors/Agriculture	0.91	0.87	0.88
Science & Health	0.89	0.89	0.86
Computational/Financial	0.92	0.92	0.92
Athletic	0.90	0.89	0.85
Counseling	0.86	0.89	0.82
Writing	0.86	0.88	0.89
International	0.81	0.79	0.78
Religious	0.83	0.79	0.68
Artistic	0.89	0.89	0.89
Security	0.89	0.85	0.92
Technological	0.88	0.90	0.92
Law & Politics	0.91	0.89	0.89
Adventure	0.92	0.93	0.89
Animal Care	0.89	0.87	0.86
Education	0.85	0.86	0.78

Note. All correlations are significant ($p<.001$).

Table 11a: Test-retest correlations for the ISVI Activity Factors

Activity Factors	3-6 weeks n=166	6 months n=75	One year n=50
Electronics/Machines	0.93	0.91	0.91
Factory/Assembly	0.87	0.72	0.77
Risky	0.93	0.85	0.91
Hand Construction	0.89	0.86	0.84
Transportation	0.88	0.82	0.91
Civil Design	0.88	0.75	0.88
Communication Large Groups	0.93	0.93	0.84
Writing Communication	0.89	0.86	0.86
Political Communication	0.89	0.85	0.86
Sales Communication	0.86	0.87	0.74
Customer Service	0.83	0.87	0.67
Hotel/Restaurant Service	0.85	0.76	0.74
Artistic	0.89	0.86	0.86
Musical	0.88	0.89	0.79
Entertainment	0.85	0.83	0.85
Styling	0.84	0.77	0.83
Research Medical	0.87	0.77	0.89
Provide Medical Care	0.89	0.85	0.76
Health Service/Support	0.83	0.82	0.74
Science Research	0.85	0.74	0.76
Financial	0.88	0.9	0.89
Math	0.92	0.86	0.92
Animal Care	0.89	0.83	0.83
Farming	0.88	0.79	0.87
Research Nature	0.87	0.85	0.81
Education	0.89	0.84	0.77
Counseling	0.87	0.86	0.76
Athletic	0.94	0.89	0.91
Religious	0.84	0.82	0.6
Food	0.86	0.8	0.79
Security	0.9	0.85	0.88
Management	0.9	0.84	0.88
Self-employment	0.87	0.81	0.73
International	0.85	0.74	0.79
Clerical	0.89	0.86	0.79
Landscaping	0.84	0.8	0.84

Note. All correlations are significant ($p<.010$).

Table 11b: Test-retest correlations for the ISVI Occupational Factors

Occupation Factors	3-6 weeks n=166	6 months n=75	One year n=50
Skilled/Technical	0.92	0.91	0.93
Professional Outdoors	0.89	0.85	0.85
Adventure	0.91	0.95	0.78
Fashion	0.88	0.86	0.81
Home Economics	0.84	0.79	0.74
Customer Service	0.85	0.9	0.81
Science	0.9	0.9	0.78
Performers	0.87	0.87	0.84
Artists	0.91	0.87	0.85
Reporters/Writers	0.87	0.88	0.84
Sales & Management	0.85	0.81	0.77
Security	0.89	0.78	0.89
Law & Politics	0.91	0.84	0.88
Counseling	0.85	0.88	0.79
Animal Care	0.88	0.81	0.81
Medical	0.89	0.87	0.84
Financial/Mathematics	0.89	0.9	0.82
Languages	0.8	0.74	0.75
Drivers	0.87	0.76	0.86
Athletic	0.92	0.9	0.8
Education	0.88	0.83	0.75
Business Leaders	0.88	0.89	0.82

Table 11c: Test-retest correlations for the ISVI Skill Factors

Skills Factors	3-6 weeks n=166	6 months n=75	One year n=50
Managing	0.84	0.85	0.78
Interpersonal	0.86	0.88	0.82
Working with Others	0.83	0.83	0.73
Mechanical	0.91	0.92	0.87
Analytical	0.85	0.85	0.83
Musical	0.94	0.91	0.83
Athletic	0.86	0.85	0.78
Organizing	0.86	0.76	0.71
Marketing	0.89	0.86	0.83
Artistic	0.89	0.86	0.81
Cross-cultural	0.88	0.83	0.84
Clerical	0.92	0.86	0.84
Writing	0.9	0.88	0.8
Math	0.84	0.86	0.85

Table 12: Correlations between Social Desirability, NEO, and CDPI Sample III (N=50l)

	Social Desire	NEO Agree	NEO Conscien.	NEO Extravert	NEO Neurotic	NEO Open
Social Desirability	1.00					
CPPI: Extroversion	.19	.14	-.05	**.82**	-.26	.29
Conscientious	.07	-.06	.**78**	-.07	-.20	-.26
Stress	-.32	-.36	-.31	-.32	**.81**	.03
Compassion	.30	**.57**	-.03	.34	-.18	.33
Adventurous.	.12	-.08	.31	**.51**	-.31	.10
Dominance	.07	-.25	**.36**	**.34**	-.31	-.05
Innovative	.13	-.02	.11	.30	-.17	**.47**

Bold – Highly and Moderately Significant $p < .0001$

Table 13: Correlations between Hogan Inventory and Personality Inventory Version III (N = 501)

	CPPI Extro.	CPPI Consc.	CPPI Stress	CPPI Com.	CPPI Adven.	CPPI Dom.	CPPI Innov.
Hogan:							
Adjustment	.19	.06	**-.74**	.24	.15	.09	.12
Ambition	**.52**	.22	-.58	.10	**.55**	**.54**	.32
Sociability	**.63**	-.20	-.09	.09	.39	.20	.33
Likability	.58	-.15	-.41	**.61**	.19	.03	.19
Prudence	-.13	**.44**	-.23	.12	-.07	-.08	-.08
Intellectance	.21	.02	-.14	.06	.34	.19	**.55**
School Success	.04	.13	-.19	-.03	.09	.16	.22
Occupational Scales:							
Service Orientation	.26	-.06	-.49	**.54**	.08	-.06	.15
Stress Tolerance	.17	.16	**-.77**	.12	.19	.20	.13
Reliability	-.10	.14	-.37	.15	-.17	-.21	-.12
Clerical Potential	.43	.08	-.61	.18	.37	.38	-.25
Sales Potential	**.73**	-.17	-.31	.24	**.50**	.31	**.45**
Managerial Potential	.32	.34	**-.55**	.05	**.45**	.42	.24
Validity (Carelessness)	.08	.24	-.26	.17	.19	.13	.12

Bold – Highly and Moderately Significant $p < .0001$

Table 14: Correlations between Hogan Personality and NEO Personality Inventories (N = 501)

Hogan Scales	NEO Scales Agreeableness	Conscientiousness	Extraversion	Openness	Neuroticism
Adjustment	.41	.31	.26	-.01	-.82
Ambition	.06	.39	.63	.08	-.64
Sociability	-.10	-.15	.68	.39	-.10
Likability	.48	.04	.60	.31	-.3S
Prudence	.38	.53	-.05	-.18	-.30
Intellectance	-.05	.04	.22	.47	-.19
School Success	-.02	.18	.09	.17	-.21

Bold – significant correlations

Table 15: Correlations of ISVI General Interest Scales with the Strong General Occupational Themes

