

mySkillsProfile

WPS

Work Personality Survey

User Manual



Copyright © 2022, MySkillsProfile.com Limited

www.myskillsprofile.com

WPS is a trademark of MySkillsProfile.com Limited.

All rights reserved. No part of this publication may be reproduced or distributed in any form or by any means or stored in a database or retrieval system without the prior written permission of MySkillsProfile.com Limited.

Contents

1. Introduction	3
1.1 WPS Concept Model	3
1.2 Development of the WPS	4
1.3 Response bias	7
1.4 Quality Criteria	7
2. Administration	9
2.1 Applications	9
2.2 Test Administration	9
2.3 Norming	10
2.4 Good Practice	10
3. Scale Descriptions	11
3.1 Overview	11
3.2 Interpreting Scores	11
4. Norms	33
4.1 Overview	33
4.2 Age	33
4.3 Country of origin	34
4.4 Ethnic Origin	34
4.5 Industry Sectors	34
5. Reliability and Validity	37
5.1 Reliability	37
5.2 Internal Consistency	37
5.3 Retest Stability	38
5.4 Scale Intercorrelations	39
5.5 Standard Error of Difference	39
5.6 Factor Analysis	39
5.7 Relationship to Other Measures	42
5.8 Criterion-Related Validity	42
6. Group Differences	47
6.1 Gender and Age	47
References	51

1. Introduction

This user manual describes the administration, interpretation, and technical properties of the Work Personality Survey (WPS). It is available as a soft copy download only from MySkillsProfile.

1.1 WPS Concept Model

The WPS personality assessment test measures twenty personality dimensions covering the Big Five personality factors. The questionnaire also provides a measure of the General Factor of Personality (GFP). Figure 1 illustrates the WPS concept model, and Figure 2 shows the twenty facets of personality that the test measures. Table 1 provides summary definitions of what each of the facet scales measure.

Figure 1. Big Five Personality Factors



The questionnaire is suitable for the full range of applications for which personality questionnaires are used in employment applications--for example, selection, training and development, team building, counseling, organizational change, and research. The WPS is designed to be used by psychologists, coaches, and other HR professionals, but it can also be purchased direct by individual managers and professionals from myskillsprofile.com.

1.2 Development of the WPS

The WPS was designed originally to provide an assessment at the level of the Big Five factors and a more detailed picture based on individual personality traits. We have recently extended the analysis and reporting of the WPS to measure the General Factor of Personality (GFP).

The WPS personality trait scales emerged from an analysis of the psychological literature on the composition of each of the Big Five. The selection of scales for the Openness to Change factor was also influenced by Kirton's (2002) research on creativity and problem solving style and the author's research on creative style. Twenty scales were chosen because the objective was to design an instrument that could be completed fairly quickly, and that would also give good coverage of some of the important facets of each of the Big Five factors.

Table 2 shows what the WPS measures alongside three other popular personality inventories: the NEO, OPQ32, and HPI.

The development of the WPS can be broken down into two key phases.

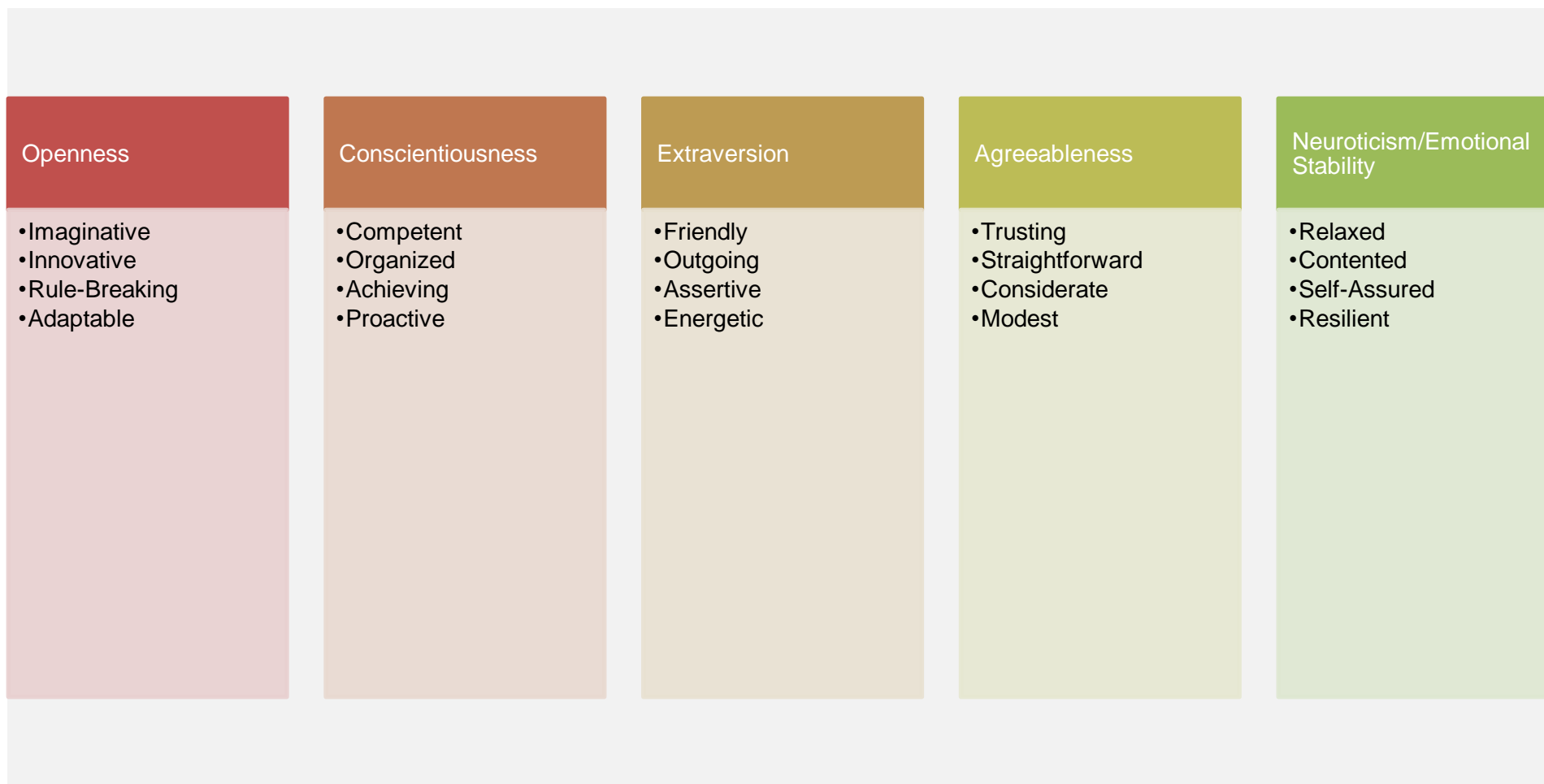
Phase 1. A conceptual model of the instrument was developed based on 20 scales covering the five-factor model replicating the conceptual or deductive approach used to develop the NEO PI-R and OPQ32 questionnaires. In the deductive approach, the questionnaire is built around a pre-specified model of the dimensions the instrument is designed to tap, whereas in the inductive approach the scales tend to be identified through statistical techniques such as factor analysis.

A prototype inventory was developed. Scales were constructed using items from the International Personality Item Pool (Goldberg, 2006) and items from the author's test item database. Scales contained equal numbers of positively and negatively keyed items. The use of positively and negatively-keyed questionnaire items is designed to reduce the tendency for respondents to agree with items irrespective of content. The assumption is that oppositely keyed items provide equivalent measures of a construct after the negative items have been reverse scored.

The prototype questionnaire together with a basic report generation facility providing feedback was established on the Internet. Analysis of the growing database was conducted at regular intervals to check the reliability of the scales, and poorly performing items were changed to improve scale reliability. Exploratory Factor Analysis was carried out to examine the factor structure of the instrument, and norms were collected over the Internet. The instrument was published on MySkillsProfile's e-testing platform in 2010 with a computer-generated feedback report.

Phase 2. A review of the technical properties of the instrument commenced in the second half of 2014. We looked at the reliabilities of the scales across different samples, and we conducted EFA to establish whether the instrument could provide a measure of the General Factor of Personality. This work stream also led to some changes in questionnaire items designed to improve the reliabilities of the scales and the factor structure of the questionnaire.

Figure 2. WPS Personality Factors and Scales



Note. Factors presented in OCEAN sequence

Table 1. WPS Scale Definitions

Scale	High Score Meaning	
Friendly	Gets to know people quickly, cheers people up, enjoys contact	Extraversion
Outgoing	Likes to be surrounded by people, talks a lot, enjoys social occasions	
Assertive	Communicates views and ideas, seeks to influence people	
Energetic	Keeps busy, reacts quickly, is always on the go, fills spare time	
Trusting	Believes that people have good intentions, trusts people to be honest	Agreeableness
Straightforward	Behaves straightforwardly, does not manipulate or use people	
Considerate	Shows concern, listens well, makes people feel welcome	
Modest	Keeps quiet about successes and achievements, avoids talking about self	
Imaginative	Has strong imagination, sets aside time for thinking, enjoys daydreaming	Openness
Innovative	Generates original solutions to problems, has lots of ideas for change	
Rule-Breaking	Prepared to bend the rules and take risks to achieve change	
Adaptable	Tries new ways of working, adapts quickly to change, prefers variety	
Competent	Completes tasks, excels at work, gets things done efficiently	Conscientiousness
Organized	Likes to be organized, keeps things tidy, does things according to a plan	
Achieving	Works hard, sets high standards, does more than is expected of him or her	
Proactive	Gets down to work quickly, initiates activities, prepares in advance	
Relaxed	Has fewer worries than most people, finds it easy to unwind	Emotional Stability
Contented	Comfortable with self, happy with life, positive about future	
Self-Assured	Confident in unfamiliar surroundings and with new people	
Resilient	Calm under pressure, copes with problems, overcomes setbacks quickly	

1.3 Response bias

The ability of respondents to fake responses to personality questionnaires is an area of continuing concern and research interest. The WPS does not contain a specific scale to measure response bias because there is evidence that while respondents do attempt to raise their scores in certain situations, the resulting distortion does not necessarily affect the validity of the results.

The net effect of faking may be to raise everyone's scores by a small margin, but that does not invalidate using a personality questionnaire to help predict job performance (Hough et al, 1998; McCrae & Costa, 1983). It is also believed that impression management may be the result of factors other than a deliberate attempt by the candidate to match his or her personality profile to what he or she believes is the ideal personality for the job, for example, high self-esteem and/or low self-awareness.

1.4 Quality Criteria

The WPS was designed to meet the key criteria in the EFPA Review Model for the Description and Evaluation of Psychological Tests (Bartram, 2002). The EFPA Review Model was produced to support and encourage the process of harmonizing the reviewing of tests. It provides a standard set of criteria to assess the quality of modern psychometric tests. These cover the common areas of test review such as norms, reliability, and validity.

Table 2. What the WPS Personality Scales Measure in Comparison to Other Inventories

Big Five Factor	OPQ32	HPI	NEO	WPS
Openness to experience	Conventional Variety seeking Rule following Innovative Independent minded Conceptual	Inquisitive	Fantasy Aesthetics Feelings Actions Ideas Values	Imaginative Innovative Rule-breaking Adaptable
Conscientiousness	Forward thinking Detail conscious Vigorous Achieving Controlling Conscientious	Ambition Learning approach Prudence	Competence Order Dutifulness Achievement striving Self-discipline Deliberation	Competent Organized Achieving Proactive
Extraversion	Outgoing Emotionally controlled Modest Affiliative Socially confident Persuasive	Sociability	Warmth Gregariousness Assertiveness Activity Excitement seeking Positive emotion	Friendly Outgoing Assertive Energetic
Agreeableness	Democratic Caring Behavioral Competitive Trusting Decisive	Interpersonal sensitivity	Trust Straightforwardness Altruism Compliance Modesty Tender-mindedness	Trusting Straightforward Considerate Modest
Neuroticism	Relaxed Tough-minded Worrying Optimistic Adaptable	Adjustment	Anxiety Angry hostility Depression Self-consciousness Impulsiveness Vulnerability	Relaxed Contented Self-assured Resilient

2. Administration

2.1 Applications

The WPS is suitable for a range of assessment and development applications including selection, coaching, training, team building, and career counseling.