	Realistic	Investigative	Artistic
Male (n=565)	.814 Mechanical .789 Technological .563 Outdoors/Agriculture .545 Adventure .451 Health/Science	.769 Health/Science .494 Technological	.756 Artistic .707 Performing/Comm. .628 Writing
Female (n=410)	.797 Mechanical .753 Technological .685 Outdoors/Agriculture .588 Adventure .493 Transportation	.751 Health/Science .546 Technological .503 Adventure .490 Outdoors/Agriculture .456 International	.779 Artistic .718 Performing/Comm. .660 Writing .506 International

	Social	Enterprising	Conventional
Male (n=565)	.712 Counseling .703 Education .537 Religious .504 Management/Sales .492 Law & Politics .468 Performing/Comm.	.744 Management/Sales .487 Law & Politics	.727 Computational/Financial .636 Service
Female (n=410)	.677 Education .620 Counseling	.715 Management/Sales .516 Law & Politics	.717 Computational/Financial .629 Service .475 Management/Sales

Note. For each General Interest factor, the five highest correlations .450 and above are presented.

All correlations are significant (p=.001).

Table 15b: Correlations of ISVI General Interest Scales with the Strong General Occupational Themes

Males (n=565)

	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
1. Mechanical	**.81**	.36	.08	-.03	.03	.17
2. Management/ Sales	.05	.19	.20	**.50**	**.74**	.40
3. Performing/ Communication	-.03	.28	**.71**	**.47**	.32	.14
4. Food/ Consumer Science	.24	.24	.39	.38	.33	.26
5. Service	.21	.14	.14	.33	.38	**.64**
6. Transportation	.34	.08	.06	.19	.27	.31
7. Outdoors/ Agriculture	**.56**	.29	.19	.22	.21	.06
8. Health/Science	**.45**	**.77**	.37	.36	.21	.29
9. Computational/ Financial	.18	.40	-.02	.18	.32	**.73**
10. Athletic	.09	.11	.13	.43	.26	.10
11. Counseling	-.05	.28	.34	**.71**	.43	.20
12. Writing	-.09	.28	**.63**	.41	.28	.18
13. International	.04	.35	.41	.33	.22	.15
14. Religious	-.02	.19	.35	**.54**	.21	.10
15. Artistic	.32	.38	**.76**	.23	.13	.05
16. Security	.29	.14	.03	.32	.26	.14
17. Technological	**.79**	**.49**	.15	-.01	.09	.27
18. Law & Politics	-.04	.28	.31	**.49**	**.49**	.23
19. Adventure	**.54**	.36	.16	.19	.19	.06
20. Animals	**.**43	.34	.27	.29	.19	.06
21. Education	-.07	.35	.35	**.70**	.30	.27

Note: **Bold** correlations above .45 are significant (p=.001).

Note. Correlations > ± .12 are significant ($p < .01$). Correlations > ± .09 are significant ($p < .05$).

Table 15b (continued): Correlations of ISVI General Interest Scales with the Strong General Occupational Themes

Females (n=410)

	Realistic	Investigative	Artistic	Social	Enterprising	Conventional
1. Mechanical	**.80**	.44	.22	.03	.09	.24
2. Management/ Sales	.15	.23	.19	.41	**.72**	**.47**
3. Performing/ Communication	.18	.34	**.72**	.39	.29	-.08
4. Food/ Consumer Science	.20	.10	.34	.29	.27	.13
5. Service	.15	.00	-.10	.16	.25	**.63**
6. Transportation	**.49**	.22	.13	.13	.26	.25
7. Outdoors/ Agriculture	**.69**	**.49**	.35	.15	.06	.08
8. Health/Science	**.45**	**.75**	.26	.29	.12	.23
9. Computational/ Financial	.27	.41	-.09	.13	.22	**.72**
10. Athletic	.28	.27	.21	.39	.12	.03
11. Counseling	.04	.31	.32	**.62**	.36	.15
12. Writing	.17	.38	**.66**	.42	.30	.00
13. International	.29	**.46**	**.51**	.39	.21	.06
14. Religious	.07	.16	.27	.41	.20	.08
15. Artistic	.39	.38	**.78**	.22	.15	-.09
16. Security	.39	.32	.12	.24	.33	.22
17. Technological	**.75**	**.55**	.32	.05	.19	.26
18. Law & Politics	.19	.39	.30	.41	**.52**	.21
19. Adventure	**.59**	**.50**	.32	.21	.28	.15
20. Animals	.40	.36	.29	.14	-.01	-.09
21. Education	.05	.31	.31	**.68**	.14	.11

Note: **Bold** correlations above .45 are significant (p=.001).

Note. Correlations > ± .12 are significant ($p < .01$). Correlations > ± .09 are significant ($p < .05$).

Table 16: Correlations of ISVI General Interest Scales with the Strong Basic Interest Scales

	G01: Mechanical	G02: Mgmt/Sales	G03: Performing/ Communication	G04: Food/ Consumer Science	G05: Service
Male (n= 565)	.88 Mechanical/ Activities .50 Science	.78 Business Management .72 Merchandising .67 Sales .58 Public Speaking .53 Law/Politics	.78 Music/ Dramatics .64 Public Speaking .58 Writing .52 Art	.71 Domestic Arts	.73 Office Practices
Female (n= 410)	.86 Mechanical Activities .52 Nature .47 Agriculture .46 Science	.79 Business Management .72 Merchandising .61 Sales .55 Public Speaking .49 Law/Politics	.81 Music/ Dramatics .59 Public Speaking .54 Art .50 Writing	.72 Domestic Arts	.80 Office Practices

	G06: Transportation	G07:Outdoors/ Agriculture	G08: Health/Science	G09: Computational/ Financial	G10: Athletic
Male (n=565)		.80 Nature .70 Agriculture	.77 Medical Science .73 Science .68 Medical Service .45 Nature	.75 Math .52 Office Practices	.84 Athletics
Female (n=410)		.81 Nature .75 Agriculture .56 Mechanical Activities .48 Science	.82 Medical Science .76 Science .74 Medical Service .46 Nature	.74 Math .49 Office Practices	.83Athletics .45Adventure

Note. For each General Interest factor, the five highest correlations .450 and above are presented.

All correlations are significant (p=.001).

Table 16: Correlations of ISVI General Interest Scales with the Strong Basic Interest Scales

	G01: Mechanical	G02: Mgmt/Sales	G03: Performing/ Communication	G04: Food/ Consumer Science	G05: Service
Male (n= 565)	.88 Mechanical/ Activities .50 Science	.78 Business Management .72 Merchandising .67 Sales .58 Public Speaking .53 Law/Politics	.78 Music/ Dramatics .64 Public Speaking .58 Writing .52 Art	.71 Domestic Arts	.73 Office Practices
Female (n= 410)	.86 Mechanical Activities .52 Nature .47 Agriculture .46 Science	.79 Business Management .72 Merchandising .61 Sales .55 Public Speaking .49 Law/Politics	.81 Music/ Dramatics .59 Public Speaking .54 Art .50 Writing	.72 Domestic Arts	.80 Office Practices

	G06: Transportation	G07:Outdoors/ Agriculture	G08: Health/Science	G09: Computational/ Financial	G10: Athletic
Male (n=565)		.80 Nature .70 Agriculture	.77 Medical Science .73 Science .68 Medical Service .45 Nature	.75 Math .52 Office Practices	.84 Athletics
Female (n=410)		.81 Nature .75 Agriculture .56 Mechanical Activities .48 Science	.82 Medical Science .76 Science .74 Medical Service .46 Nature	.74 Math .49 Office Practices	.83Athletics .45Adventure

Note. For each General Interest factor, the five highest correlations .450 and above are presented.