Selection. WPS interpretive reports about a candidate's personality and competency potential provide a structure for interviewers and candidates to discuss a candidate's potential strengths and weaknesses. In competency-based selection, the WPS model provides a framework of twenty competencies to compare candidates against, and use as the foundation for a competency-based interview.

Assessment and development centers. WPS profiles also provide a source of information about a candidate's personality profile, work style, and potential development needs to put alongside information from in-tray and group exercises. The interpretive report provides practical tips and suggestions for performance improvement for participants to consider alongside feedback from assessors.

Training and development. The WPS questionnaire can help in the development of a company's existing staff in individual and group development contexts. The WPS profile provides a structure for a member of staff and their line manager, mentor, trainer, or coach to explore strengths and development needs. The development section of the interpretive report provides practical ideas and suggestions for learning and development for trainees to consider.

Team building. Sharing of WPS profiles can help teams to understand the range of styles within the team, and how these might be deployed in projects. The creation of a WPS team profile may also reveal gaps in the team's capability and help identify suitable team development activities.

Coaching and counseling. WPS interpretive reports also provide a suitable structure for a coach to explore a client's work/management/leadership level, style, strengths, and potential development needs.

2.2 Test Administration

It is important that people who are asked to take the WPS assessment test understand the purpose and process. Test takers typically want to know what the test measures, how it will be used, whether they will see their results, and who else will have access to their profiles. This information could be provided as part of a broader briefing about the assessment context, or it could be sent out with the invitation email to the online assessment session.

The WPS questionnaire can only be administered online by MySkillsProfile and its partners. The service for individual customers provides a direct access service for individual customers to take the questionnaire, pay for the assessment by credit card, and download (or receive via email) the interpretive report in PDF format.

The corporate testing service works in a similar fashion except that test takers bypass the payment element, and test administrators have the option of determining how feedback reports are handled. The feedback handling options are that interpretive reports are sent to a) the test administrator, b) the test taker, or c) both the test administrator and test taker.

2.3 Norming

In order to interpret WPS raw scores, we compare an individual's results against an international comparison group of people who have answered the questionnaire. The international comparison group is referred to as the norm group or standardization sample, and the comparison generates a Standard Ten Score (sten) score for each scale. Chapter 4 gives information about the composition of the norm group for the questionnaire. The collection of norms from different countries is an ongoing process, and additional norm tables will be added as required.

2.4 Good Practice

Occupational test users must be aware of the implications of employment law for psychometric test use. Test users have an ethical responsibility for the welfare of test takers. When people feel they have been treated fairly, they will leave the test session with a good impression of testing and the testing organization. Fair testing also has an important technical impact. If performance on the test is influenced by anything other than the attribute being measured, the accuracy and relevance of the results will be reduced.

3. Scale Descriptions

3.1 Overview

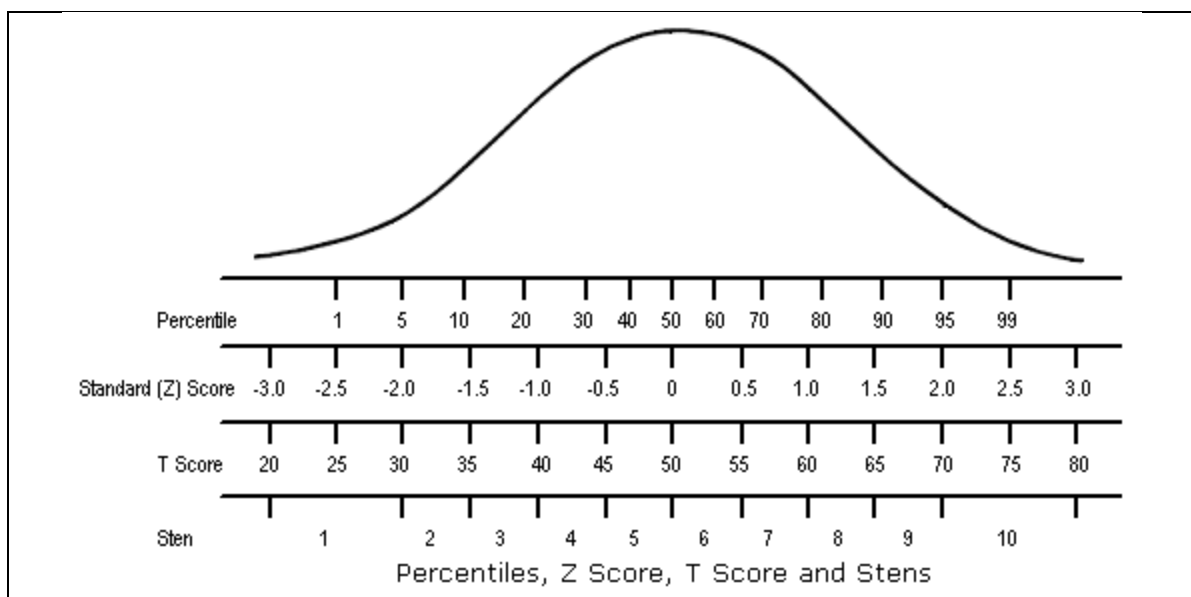
This chapter presents information on each of the WPS scales. For each scale, information is presented about how to interpret high, medium, and low scores. This includes brief descriptions of the meaning of scale scores, examples of questionnaire items, a fuller description of key competencies and behaviors associated with high and low scores, and an indication of the relationship between the scales and other scales in the questionnaire.

In the profile sheet and computer-generated report, test takers' scores are reported on the Sten (standard ten) scale that provides a scale of 10 points. Figure 3 shows how the sten scale and other commonly used scales map onto the normal distribution curve. The WPS provides two levels of interpretation: factor scores refer to broad domains which are multi-faceted, and trait scores refer to more narrowly focused behaviors which are facets of the broad domains.

3.2 Interpreting Scores

The scales measure personality traits that are normally distributed within the general population. Normalized sten scores are used as the standard scale. The average range on a sten scale is from 4 to 7 and 68% of people score in this range. Scores outside the average range are indicative of aspects of style where the respondent is likely to be different from most people. Whether these points of difference are an asset or a liability will depend on the situation within which the person is operating.