All correlations are significant (p=.001).

Table 16 (Continued): Correlations of ISVI General Interest Scales with Strong BIS

	G11: Counseling	G12: Writing	G13: International	G14: Religious	G15: Artistic
Male (n=565)	.75 Social Service .56 Public Speaking .54 Teaching .51 Religious Activities .48 Business Management	.83 Writing .59 Public Speaking .50 Music/ Dramatics .45 Law/Politics .45 Teaching	.47 Writing	.79 Religious Activities .46 Public Speaking .45 Social Service	.79 Art .55 Music/Dramatics .50 Writing
Female (n=410)	.71 Social Service .46 Public Speaking	.85 Writing .55 Public Speaking .50 Music/ Dramatics .50 Art	.50 Writing .45 Music/ Dramatics	.72 Religious Activities	.82 Art .60 Music/Dramatics .52 Writing .49 Nature

	G16: Security	G17: Technological	G18: Law & Politics	G19: Adventure	G20: Animals
Male (n=565)	.51 Adventure	.83 Mechanical Activities .59 Science	.85 Law/Politics .80 Public Speaking .56 Business Management .49 Merchandising	.76 Adventure .54 Military Activities	.58 Nature .49 Medical Science .45 Medical Service
Female (n=410)	.55 Adventure	.80 Mechanical Activities .54 Science .48 Nature	.86 Law/Politics .79 Public Speaking .50 Business Management	.74 Adventure .58 Military Activities .47 Mechanical Activities .45 Science .45 Medical Science	.54 Nature .45 Agriculture

	G21: Education
Male (n=565)	.82 Teaching .56 Social Service .54 Public Speaking .45 Writing
Female (n=410)	.83 Teaching .55 Social Service .45 Writing

Table 16b: Correlations of ISVI General Interest Scales with the Strong Basic Interest Scales

Males (n=565)

	General Interests						
	G01: Mechanical	**G02: Mgmt/ Sales**	**G03: Performing /Comm**	**G04: Food/ Consumer Science**	**G05: Service**	**G06: Transportation**	**G07: Outdoors/ Agriculture**
Strong BIS							
Agriculture	.34	-.01	-.17	.16	-.01	.24	**.70**
Nature	.36	.03	.04	.38	.10	.20	**.80**
Adventure	.21	.27	.20	.07	-.09	.14	.21
Military	.18	.18	.17	.18	.20	.23	.18
Mechanical	**.88**	-.04	-.04	.17	.21	.25	.37
Science	**.50**	.00	.09	.15	.13	.07	.27
Math	.26	.15	.04	.05	.21	.06	.04
Medical Science	.18	.19	.26	.26	.08	.09	.35
Medical Service	.29	.11	.23	.36	.35	.30	.32
Music/Dramatics	.01	.21	**.78**	.34	.17	.09	.07
Art	.17	.10	**.52**	.44	.12	.05	.25
Writing	-.07	.26	**.58**	.26	.14	.02	.09
Teaching	-.09	.26	.40	.24	.24	.06	.04
Social Service	-.07	.43	.39	.38	.31	.20	.18
Athletics	-.01	.31	.16	.20	.13	.15	.23
Domestic Arts	.23	.20	.24	**.71**	.42	.26	.39
Religious	-.03	.27	.39	.19	.21	.10	.14
Public Speaking	-.21	**.58**	**.64**	.21	.16	.05	-.01
Law/Politics	-.16	**.53**	.39	.15	.11	.04	.01
Merchandising	-.02	**.72**	.38	.39	.42	.27	.17
Sales	-.05	**.67**	.23	.22	.28	.22	.09
Business Mgmt	-.05	**.78**	.36	.28	.40	.18	.09
Office Practices	.05	.24	.09	.26	**.73**	.39	.02

Note: **Bold** correlations above .45 are significant (p=.001).

Note. Correlations > ± .12 are significant ($p < .01$). Correlations > ± .09 are significant ($p < .05$).

General Interests							
	G08: Health/ Science	**G09: Comp/ Finan.**	**G10: Athletic**	**G11: Counseling**	**G12: Writing**	**G13: International**	**G14: Religious**
Strong BIS							
Agriculture	.12	-.13	.18	-.04	-.21	-.06	-.04
Nature	**.45**	-.04	.13	.09	.03	.16	.10
Adventure	.26	.03	.34	.06	.14	.22	.05
Military	.28	.13	.18	.13	.13	.20	.13
Mechanical	.44	.24	-.04	-.12	-.11	.01	-.07
Science	**.73**	.39	-.02	.04	.09	.24	.07
Math	.41	**.75**	.02	-.02	.03	.13	.00
Medical Science	**.77**	.14	.19	.28	.25	.33	.15
Medical Service	**.68**	.13	.21	.26	.15	.22	.15
Music/Dramatics	.30	.03	.11	.30	**.50**	.37	.32
Art	.33	-.06	.02	.22	.44	.31	.23
Writing	.28	.01	.10	.42	**.83**	**.47**	.37
Teaching	.31	.17	.21	**.54**	**.45**	.33	.38
Social Service	.25	.08	.30	**.75**	.35	.26	**.45**
Athletics	.12	.09	**.84**	.21	.12	.11	.14
Domestic Arts	.32	.16	.17	.22	.18	.21	.13
Religious	.24	.11	.24	**.51**	.31	.26	**.79**
Public Speaking	.21	.13	.25	**.56**	**.59**	.37	**.46**
Law/Politics	.23	.24	.22	**.45**	**.45**	.32	.28
Merchandising	.16	.29	.27	.44	.36	.26	.19
Sales	.02	.18	.19	.31	.19	.10	.14
Business Mgmt	.20	.40	.25	.48	.36	.27	.25
Office Practices	.14	**.52**	.02	.17	.14	.06	.06

Note: **Bold** correlations above .45 are significant (p=.001).

Note. Correlations > ± .12 are significant ($p < .01$). Correlations > ± .09 are significant ($p < .05$).

General Interests							
	G15: Artistic	**G16: Security**	**G17: Technological**	**G18: Law & Politics**	**G19: Adventure**	**G20: Animals**	**G21: Education**
Strong BIS							
Agriculture	.09	.23	.31	-.09	.30	.40	-.14
Nature	.38	.18	.36	.02	.29	**.58**	.06
Adventure	.21	**.51**	.26	.30	**.76**	.28	.05
Military	.11	.35	.22	.28	**.54**	.20	.20
Mechanical	.32	.18	**.83**	-.13	.39	.32	-.08
Science	.30	.10	**.59**	.05	.33	.30	.16
Math	.05	-.01	.41	.11	.15	.04	.11
Medical Science	.29	.21	.26	.28	.39	**.49**	.28
Medical Service	.23	.30	.28	.12	.35	**.45**	.21
Music/Dramatics	**.55**	.03	.05	.30	.12	.22	.33
Art	**.79**	.04	.26	.16	.13	.29	.20
Writing	**.50**	.02	.00	.43	.09	.14	**.45**
Teaching	.20	.10	-.05	.37	.05	.10	**.82**
Social Service	.23	.33	-.07	.43	.13	.24	**.56**
Athletics	.08	.25	.00	.24	.24	.25	.23
Domestic Arts	.35	.20	.23	.13	.18	.35	.24
Religious	.21	.13	-.04	.30	.07	.15	.43
Public Speaking	.21	.25	-.13	**.80**	.18	.09	**.54**
Law/Politics	.10	.32	-.04	**.85**	.23	.05	.43
Merchandising	.18	.17	.04	**.49**	.12	.18	.34
Sales	.04	.14	-.02	.38	.09	.09	.17
Business Mgmt	.10	.24	.05	**.56**	.15	.11	.44
Office Practices	-.03	.08	.08	.09	-.09	.03	.20

Note: **Bold** correlations above .45 are significant (p=.001).

Note. Correlations > ± .12 are significant ($p < .01$). Correlations > ± .09 are significant ($p < .05$).

Table 16b (Continued): Correlations of ISVI General Interest Scales with the Strong Basic Interest Scales

Females (n=410)

	General Interests						
	G01: Mechanical	**G02: Mgmt/ Sales**	**G03: Performing /Comm**	**G04: Food/ Consumer Science**	**G05: Service**	**G06: Transportation**	**G07: Outdoors/ Agriculture**
Strong BIS							
Agriculture	**.47**	-.07	.05	.19	.03	.30	**.75**
Nature	**.52**	.01	.21	.28	.03	.25	**.81**
Adventure	.32	.15	.37	.02	-.19	.35	.33
Military	.31	.15	.12	.05	.19	.41	.25
Mechanical	**.86**	.16	.14	.19	.19	.43	.56
Science	**.46**	.06	.17	.01	.03	.20	.48
Math	.26	.14	.04	.01	.19	.13	.23
Medical Science	.33	.09	.25	.11	.02	.20	.41
Medical Service	.26	-.06	.07	.25	.26	.25	.27
Music/Dramatics	.10	.16	**.81**	.27	-.13	.11	.21
Art	.26	.17	**.54**	.41	-.11	.09	.39
Writing	.09	.22	**.50**	.22	.02	.11	.22
Teaching	-.03	.09	.28	.20	.09	-.01	.13
Social Service	-.07	.36	.27	.28	.17	.09	.00
Athletics	.23	.11	.17	.16	.09	.27	.24
Domestic Arts	.12	.15	.08	**.72**	.34	.09	.25
Religious	.04	.24	.25	.25	.17	.08	.16
Public Speaking	.00	.55	**.59**	.06	-.07	.09	.02
Law/Politics	.04	**.49**	.32	-.03	.00	.13	.03
Merchandising	.12	**.72**	.31	.32	.23	.20	.04
Sales	.00	**.61**	.18	.22	.25	.19	-.04
Business Mgmt	.05	**.79**	.25	.17	.29	.16	-.04
Office Practices	.10	.28	-.17	.18	**.80**	.27	-.04

Note: **Bold** correlations above .45 are significant (p=.001).

Note. Correlations > ± .14 are significant ($p < .01$). Correlations > ± .10 are significant ($p < .05$).

	General Interests						
	G08: Health/ Science	**G09: Computational/ Financial**	**G10: Athletic**	**G11: Counseling**	**G12: Writing**	**G13: International**	**G14: Religious**
Strong BIS							
Agriculture	.27	.07	.29	-.06	.01	.16	.07
Nature	**.46**	.11	.24	.00	.21	.26	.13
Adventure	.32	.03	**.45**	.16	.29	.39	.06
Military	.32	.22	.28	.10	.12	.20	.12
Mechanical	.44	.29	.21	.01	.13	.22	.03
Science	**.76**	.39	.18	.08	.24	.33	.05
Math	.41	**.74**	.15	.02	.00	.17	.08
Medical Science	**.82**	.20	.27	.21	.24	.33	.08
Medical Service	**.74**	.10	.19	.20	.05	.14	.04
Music/Dramatics	.19	-.10	.21	.28	**.50**	**.45**	.28
Art	.20	-.11	.11	.23	**.50**	.37	.20
Writing	.24	-.03	.12	.39	**.85**	**.50**	.26
Teaching	.25	.10	.25	.35	.36	.36	.26
Social Service	.15	.07	.19	**.71**	.38	.29	.33
Athletics	.26	.13	**.83**	.15	.10	.21	.07
Domestic Arts	.12	.08	.08	.13	.12	.10	.24
Religious	.10	.07	.17	.34	.28	.25	**.72**
Public Speaking	.11	.08	.23	**.46**	**.55**	.41	.33
Law/Politics	.19	.28	.18	.39	.43	.34	.20
Merchandising	.05	.19	.09	.34	.33	.21	.15
Sales	.01	.12	.02	.25	.18	.07	.15
Business Mgmt	.06	.33	.09	.40	.28	.22	.19
Office Practices	.09	**.49**	-.05	.09	-.06	-.06	.05

Note: **Bold** correlations above .45 are significant (p=.001).

Note. Correlations > ± .14 are significant ($p < .01$). Correlations > ± .10 are significant ($p < .05$).

General Interests							
	G15: Artistic	**G16: Security**	**G17: Technological**	**G18: Law & Politics**	**G19: Adventure**	**G20: Animals**	**G21: Education**
Strong BIS							
Agriculture	.27	.18	.37	-.01	.36	**.45**	-.03
Nature	**.49**	.17	**.48**	.03	.38	**.54**	.12
Adventure	.29	**.55**	.39	.43	**.74**	.33	.04
Military	.04	.42	.33	.31	**.58**	.16	.08
Mechanical	.39	.31	**.80**	.12	**.47**	.33	.02
Science	.28	.27	**.54**	.21	**.45**	.40	.18
Math	.02	.10	.34	.14	.17	.07	.14
Medical Science	.24	.29	.37	.26	**.45**	.44	.21
Medical Service	.10	.30	.20	.02	.28	.31	.10
Music/Dramatics	**.60**	.09	.19	.26	.26	.24	.25
Art	**.82**	.07	.36	.15	.24	.30	.21
Writing	**.52**	.15	.16	.43	.25	.14	**.45**
Teaching	.15	.03	.01	.20	.07	.14	**.83**
Social Service	.16	.21	-.05	.37	.10	-.02	**.55**
Athletics	.10	.29	.21	.19	.38	.27	.23
Domestic Arts	.20	-.02	.06	-.06	-.01	.07	.30
Religious	.20	.04	.00	.19	.08	.09	.40
Public Speaking	.22	.28	.10	**.79**	.30	.04	.34
Law/Politics	.08	.42	.17	**.86**	.34	-.06	.28
Merchandising	.26	.24	.22	.44	.24	-.03	.16
Sales	.06	.20	.05	.35	.12	-.09	-.01
Business Mgmt	.07	.26	.14	**.50**	.20	-.09	.22
Office Practices	-.17	.16	.03	-.01	-.02	-.14	.06

Note: **Bold** correlations above .45 are significant (p=.001).
/
Note. Correlations > ± .14 are significant ($p < .01$). Correlations > ± .10 are significant ($p < .05$).