Figure 3. Sten Scale and its Relationship with the Normal Distribution Curves and Other Scales



It is important to note that the scales are a measure of normal personality and not intended for the diagnosis of clinical problems. A person may score at one of the extreme ends of a number of scales and will still be normally adjusted (although some extreme scores may suggest characteristics that are less comfortable for the person or those around them).

When interpreting factor scores, especially middle range ones, it is important to look at the pattern of trait scale scores. It is unwise to assume that a middle range factor score implies that the candidate also has middle range scores on each of the scales that make up the factor. Similarly, two people may score equally high on a factor, for example, Extraversion and yet be different in the behavioral expression of their high Extraversion. The expression of the underlying factor is described by the scores on the individual scales that relate to it.

Scale	Page
Friendly	14
Gregarious	15
Assertive	16
Energetic	17
Trusting	18
Straightforward	19
Considerate	20
Modest	21
Imaginative	22
Innovative	23
Rule-Breaking	24
Adaptable	25
Competent	26
Organized	27
Achieving	28
Proactive	29
Relaxed	30
Contented	31
Self-Assured	32
Resilient	33

Friendly

LOW SCORERS		HIGH SCORERS	
<p>Description More formal, reserved and distant but not necessarily lacking in compassion.</p>		<p>Description Warm, affectionate and friendly.</p>	
<p>Typical Item I have been hard to get to know.</p>		<p>Typical Item I have made friends easily.</p>	
<p>Key Behaviors Can work on their own, do not need to be with people all the time, keep people at a distance, but not necessarily unfriendly.</p>		<p>Key Behaviors Easily form friendships and attachments to others, like to be with people. They get to know people quickly and cheer people up.</p>	
MODERATE SCORERS			
<p>As friendly as the average person.</p> <p>Moderately warm and friendly.</p> <p>Friendly in some occasions but more formal in others.</p>			
CORRELATIONS	POSITIVE		NEGATIVE
	<p>Self-Assured Gregarious Considerate</p>		<p>Modest</p>

Outgoing

LOW SCORERS		HIGH SCORERS	
Description Quiet and reserved, do not need social stimulation.		Description Talkative, lively and animated	
Typical Item I have been a quiet person		Typical Item I have liked to have people around me.	
Key Behaviors Prefer to do things alone, avoid crowded events, are quiet in groups, stay in the background on social occasions.		Key Behaviors Like to have people around them, talk a lot, enjoy social occasions, like to enjoy themselves.	
MODERATE SCORERS			
As lively and animated as the average person. Lively and animated in some situations but not others. Moderately gregarious and outgoing.			
CORRELATIONS	POSITIVE		NEGATIVE
	Friendly Self-Assured Assertive		Modest

Assertive

LOW SCORERS		HIGH SCORERS	
<p>Description Let others do the talking, prefer to keep in the background.</p>		<p>Description Speak confidently and clearly to individuals and groups, are often chosen to be group leaders.</p>	
<p>Typical Item I have kept my opinions to myself.</p>		<p>Typical Item I have communicated my ideas clearly.</p>	
<p>Key Behaviors Prefer to remain quiet and avoid drawing attention to themselves. They keep their opinions to themselves and wait for others to lead the way.</p>		<p>Key Behaviors Put their views across directly, tell people if they think they are wrong, argue their views in the face of opposition. They influence people and take charge when the opportunity arises.</p>	
MODERATE SCORERS			
<p>Maintain a balance between directness and tact.</p> <p>Express views and concerns in some situations but not others.</p> <p>Communicate their views as well as the average person.</p>			
CORRELATIONS	POSITIVE		NEGATIVE
	<p>Self-Assured Innovative Friendly</p>		<p>Modest</p>

Energetic

LOW SCORERS		HIGH SCORERS	
<p>Description Do things at a steady pace, like to take things easy.</p>		<p>Description Thrive on activity, like to be kept busy, enjoy having a lot to do.</p>	
<p>Typical Item I have liked to take my time.</p>		<p>Typical Item I have been on the go.</p>	
<p>Key Behaviors More leisurely and relaxed but not necessarily lazy. Likely to leave others to get things started and initiate changes and improvements.</p>		<p>Key Behaviors Display a sense of urgency and self-confidence. Willing to take on extra work and put in extra hours to get things done. Likely to initiate changes and improvements. Lead busy and active lives.</p>	
MODERATE SCORERS			
<p>Like to be kept moderately busy and active.</p> <p>Balance periods of intense activity with periods of relaxation.</p> <p>As active and vigorous as the average person.</p>			
CORRELATIONS		POSITIVE	NEGATIVE
		Proactive Achieving Competent	Modest

Trusting

LOW SCORERS		HIGH SCORERS	
<p>Description Are skeptical of others' intentions, find it difficult to trust people.</p>		<p>Description Believe that people are honest and well-intentioned.</p>	
<p>Typical Item I have been wary of other people</p>		<p>Typical Item I have believed that people have good intentions.</p>	
<p>Key Behaviors Tend to be cynical and skeptical of other people's intentions. Less likely to be sensitive to other people's views and feelings. More likely to ignore people's views and feelings and worry about their motives.</p>		<p>Key Behaviors Like to look for the best in people and tend to be considerate towards others. May be taken in and used or manipulated by other people. May be perceived as naïve.</p>	
MODERATE SCORERS			
<p>Judge others are honesty and trustworthiness on the evidence.</p> <p>Balance trust and skepticism according to the situation.</p> <p>As likely to believe what others say as the average person.</p>			
CORRELATIONS	POSITIVE	NEGATIVE	
	<p>Contented Friendly Considerate</p>		

Straightforward

LOW SCORERS		HIGH SCORERS
Description Prepared to flatter and manipulate people to achieve their objectives.		Description Are frank, sincere and trusting.
Typical Item I have used people for my own ends.		Typical Item I have been straightforward with people.
Key Behaviors Regard flattery and manipulation as necessary social skills. Tend to see straightforward people as naïve. Low scorers tend to more prepared to bend the rules but they are not necessarily dishonest.		Key Behaviors Deals with people in a plain straightforward manner. Tend to be considerate towards others and try not to take advantage of people. Likely to stick to rules and procedures.
MODERATE SCORERS		
Deal with people in a straightforward fashion so long as they trust people. Generally straightforward but prepared to use flattery to achieve specific objectives. As candid and sincere as the average person.		
CORRELATIONS	POSITIVE	NEGATIVE
	Considerate Trusting Proactive	Rule-Breaking

Considerate

LOW SCORERS		HIGH SCORERS	
Description Prefer to act and take decisions on their own.		Description Take account of other people's ideas, views, concerns and feelings.	
Typical Item I have had little time for other people.		Typical Item I have been concerned about others.	
Key Behaviors Operate better independently. They find it hard to make the time to listen to what other people have to say. They may not get others' commitment because of their failure to consult and involve people. They are more likely to flatter people and manipulate situations to get their way.		Key Behaviors Make time for people, listen carefully to their views, take account of their feelings and emotions. They involve people in decisions and make people feel welcome. Their natural style is to deal with people in an open and straightforward fashion.	
MODERATE SCORERS			
Vary their personal style according to the situation. Are as considerate to others as the average person. Are moderately sensitive to others' views and feelings.			
CORRELATIONS	POSITIVE		NEGATIVE
	Friendly Trusting Straightforward		Rule-Breaking

Modest

LOW SCORERS		HIGH SCORERS	
Description Tell people about themselves, their achievements and goals.		Description Are self-effacing and unassuming and keep quiet about their aspirations and achievements.	
Typical Item I have talked about myself.		Typical Item I have kept quiet about my achievements.	
Key Behaviors Assertive and self-confident, they talk openly about their aspirations and successes. They may be seen as somewhat arrogant and self-centered.		Key Behaviors Believe that it is better to be reticent about their goals, successes and aspirations. This may stem from lack of self-confidence. Consequently, they may need training and support to develop assertiveness.	
MODERATE SCORERS			
Modest in some situations but not others. Display as much modesty as the next person. Come across as reasonably modest and unassuming.			
CORRELATIONS	POSITIVE	NEGATIVE	
	Straightforward	Innovative Self-Assured Assertive	

Imaginative

LOW SCORERS		HIGH SCORERS	
<p>Description Focus on developing practical solutions to problems.</p>		<p>Description Like to use their imagination and get lost in thought.</p>	
<p>Typical Item I have prevented myself getting lost in thought.</p>		<p>Typical Item I have had a vivid imagination.</p>	
<p>Key Behaviors Adopt a down-to-earth approach to innovation. They stick to rules and procedures and focus on identifying practical solutions to problems.</p>		<p>Key Behaviors Like to spend time thinking about things and imagining/visualizing different possibilities. They use daydreaming as a way of developing an interesting inner world.</p>	
MODERATE SCORERS			
<p>Produce practical or imaginative ideas according to the needs of the situation.</p> <p>Use their imagination as much as the average person.</p> <p>Get lost in thought as much as the average person.</p>			
CORRELATIONS		POSITIVE	NEGATIVE
		<p>Rule-Breaking Innovative Adaptable</p>	<p>Contented Proactive Organized</p>

Innovative

LOW SCORERS		HIGH SCORERS	
<p>Description Produce a few practical ideas for doing things better.</p>		<p>Description Produce lots of novel ideas for doing things differently.</p>	
<p>Typical Item I have found it hard to see how to improve things.</p>		<p>Typical Item I have produced original ideas.</p>	
<p>Key Behaviors 'Adaptors' present themselves as pragmatists who identify a few ideas for improving things within generally accepted constraints. They tend to implement rather than initiate change.</p>		<p>Key Behaviors 'Innovators' present themselves as creative and inventive people and bring new perspectives to problems. They like to generate novel ideas about how to do things differently. Innovators are self-confident people with achievement drive who make things happen.</p>	
MODERATE SCORERS			
<p>As creative and inventive as the next person.</p> <p>Innovative in some circumstances and adaptive in others.</p> <p>Feel moderately creative and innovative.</p>			
CORRELATIONS		POSITIVE	NEGATIVE
		Adaptable Assertive Competent	Modest

Rule-Breaking

LOW SCORERS		HIGH SCORERS	
<p>Description Follow instructions and reduce risks.</p>		<p>Description Prepared to break rules and take risks in order to achieve change.</p>	
<p>Typical Item I have respected custom and tradition.</p>		<p>Typical Item I have bent rules and regulations.</p>	
<p>Key Behaviors Feel bound to stick to company rules and procedures. Are unlikely to initiate significant changes or take risks. May be seen as inflexible and obstructive by people who can see ways of doing things completely differently.</p>		<p>Key Behaviors Recognize that it is often necessary to break rules and take risks in order to change things. Rule-breakers tend to be innovators who assert their views and opinions and are prepared to challenge the system to make things better.</p>	
MODERATE SCORERS			
<p>Are willing to bend the rules in some situations but not others.</p> <p>Follow the rules as much as the average person.</p> <p>Are willing to break rules from time to time.</p>			
CORRELATIONS	POSITIVE		NEGATIVE
	<p>Innovative Imaginative Assertive</p>		<p>Modest Straightforward Organized</p>

Adaptable

LOW SCORERS		HIGH SCORERS	
<p>Description Prefer continuity and take time to adapt to change.</p>		<p>Description Adapt quickly to new circumstances and people.</p>	
<p>Typical Item I have preferred to stick with things that I know.</p>		<p>Typical Item I have adapted quickly to change.</p>	
<p>Key Behaviors Are creatures of habit attached to routine and conventions. They behave consistently and find it hard to change their behavior to suit new circumstances and situations.</p>		<p>Key Behaviors Prefer variety to routine, are quick to try new ways of working. They are resilient and self-confident people who enjoy variety in their lives and see change as an opportunity.</p>	
MODERATE SCORERS			
<p>Adapt quickly to change they have been consulted about but slower to imposed changes.</p> <p>Adapt to change as quickly as the average person.</p> <p>Are moderately adaptable and flexible.</p>			
CORRELATIONS	POSITIVE		NEGATIVE
	<p>Innovative Self-Assured Resilient</p>		<p>Modest</p>