Table 17: Correlations of ISVI General Interests Scales with the Strong Occupational Scales

	G01: Mechanical	G02: Mgmt/Sales	G03: Performing/ Comm	G04: Food/ Cons. Sci	G05: Service
Male (n=599)	.767 Carpenter .694 Medical Technologist .688 Engineer .678 Electrician .668 Navy, enlisted	.799 Realtor .755 Life Ins. Agent .749 Store Manager .745 Purchasing Agent .715 Nursing Home Admin.	.730 Flight Attendant .677 Minister .635 English teacher .615 Public Admin. .543 Social Worker	.593 Dietitian .561 Chef .539 Food Serv.Mgr. .512 Flight Attendant	.609 Business ed. Teacher .593 Food service mgr. .504 Nurse, LPN .490 Credit Manager .473 Dietitian
Female (n=425)	.789 Electrician .732 Carpenter .702 Navy officer .675 Engineer .618 Architect	.781 Restaurant Manager .775 Purchasing Agent .734 Personnel Director .718 Travel Agent .706 Life Insurance Agent	.574 Broadcaster .526 Recreation Leader .520 Public Relations Dir. .491 Flight Attendant .484 Reporter	.598 Home Econ. Teacher .588 Chef	.741 Exec. Housekeeper .677 Business ed. Teacher .674 Credit Manager .670 Funeral director .648 Air Force enlisted

	G06: Transportation	G07: Outdoors/Agriculture	G08: Health/Science	G09: Computational/ Financial	G10: Athletic
Male (n=599)		.527 Horticultural Worker .525 Vocational Ag Teacher .487 Forester .462 Respiratory Therapist .451 Physical Therapist	.729 Nurse, RN .725 Respiratory Therapist .671 Medical Technologist .625 Medical Technician .618 Optometrist	.635 Accountant .568 Systems Analyst .532 Credit Manager .482 IRS Agent .454 Navy Officer	.626 PE Teacher .602 Recreation Leader .528 YMCA Leader
Female (n=425)	.491 Navy Officer .484 Navy Enlisted .481 Army Enlisted .459 Army Officer	.644 Forester .639 Chef .607 Electrician .586 Carpenter .571 Athletic Trainer	.786 Chiropractor .762 Science Teacher .746 Optometrist .691 Dentist .676 Dietitian	.700 IRS Agent .683 Math Teacher .626 Accountant .518 Systems Analyst .502 Computer Programmer	.631 Recreation Leader .629 Police Officer .520 Athletic Trainer .517 PE Teacher .506 YWCA Leader

	G11: Counseling	G12: Writing	G13: International	G14: Religious	G15: Artistic
Male (n=599)	.724 Guidance Counselor .698 Minister .691 Social Worker .691 YMCA Leader .641 Speech Pathologist	.727 Public Administrator .717 English Teacher .654 Minister .644 Lawyer .620 Social Worker	.462 Minister	.639 Minister .487 YMCA Leader .483 Guidance Counselor .462 Social Science Teacher .460 Social Worker	.553 Medical Illustrator .592 Flight Attendant .496 Beautician .482 Occupational Therapist
Female (n=425)	.684 Guidance Counselor .675 Social Worker .616 School Administrator .600 Speech Pathologist .599 Minister	.763 Reporter .728 English Teacher .695 Public Relations Dir .639 Social Science Teacher .635 Broadcaster	.475 Elected Public Official .465 Recreational Leader .450 Reporter	.522 Minister .457 Guidance Counselor	.716 Art Teacher .674 Artist, Commercial .648 Photographer .523 Interior Decorator .489 Reporter

	G16: Security	G17: Technological	G18: Law & Politics	G19: Adventure	G20: Animals
Male (n=599)	.568 Police Officer .475 Marine Enlisted	.701 Engineer .691 Navy Officer .690 Medical Technologist .688 Carpenter .625 Air Force Officer	.734 Public Administrator .730 Elected Public Official .717 Personnel Director .697 Chamber of Commerce Exec. .676 School Administrator	.576 Navy Officer .561 Police Officer .552 Army Officer .548 Marine Enlisted .537 Air Force Officer	.509 Nurse, RN .501 Respiratory Therapist .471 Physical Therapist .452 Dentist
Female (n=425)	.605 Police Officer .587 Army Officer .509 Navy Officer .502 Army Enlisted .450 Navy Enlisted	.748 Electrician .689 Navy Officer .678 Engineer .644 Architect .619 Carpenter	.807 Elected Public Official .751 Insurance Agent .690 Personnel Director .677 School Administrator .653 Social Science Teacher	.677 Police Officer .663 Army Officer .645 Navy Officer .538 Electrician .517 Air Force Officer	.514 Athletic Trainer .507 Veterinarian .494 Physical Therapist .479 Occupational Therapist .475 Forester

	G21: Education
Male (n=599)	.699 Minister .680 Guidance Counselor .669 School Administrator .663 YMCA Leader .660 Social Science Teacher
Female (n=425)	.672 Foreign Language Teach .668 Special Ed Teacher .655 Speech Pathologist .633 Guidance Counselor .633 YWCA teacher

Note. For each General Interest factor, the five highest correlations .450 and above are presented.

Table 18: Regression Analyses Model Comparisons for Sample Strong Occupational Scales

Sample Strong Occupational Scales	Adjusted R^2					
	General Interests		**Model 1** Gen. Int. & personality factors		**Model 2** Gen. Int. & subfactors (Factors entered for Comp & Extro)	
	Male	Female	Male	Female	Male	Female
Marine, Enlisted	.67	.66	.68	.67	.68	.67
Navy, Enlisted	.76	.68	.77	.68	.77	.68
Army Officer	.68	.66	***.68***	.66	***.69***	.66
Navy Officer	.73	.69	.73	.70	.73	.70
Air Force Officer	.72	.60	.72	.62	.72	.62
Air Force Enlisted	.75	.71	.76	.71	.76	.71
Bus Driver	.74	.72	.74	.72	.74	.72
Horticultural Worker	.79	.82	.79	.82	.79	.82
Farmer	.78	.76	***.78***	.75	***.79***	.75
Vocational Ag. Teacher	.68	.69	.68	.69	.68	.69
Forester	.76	.81	.76	***.81***	.76	***.82***
Veterinarian	.73	.85	.73	.86	.73	.86
Athletic Trainer	.57	.74	***.59***	***.74***	***.58***	***.75***
Emergency Med. Technician	.72	.71	.73	***.71***	.73	***.72***
Radiologic Technician	.78	.76	.78	.77	.78	.77
Electrician	.81	.77	.82	.77	.82	.77
Engineer	.81	.75	***.82***	.75	***.83***	.75
Computer Programmer	.78	.76	***.82***	.79	***.83***	.79
Systems Analyst	.74	.75	***.77***	.76	***.78***	.76
Medical Technologist	.80	.80	***.80***	.81	***.81***	.81
Research & Dev. Manager	.71	.71	***.72***	.72	***.73***	.72
Geologist	.74	.77	.74	.77	.74	.77
Biologist	.69	.75	.70	***.76***	.70	***.77***
IRS Agent	.56	.70	***.57***	.70	***.56***	.70
Executive Housekeeper	.56	.66	***.56***	.68	***.57***	.68
Army, Enlisted	.64	.66	.66	***.67***	.66	***.66***

Note. Bold and highlighted are improved R^2s with Model 2 - Personality Subfactors

Table 19: Correlations between General Interests and Personality Factors (n=896)

	Extro-version	Conscien-tiousness	Com-passion	Adven-turous	Dominance	Innovative	Stress
1. Mechanical	-.096	.051	-.107	.201	.101	.240	.020
2. Mgmt/Sales	.322	.125	.053	.464	.392	.225	-.253
3. Performing/ Communication	.323	-.103	.183	.175	.114	.321	.053
4. Food/Consumer Science	.115	-.065	.271	-.132	-.081	.050	.068
5. Service	.009	.086	.149	-.115	-.085	-.059	-.033
6. Transportation	-.019	-.148	-.055	.129	.021	.057	.063
7. Outdoors/ Agriculture	-.074	-.031	-.005	.144	-.001	.166	.068
8. Health/Science	-.032	.030	.124	.119	-.008	.173	.029
9. Computational/ Financial	-.118	.270	-.074	.160	.123	.090	-.117
10. Athletic	.167	.003	.006	.371	.134	.052	-.096
11. Counseling	.260	-.065	.376	.079	.090	.087	-.026
12. Writing	.169	-.059	.141	.074	.060	.334	.017
13. International	.150	-.091	.175	.135	.027	.154	-.035
14. Religious	.127	.034	.243	.080	.047	.090	-.086
15. Artistic	.077	-.062	.166	.041	-.033	.454	.082
16. Security	.115	-.128	-.056	.356	.171	.169	-.034
17. Technological	-.072	.071	-.118	.276	.144	.292	-.048
18. Law & Politics	.252	-.077	.021	.327	.277	.237	-.094
19. Adventure	.076	-.067	-.096	.446	.211	.205	-.029
20. Animals	-.019	-.079	.033	.071	-.042	.107	.090
21. Education	.192	.047	.166	.148	.135	.138	-.119

Table 20: Correlations of ISVI General Interest Scales and Personality Subfactors (n = 896)

	Adventurous		Compassion		
General Interests Factors	**Adv1: Daring**	**Adv2: Ambitious**	**Com1: Sympathetic**	**Com2: Supportive**	**Com3: Tolerant**
1. Mechanical	.228	.095	-.160	-.139	.050
2. Mgmt/Sales	.376	.475	-.005	.106	.040
3. Performing/ Comm	.197	.087	.174	.240	.053
4. Food/ Consumer Science	-.099	-.149	.283	.256	.150
5. Service	-.109	-.092	.104	.121	.164
6. Transportation	.172	.019	-.076	-.076	.032
7. Outdoors/ Agriculture	.185	.031	-.005	-.051	.054
8. Health/Science	.140	.049	.084	.078	.160
9. Computational/ Financial	.092	.227	-.141	-.075	.045
10. Athletic	.319	.351	-.024	.011	.024
11. Counseling	.076	.060	.341	.391	.208
12. Writing	.083	.037	.113	.185	.057
13. International	.174	.029	.117	.199	.137
14. Religious	.078	.059	.197	.245	.186
15. Artistic	.096	-.065	.149	.160	.114
16. Security	.384	.204	-.060	-.062	-.025
17. Technological	.285	.179	-.173	-.151	.051
18. Law & Politics	.294	.285	-.016	.074	.001
19. Adventure	.469	.276	-.133	-.106	.000
20. Animals	.111	-.017	.051	-.005	.035
21. Education	.108	.171	.110	.196	.113

Table 20 (continued): Correlations of ISVI General Interest Scales and Personality Subfactors

	Conscientiousness			Dominance		
General Interests Factors	**Con1: Precise**	**Con2: Organized**	**Con3: Achieving**	**Dom1: Assertive**	**Dom2: Independent**	**Dom3: Blunt**
1. Mechanical	.122	-.030	.005	.060	.112	.088
2. Mgmt/Sales	.028	.074	.271	.426	.211	.188
3. Performing/Comm	-.069	-.160	.007	.120	.063	.061
4. Food/Consumer Science	-.055	-.042	-.071	-.082	-.030	-.064
5. Service	.084	.106	.002	-.063	-.070	-.074
6. Transportation	-.068	-.167	-.167	.025	-.015	.035
7. Outdoors/Agriculture	.011	-.051	-.049	-.036	.053	.015
8. Health/Science	.106	-.034	-.017	-.027	.048	-.021
9. Computational/Financial	.288	.166	.226	.080	.173	.057
10. Athletic	-.027	-.029	.095	.153	.090	.029
11. Counseling	-.091	-.058	.022	.094	.023	.077
12. Writing	-.018	-.106	.003	.060	.023	.048
13. International	-.038	-.141	-.008	.015	.065	-.011
14. Religious	.057	-.019	.078	.072	-.008	.015
15. Artistic	.035	-.127	-.067	-.066	.047	-.024
16. Security	-.093	-.157	-.087	.172	.110	.091
17. Technological	.132	-.024	.050	.106	.149	.096
18. Law & Politics	-.098	-.114	.054	.321	.113	.132
19. Adventure	-.026	-.135	.000	.204	.151	.113
20. Animals	-.043	-.071	-.099	-.067	.034	-.036
21. Education	.013	.020	.121	.162	.062	.046

Table 20 (continued): Correlations of ISVI General Interest Scales and Personality Subfactors

	Extroversion			Innovative		Stress	
General Interests Factors	**Ext1: Enthusiastic**	**Ext2: Social**	**Ext3: Verbal**	**Inn1: Imaginative**	**Inn2: Clever**	**Str1: Tense**	**Str2: Bitter**
1. Mechanical	.053	-.110	-.159	.248	.183	.000	.048
2. Mgmt/Sales	.321	.316	.236	.180	.250	-.223	-.279
3. Performing/ Comm	.240	.341	.271	.314	.234	.052	.059
4. Food/Consumer Science	.080	.148	.069	.094	-.026	.045	.108
5. Service	.021	.025	-.029	-.054	-.043	-.058	.016
6. Transportation	.029	-.010	-.053	.060	.045	.045	.083
7. Outdoors/ Agriculture	.049	-.075	-.131	.177	.108	.053	.089
8. Health/Science	.079	-.030	-.110	.122	.210	.015	.056
9. Computational/ Financial	.009	-.141	-.149	-.021	.250	-.110	-.121
10. Athletic	.253	.160	.065	.001	.120	-.086	-.106
11. Counseling	.183	.285	.207	.027	.148	-.041	.008
12. Writing	.130	.164	.150	.286	.299	.023	.009
13. International	.145	.172	.093	.119	.156	-.046	-.007
14. Religious	.118	.144	.074	.064	.100	-.114	-.033
15. Artistic	.109	.086	.020	.519	.217	.061	.118
16. Security	.184	.110	.041	.139	.174	-.034	-.033
17. Technological	.073	-.096	-.129	.284	.243	-.059	-.024
18. Law & Politics	.211	.250	.219	.158	.301	-.078	-.111
19. Adventure	.199	.049	-.006	.176	.201	-.033	-.020
20. Animals	.068	-.031	-.061	.102	.080	.080	.108
21. Education	.150	.200	.151	.068	.203	-.104	-.127