Competent

LOW SCORERS		HIGH SCORERS
Description Perform poorly and leave things unfinished.		Description Get things done and complete tasks successfully.
Typical Item I have gone into situations without being prepared.		Typical Item I have known how to get things done.
Key Behaviors Go into situations without being prepared and consequently misjudge situations. They lack motivation and do not do things very well and tend to leave things unfinished. Low scorers often suffer from low self-esteem.		Key Behaviors Show drive and determination and generally excel at what they do. They prepare in advance and think about the consequences of different courses of action. They display resilience and self-confidence.
MODERATE SCORERS		
Perform competently when they are motivated and interested. Perform as competently as the next person. Come across as reasonably competent.		
CORRELATIONS	POSITIVE	NEGATIVE
	Achieving Proactive Resilient	Imaginative Modest

Organized

LOW SCORERS		HIGH SCORERS
Description Are disorganized and leave things unfinished.		Description Are methodical and systematic and like to get the detail right.
Typical Item I have left things in a mess.		Typical Item I have left things in a mess.
Key Behaviors Do things as they go along rather than plan in advance. They are more disorganized in their work and personal lives. They leave others to look after the detail and tidy up behind them.		Key Behaviors Organize their work and personal lives, develop plans, and check things to ensure everything is right. They have high standards which others may find difficult to achieve.
MODERATE SCORERS		
Are organized and methodical when it suits them. Show as much concern over the detail as the next person. Are moderately tidy and organized.		
CORRELATIONS	POSITIVE	NEGATIVE
	Proactive Competent Achieving	Imaginative Rule-Breaking

Achieving

LOW SCORERS		HIGH SCORERS	
<p>Description Lack ambition and put less effort into their work.</p>		<p>Description Have a clear sense of direction and work hard to achieve their goals.</p>	
<p>Typical Item I have lacked the will to succeed.</p>		<p>Typical Item I have done more than what's expected of me.</p>	
<p>Key Behaviors Have lower aspirations and do not feel that getting on at work is the most important thing. They may also lack a sense of direction in their lives and have lower self-esteem. They are likely to be perceived as lazy by high-achieving colleagues.</p>		<p>Key Behaviors Have high standards, set themselves challenges, display enthusiasm and put in an extra effort. They are purposeful, competent and resilient and often initiate changes and improvements. Very high scorers may find it hard to achieve a work/life balance.</p>	
MODERATE SCORERS			
<p>Focus on achieving a balance between work and leisure.</p> <p>Display achievement drive when it is something they want.</p> <p>Are moderately ambitious and achieving.</p>			
CORRELATIONS		POSITIVE	NEGATIVE
		Competent Proactive Energetic	Modest

Proactive

LOW SCORERS		HIGH SCORERS	
<p>Description Tend to procrastinate and need a push to get started.</p>		<p>Description Get down to work quickly and initiate changes.</p>	
<p>Typical Item I have postponed decisions.</p>		<p>Typical Item I have got down to work at once.</p>	
<p>Key Behaviors Tend to put things off and postpone making decisions. They lack purpose and direction and find it hard to get down to work. They need to be pushed to complete things.</p>		<p>Key Behaviors Start tasks right away, have a sense of purpose and direction, develop and carry out plans. They like to be active and initiate changes and improvements to make things better.</p>	
MODERATE SCORERS			
<p>Display initiative in some areas but not others.</p> <p>Show as much initiative as the average person.</p> <p>Are reasonably proactive.</p>			
CORRELATIONS		POSITIVE	NEGATIVE
		<p>Achieving Competent Energetic</p>	<p>Modest Imaginative</p>

Relaxed

LOW SCORERS		HIGH SCORERS	
<p>Description Are prone to worry and find it difficult to unwind.</p>		<p>Description Are calm and relaxed.</p>	
<p>Typical Item I have got stressed out easily.</p>		<p>Typical Item I have been relaxed about things.</p>	
<p>Key Behaviors Feel tense and anxious, they fear the worst and get stressed out easily. They find it hard to relax and unwind. Worrying about what could go wrong and how to react may lead them to identify possible problems and solutions that a more laid-back person might miss.</p>		<p>Key Behaviors Generally feel calm and contented, they have few worries. They are calm before important occasions and handle pressure and stress. Very high scorers may be perceived by others as lacking motivation or interest.</p>	
MODERATE SCORERS			
<p>Show concern about important things but maintain the ability to relax and unwind.</p> <p>Are as calm and relaxed as the average person.</p> <p>Are moderately calm and relaxed.</p>			
CORRELATIONS	POSITIVE		NEGATIVE
	<p>Contented Resilient Self-Assured</p>		<p>Imaginative Modest</p>

Contented

LOW SCORERS		HIGH SCORERS	
<p>Description Are prone to feeling depressed and pessimistic about the future.</p>		<p>Description Feel comfortable with their lives and positive about the future.</p>	
<p>Typical Item I have felt depressed.</p>		<p>Typical Item I have been happy with my life.</p>	
<p>Key Behaviors Feel depressed and are unhappy with themselves. They have frequent mood swings and tend to have a pessimistic outlook. They are prone to worry about things and lack self-confidence.</p>		<p>Key Behaviors Feel comfortable with themselves and happy with their lives. They feel positive about the future and look on the bright side. They are generally relaxed, resilient and self-confident.</p>	
MODERATE SCORERS			
<p>Are as comfortable with themselves as the average person.</p> <p>Feel depressed/low as often as the next person.</p> <p>Are fairly content with their lives.</p>			
CORRELATIONS	POSITIVE		NEGATIVE
	<p>Relaxed Resilient Self-Assured</p>		<p>Imaginative Modest</p>

Self-Assured

LOW SCORERS		HIGH SCORERS	
<p>Description Are shy and suffer social anxiety.</p>		<p>Description Handle new people and new situations with confidence.</p>	
<p>Typical Item I have been afraid to draw attention to myself.</p>		<p>Typical Item I have been comfortable in unfamiliar situations.</p>	
<p>Key Behaviors Feel awkward and self-conscious. They find it difficult to approach people and are afraid of drawing attention to themselves. They feel awkward meeting new people and dislike social situations.</p>		<p>Key Behaviors Feel at ease meeting new people and are confident of their ability to handle unfamiliar situations. They are able to stand up for themselves and are comfortable with bosses. They display resilience and are more extravert.</p>	
MODERATE SCORERS			
<p>Are confident in some situations but not others.</p> <p>Are as self-confident as the average person.</p> <p>Feel fairly self-confident.</p>			
CORRELATIONS		POSITIVE	NEGATIVE
		<p>Friendly</p> <p>Assertive</p> <p>Contented</p>	<p>Modest</p>