Table 21: Correlations of ISVI Skills and Personality Subfactors (n = 896)

Skill Factors	Adventurous		Compassion		
	Adv1: Daring	Adv2: Ambitious	Com1: Sympathetic	Com2: Supportive	Com3: Tolerant
1. Managing	.400	.514	.059	.216	.013
2. Interpersonal	.286	.285	.175	.353	.182
3. Working with Others	.254	.197	.337	.448	.253
4. Mechanical	.309	.111	-.088	-.053	.075
5. Analytical	.321	.296	-.037	.080	.082
6. Musical	.010	-.085	.095	.154	.083
7. Athletic	.382	.321	.003	.046	.031
8. Organizing	-.006	.331	-.005	.077	-.005
9. Marketing	.395	.452	-.008	.109	.034
10. Artistic	.183	.056	.040	059	.098
11. Cross-cultural	.223	.061	.095	.173	.151
12. Clerical	-.048	.048	.052	.136	.103
13. Writing	.041	.052	.085	.154	.093
14. Math	.110	.231	-.122	-.061	..071

Skill Factors	Conscientiousness			Dominance		
	Con1: Precise	Con2: Organized	Con3: Achieving	Dom1: Assertive	Dom2: Independent	Dom3: Blunt
1. Managing	.053	.212	.414	.659	.346	.303
2. Interpersonal	.001	.035	.221	.377	.160	.166
3. Working with Others	-.114	-.023	.125	.267	.048	.080
4. Mechanical	.137	.007	.054	.104	.156	.112
5. Analytical	.271	.134	.330	.297	.320	.215
6. Musical	.059	-.085	-.023	-.101	-.014	-.035
7. Athletic	.051	.053	.145	.146	.163	.044
8. Organizing	.487	.684	.596	.242	.282	.118
9. Marketing	-.005	.029	.266	.408	.200	.191
10. Artistic	.123	-.038	.052	-.010	.107	.017
11. Cross-cultural	-.046	-.102	.064	.080	.085	.030
12. Clerical	.195	.177	.178	.026	.113	-.010
13. Writing	.100	.042	.127	.046	.055	.040
14. Math	.344	.215	.276	.101	.237	.051

Table 21 (Continued): Correlations of ISVI Skills and Personality Subfactors

	Extroversion			Innovative		Stress	
Skill Factors	**Ext1: Enthusiastic**	**Ext2: Social**	**Ext3: Verbal**	**Inn1: Imaginative**	**Inn2: Clever**	**Str1: Tense**	**Str2: Bitter**
1. Managing	.377	.404	.371	.205	.343	-.279	-.371
2. Interpersonal	.318	.458	.377	.218	.359	-.205	-.243
3. Working with Others	.440	.715	.541	.123	.091	-.277	-.248
4. Mechanical	.121	-.017	-.097	.331	.222	-.096	-.053
5. Analytical	.142	.089	.079	.381	.570	-.139	-.180
6. Musical	.021	.108	.044	.238	.129	.067	.088
7. Athletic	.291	.165	.055	.081	.141	-.118	-.131
8. Organizing	.030	-.021	-.039	.023	.144	-.154	-.216
9. Marketing	.338	.360	.306	.273	.321	-.222	-.287
10. Artistic	.088	.036	-.032	.591	.276	-.028	.028
11. Cross-cultural	.147	.182	.113	.152	.221	-.075	-.060
12. Clerical	.032	-.005	.003	.024	.095	-.130	-.110
13. Writing	.045	.079	.074	.248	.310	-.027	-.056
14. Math	.013	-.128	-.124	.052	.316	-.170	-.181

Table 22: Correlations between personality dimensions of youth sample measured in 1995 and in 1998.

Personality Dimensions	Correlation between Time1 and Time2
Dominance	**.480**
Assertive	.614
Independent	.368
Blunt	.489
Extroversion	**.620**
Enthusiastic	.470
Social	.621
Verbal	.678
Compassion	**.459**
Sympathetic	.460
Supportive	.408
Tolerant	.492
Conscientiousness	**.592**
Precise	.587
Organized	.595
Achieving	.504
Adventurousness	**.681**
Daring	.632
Ambitious	.638
Innovation	**.626**
Imaginative	.632
Clever	.657
Stress	**.604**
Indebtedness	**.507**
Financial Management	**.468**

Note: All correlations were significant at $p \leq .01$, N=93.

Table 23: Correlations between activity interest dimensions in college youth sample measured in 1995 and 1998.

Activity Interest Dimensions	Correlations between Time1 and Time2
Animal	.735
Artistic	.727
Athletic	.759
Civil Design	.633
Clerical	.644
Customer Service	.641
Electronic/Machines	.699
Educational	.659
Entertainment	.704
Factory Assembly	.623
Farrning/Ranching	.665
Financial	.617
Food	.568
Communication Large Groups	.799
Counseling	.774
Hand Construction	.566
Health Service/Support	.687
Hotel/Restaurant Service	.725
International	.640
Landscaping	.651
Management	.663
Math	.762
Musical	.781
Political Communication	.700
Provide Medical Care	.744
Religious	.673
Research Medical	.710
Research Nature	.662
Risky	.735
Sales Communication	.576
Science Research	.695
Security	.722
Self-employment	.676
Styling	.719
Transportation	.726
Writing Communication	.782

Note: All correlations were significant at $p \leq .01$, N=89.

Table 24: Frequency of students' major status by point at which career/major decision was made

	Major Status			
	Major- Declareds	Major-Deciders	Major-Changers	Total
College Entry	13			13
Early 1st year	2	1	1	4
Late 1st year	3	2	1	6
Early 2nd year	7	2	6	15
Late 2nd year	4	6	7	17
Early 3rd year	3	2		5
Late 3 rd year	4	1		5
Early 4th year	1			1
Late 4th year	1			1
Still Undecided	9	7	8	24
Total	46	21	24	91

Table 25: South Africa Translation Validation Study
English - Afrikaans Correlations – Personality Factors and Subfactors

	Second Test Group n=23	Home Language English n=10	Home Language Afrikaans n=13
Factors			
Adventurous	0.84	0.88**	0.87**
Compassion	0.89	0.91**	0.91**
Conscientiousness	0.80	0.95**	0.35
Dominance	0.79	0.87**	0.68**
Extroversion	0.87	0.95**	0.83**
Innovative	0.86	0.94**	0.83**
Subfactors			
Adventurous1: Daring	0.91**	0.92**	0.95**
Adventurous2: Ambitious	0.52**	0.78**	0.40
Compassion1: Sympathetic	0.83**	0.76**	0.87**
Compassion2: Supportive	0.89**	0.85**	0.93**
Compassion3: Tolerant	0.79**	0.82**	0.83**
Conscientiousness1: Precise	0.76**	0.86**	0.59*
Conscientiousness2: Organized	0.81**	0.95**	0.44
Conscientiousness3: Achieving	0.76**	0.86**	0.65**
Dominance1: Assertive	0.81**	0.91**	0.68**
Dominance2: Independent	0.53**	0.68*	0.44
Dominance3: Blunt	0.53**	0.62*	0.20
Extroversion1: Enthusiastic	0.71**	0.73**	0.70**
Extroversion2: Social	0.8**	0.95**	0.67**
Extroversion3: Verbal	0.87**	0.92**	0.82**
Innovative1: Imaginative	0.85**	0.95**	0.80**
Innovative2: Clever	0.8**	0.89**	0.80**
Stress1: Tense	0.93**	0.95**	0.91**
Stress2: Bitter	0.88**	0.90**	0.87**