Resilient

LOW SCORERS		HIGH SCORERS	
<p>Description Feel unable to cope with stress.</p>		<p>Description Remain calm under pressure and overcome setbacks.</p>	
<p>Typical Item I have felt unable to deal with things.</p>		<p>Typical Item I have remained calm under pressure.</p>	
<p>Key Behaviors Get easily stressed and feel unable to deal with things. They tend to panic in emergencies and are unable to make up their minds.</p>		<p>Key Behaviors Remain calm under pressure and know how to cope when things go wrong. They control their emotions and feelings and readily overcome setbacks. They display confidence and competence.</p>	
MODERATE SCORERS			
<p>Usually handle stressful situations but occasionally get panicked.</p> <p>Handle pressure and stress as well as the next person.</p> <p>Are moderately resilient.</p>			
CORRELATIONS	POSITIVE		NEGATIVE
	<p>Relaxed Contented Competent</p>		<p>Modest Imaginative</p>

4. Norms

4.1 Overview

The comparison group was created from an international sample of over 40,000 persons who completed the online assessment at myskillsprofile.com. This incidental sample included people who had taken the test as individual customers, and people who had taken the test as part of corporate selection and development initiatives.

Respondents aged under 16 or over 65 were deleted from the sample. Duplicate cases and cases with missing personal data were also identified and deleted. A data set of 25,000 cases was then created from two equally-sized gender data sets. The cases for the gender data sets were selected randomly using SPSS.

4.2 Age

The age distribution of the sample is shown in Table 3. About 40 percent of respondents were aged 16-25, about 30% were aged 26-35, and about 10% were aged 46-55. Only 2% of respondents were in the older 55+ age range. The mean age of the sample was 30.2 with a standard deviation of 10.5.

Table 3. Age and Gender Distribution of Norm Group (N=25,000)

Age Band	Male	Female	Total
16-25	4,618	5,699	10,317
	18.47%	22.80%	41.27%
26-35	4,212	3,493	7,705
	16.85%	13.97%	30.82%
36-45	2,259	2,055	4,314
	9.04%	8.22%	17.26%
46-55	1,161	1,065	2,226
	4.64%	4.26%	8.90%
56-65	250	188	438
	1.00%	0.75%	1.75%
Total	12,500	12,500	25,000
	50.00%	50.00%	100.00%

4.3 Country of origin

We did not collect data about country of origin and ethnicity routinely. In order to provide an indication of the likely ethnic and nationality mix of the standardization group, we invited respondents to provide further information about these characteristics over a limited time period. About half of a sample of just over 3,000 respondents volunteered this information. Table 4 gives the country distribution of the sample—over 90 percent of respondents came from the United States, the United Kingdom, Canada, and Australia. About half the sample was from the United States, one fifth from the United Kingdom, and one tenth from Australia.

Table 4. Country of Origin of Respondents (N=1,519)

Country	Male	Female	Total
United States	241	506	747
	15.87%	33.31%	49.18%
United Kingdom	152	210	362
	10.01%	13.82%	23.83%
Australia	63	104	167
	4.15%	6.85%	10.99%
Canada	43	82	125
	2.83%	5.40%	8.23%
Rest of the World	59	59	118
	3.88%	3.88%	7.77%
Total	558	961	1,519
	36.73%	63.27%	100.00%

4.4 Ethnic Origin

Table 5 shows the distribution by race and ethnicity. Seventy five percent described themselves as White, 4 percent said they were Asian, 8 percent reported that they were Black, and 5 percent said they were Spanish/Hispanic/Latino.

4.5 Industry Sectors

Table 6 shows the top twenty five sectors represented in the international comparison group. The largest group was education making up about 15 percent of the sample.

Table 7 provides norms for the WPS scales using the Standard Ten (Sten) scoring approach

Table 5. Ethnic Origin of Respondents (N=1,513)

Ethnic Origin	Male	Female	Total
Asian	30	33	63
	1.98%	2.18%	4.16%
Black	37	81	118
	2.45%	5.35%	7.80%
Chinese	4	4	8
	0.26%	0.26%	0.53%
Mixed	18	42	60
	1.19%	2.78%	3.97%
Other	19	28	47
	1.26%	1.85%	3.11%
Hispanic or Latino	28	48	76
	1.85%	3.17%	5.02%
White	417	724	1141
	27.56%	47.85%	75.41%
Total	553	960	1,513
	36.55%	63.45%	100.00%

Table 6. Industry Sectors in WPS General Population Norm Group (N=25,000)

Sector	Frequency	Percent
Education	589	14.15
Computers/software	245	5.89
Other services	233	5.60
Advertising/marketing	209	5.02
Consulting	189	4.54
Health services	176	4.23
Arts/culture	173	4.16
Computer-related services	166	3.99
Engineering	147	3.53
Government	140	3.36
Accounting	119	2.86
Sales and marketing	106	2.55

Table 7. WPS General Population Norms (N=25,000)