Note. **Correlations significant at p<.001 (99%),
Note. *Correlations significant at p<.05 (95%) Participants completed second language first, 10 minute break, then home language version. Home language: English (10), Afrikaans (13)

Table 26: CAREER DIRECT South Africa Translation Validation Study
English - Afrikaans Version Correlations Summary
Interests, Activities, Occupations, Subjects, and Skills Factors and Values Priorities

Factors	Correlations Second Grp n=23		Correlations Home Language English n=10		Correlations Home Language Afrikaans n=13
GENERAL INTERESTS					
Adventure:	0.96		0.98		0.94
Animal Care:	0.92		0.85		0.91
Artistic:	0.94		0.95		0.94
Athletics:	0.96		0.95		0.96
Computational/ Financial:	0.93		0.98		0.88
Consumer Science:	0.94		0.95		0.93
Counseling:	0.90		0.83		0.89
Education:	0.92		0.96		0.91
International:	0.82		0.88		0.82
Law & Politics:	0.94		0.92		0.95
Management/ Sales:	0.94		0.91		0.96
Mechanical:	0.89		0.95		0.83
Outdoors/Agriculture:	0.92		0.91		0.90
Performing/ Communication:	0.94		0.95		0.95
Science & Health:	0.90		0.93		0.92
Security & Enforcement:	0.94		0.97		0.95
Service:	0.94		0.97		0.93
Technological Sciences:	0.82		0.92		0.70
Transportation:	0.92		0.91		0.94
Religious:	0.90		0.80		0.96
Writing:	0.94		0.94		0.93

All correlations significant $p<.001$

Table 26 (cont.): CAREER DIRECT South Africa Translation Validation Study

Factors	Correlations Second Grp n=23		Correlations Home Language English n=10		Correlations Home Language Afrikaans n=13
ACTIVITIES					
Animal Care:	0.91		0.96		0.83
Artistic	0.90		0.94		0.86
Athletic:	0.93		0.86		0.95
Civil Design:	0.77		0.94		0.56
Clerical:	0.88		0.93		0.84
Communication Large Groups:	0.95		0.92		0.97
Counseling:	0.87		0.85		0.86
Customer Service:	0.88		0.93		0.84
Hotel/restaurant Service:	0.95		0.97		0.95
Educational:	0.90		0.87		0.93
Electronic/ Machines:	0.85		0.91		0.80
Entertainment:	0.87		0.95		0.81
Factory:	0.85		0.91		0.84
Farming:	0.82		0.88		0.77
Financial	0.96		0.97		0.94
Food:	0.90		0.96		0.88
Hand Construction:	0.84		0.95		0.75
Health Service/Support:	0.85		0.80		0.92
International:	0.78		0.86		0.78
Landscaping:	0.89		0.86		0.90
Management:	0.91		0.84		0.93
Math:	0.81		0.97		0.67
Musical:	0.92		0.83		0.95
Political Communication:	0.86		0.87		0.85
Provide Medical Care:	0.86		0.83		0.89
Religious:	0.96		0.83		0.99
Research Nature:	0.92		0.89		0.92
Research Medical:	0.74		0.84		0.68
Risky Activities	0.94		0.98		0.91
Sales Communication:	0.91		0.91		0.92
Science Research:	0.65		0.73		0.62
Security:	0.92		0.95		0.94
Self-employment:	0.90		0.87		0.93
Styling:	0.86		0.89		0.86
Transportation:	0.90		0.92		0.88
Writing Communication:	0.86		0.83		0.88

Note. Correlations significant: >.63 are significant p<.001

Table 26 (cont.): CAREER DIRECT South Africa Translation Validation Study

Factors	Correlations Second Grp n=23	Correlations Home Language English n=10	Correlations Home Language Afrikaans n=13
OCCUPATIONS			
Adventure:	0.93	0.96	0.90
Animal Care:	0.89	0.64*	0.94
Artist:	0.96	0.95	0.97
Athletes:	0.94	0.89	0.96
Business Leaders:	0.85	0.66*	0.92
Counselors:	0.88	0.86	0.89
Customer Service:	0.95	0.98	0.91
Drivers:	0.80	0.74	0.89
Educators:	0.93	0.93	0.94
Fashion:	0.93	0.97	0.84
Financial/Mathematics:	0.92	0.96	0.92
Home Economics:	0.94	0.99	0.88
Languages:.	0.77	0.89	0.71
Law & Politics:	0.93	0.93	0.94
Medical:	0.88	0.93	0.88
Professional Outdoors:	0.90	0.90	0.90
Reporters/Writers:	0.91	0.93	0.92
Sales/Management:	0.87	0.83	0.93
Science:	0.91	0.99	0.82
Security:	0.94	0.96	0.94
Skilled Technical:	0.86	0.89	0.86

Note. All significant at $p<.01$ except * $p<.05$

Table 26 (cont.): CAREER DIRECT South Africa Translation Validation Study

Factors	Correlations Second Grp n=23		Correlations Home Language English n=10		Correlations Home Language Afrikaans n=13
SUBJECTS					
Agriculture:	0.71		0.45 ns		0.81
Art:	0.86		0.81		0.90
Business & Management:	0.75		0.63*		0.84
Clerical:	0.83		0.85		0.86
Education:	0.80		0.95		0.71
English:	0.91		0.90		0.92
Finance:	0.84		0.88		0.82
Foreign Language:	0.83		0.85		0.83
Home Economics/Domestics:	0.82		0.71*		0.92
Mathematics:	0.86		0.98		0.73
Music:	0.77		0.84		0.73
Physical Education/Training:	0.88		0.91		0.87
Public Performing:	0.95		0.95		0.95
Religion:	0.79		0.72		0.89
Science:	0.90		0.92		0.89
Social Studies:	0.80		0.62*		0.79
Technological Studies:	0.58		0.61		0.55*
Vocational Shop:	0.81		0.90		0.73
SKILLS					
Analytic:	0.81		0.81		0.83
Artistic	0.97		0.97		0.97
Athletic:	0.86		0.78		0.90
Clerical:	0.84		0.94		0.77
Cross-Cultural:	0.90		0.88		0.90
Interpersonal:	0.89		0.97		0.84
Managing:	0.82		0.89		0.82
Marketing:	0.85		0.94		0.71
Math:	0.85		0.93		0.76
Mechanical:	0.94		0.97		0.89
Musical:	0.97		0.89		0.98
Organizing:	0.69		0.91		0.53
Working with Others:	0.88		0.95		0.83
Writing:	0.90		0.90		0.90

Note. All significant at $p<.01$ except * $p<.05$ and ns = non significant

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