Scale	1	2	3	4	5	6	7	8	9	10	Mean	SD
Friendly	0-7	8-11	12-15	16-18	19-21	22-25	26-27	28-30	31	32	20.94	6.12
Outgoing	0-6	7-9	10-12	13-15	16-18	19-21	22-24	25-26	27-28	29-31	17.75	5.78
Assertive	0-7	8-10	11-14	15-17	18-19	20-22	23-24	25-26	27-28	29-32	18.86	5.20
Energetic	0-10	11-12	13-15	16-17	18-20	21-22	23-24	25-26	27-28	29-31	19.55	4.74
Trusting	0-7	8-11	12-15	16-18	19-21	22-23	24-25	26-28	29-30	31-32	20.08	5.57
Straightforward	0-12	13-15	16-17	18-20	21-22	23-24	25-26	27-28	29-30	31-32	21.74	4.55
Considerate	0-12	13-15	16-18	19-20	21-23	24-25	26-27	28	29-30	31-32	22.19	4.50
Unassuming	0-6	7-8	9-11	12-14	15-16	17-18	19-21	22-23	24-26	27-31	15.91	4.98
Imaginative	0-10	11-13	14-15	16-17	18-19	20-21	22-24	25-26	27-28	29-32	19.14	4.41
Innovative	0-10	11-12	13-15	16-17	18-20	21-23	24-25	26-28	29-30	31-32	20.09	5.14
Rule-Breaking	0-5	6-7	8-9	10-12	13-14	15-16	17-19	20-21	22-24	25-30	13.94	4.68
Adaptable	0-9	10-12	13-15	16-18	19-20	21-23	24-25	26-27	28-29	30-32	20.04	4.94
Competent	0-12	13-15	16-18	19-21	22-23	24-25	26-27	28-29	30	31-32	22.58	4.68
Organized	0-10	11-13	14-16	17-18	19-21	22-24	25-26	27-28	29-30	31-32	20.79	5.10
Achieving	0-10	11-14	15-17	18-21	22-24	25-27	28-29	30	31	32	23.05	5.60
Proactive	0-8	9-11	12-14	15-17	18-21	22-23	24-26	27-28	29-30	31-32	20.05	5.69
Relaxed	0-5	6-8	9-12	13-16	17-19	20-22	23-24	25-27	28-29	30-32	18.25	5.98
Contented	0-6	7-10	11-14	15-18	19-22	23-25	26-28	29-30	31	32	21.01	6.74
Self-Assured	0-6	7-10	11-13	14-17	18-20	21-23	24-25	26-28	29-30	31-32	19.40	5.94
Resilient	0-8	9-11	12-14	15-17	18-21	22-24	25-26	27-29	30-31	32	20.28	5.86
Impression Management	0-29	30-34	35-39	40-45	46-50	51-55	56-60	61-65	66-69	70-80	49.74	10.27

5. Reliability and Validity

5.1 Reliability

Test scores are reliable when they are reproducible and consistent. If a personality questionnaire gives significantly different results when it is taken on different occasions, then it is likely to be unreliable. Because of errors in measurement and human inconsistency, people are not expected to produce precisely the same results on different occasions. The statistical measure describing the relationship between the scores is called the reliability coefficient.

5.2 Internal Consistency

Table 8 presents internal consistency estimates based on Cronbach's Coefficient Alpha together with raw and sten score score SEMs. The scale reliabilities range from from 0.70 to 0.86. Overall, the WPS has good internal consistency reliability with a median scale reliability of 0.79.

Table 8. Internal Consistency Reliabilities for WPS (N=25,000)

Scale	Alpha	Mean	SD	Raw Score SEM	Sten Score SEM
Friendly	0.84	20.94	6.12	2.45	0.82
Gregarious	0.79	17.75	5.78	2.65	0.92
Assertive	0.75	18.86	5.2	2.60	0.97
Energetic	0.71	19.55	4.74	2.55	1.06
Trusting	0.85	20.08	5.57	2.16	0.76
Straightforward	0.74	21.74	4.55	2.32	1.01
Considerate	0.79	22.19	4.5	2.06	0.91
Modest	0.71	15.91	4.98	2.68	1.03
Imaginative	0.70	19.14	4.41	2.42	1.05
Innovative	0.84	20.09	5.14	2.06	0.75
Rule-Breaking	0.71	13.94	4.68	2.52	1.02
Adaptable	0.79	20.04	4.94	2.26	0.90
Competent	0.76	22.58	4.68	2.29	0.99
Organized	0.74	20.79	5.1	2.60	0.98
Achieving	0.82	23.05	5.6	2.38	0.93
Proactive	0.81	20.05	5.69	2.48	0.88
Relaxed	0.78	18.25	5.98	2.80	0.97
Contented	0.86	21.01	6.74	2.52	0.81
Self-Assured	0.79	19.4	5.94	2.72	0.90
Resilient	0.82	20.28	5.86	2.49	0.83
Median	0.79	20.07	5.17	2.48	0.93

The WPS trait scale SEMs range from 2.06 to 2.80 with a median SEM of 2.48. This is equivalent to a Sten score SEM of approximately 1. This indicates that there is a 68% likelihood that the person's true score on one of the trait scales will be situated one Sten either side of the observed score.

5.3 Retest Stability

Test-retest reliability measures score consistency over time. Table 9 gives information on the reliability of the WPS. This information is based on 56 respondents who completed the questionnaire with a month in between each administration. The reliability of all the scales is above 0.70 and comparable with the internal consistency estimates. The median test-retest reliability is 0.81 with a range of 0.73 to 0.91.

Table 9. Test-Retest Reliability (N=56)

Scale	Mean	SD	Mean	SD	Reliability
Friendly	5.71	1.88	6.02	1.77	0.81
Gregarious	5.55	2.22	5.54	2.17	0.87
Assertive	5.84	1.92	5.98	1.69	0.74
Energetic	5.38	2.35	5.79	2.24	0.91
Trusting	5.59	1.76	5.79	1.88	0.76
Straightforward	5.59	2.15	5.96	2.11	0.74
Considerate	5.63	2.01	5.71	1.90	0.73
Modest	5.41	1.83	5.91	1.86	0.74
Imaginative	5.52	2.05	5.29	2.40	0.73
Innovative	5.71	1.84	5.80	1.78	0.77
Rule-Breaking	5.77	1.68	5.66	1.94	0.76
Adaptable	5.80	1.84	5.82	1.95	0.83
Competent	5.80	2.05	6.02	1.98	0.87
Organized	5.91	1.85	5.95	1.78	0.81
Achieving	5.98	2.20	6.32	2.18	0.84
Proactive	5.75	2.05	6.05	2.00	0.88
Relaxed	5.45	1.65	6.04	1.85	0.79
Contented	5.59	2.15	6.02	2.00	0.87
Self-Assured	5.63	1.88	5.71	1.72	0.84
Resilient	5.50	1.95	5.73	2.00	0.82
Median	5.63	1.94	5.87	1.95	0.81

5.4 Scale Intercorrelations

Table 10 shows the intercorrelations of the WPS scales. The correlations range from -0.53 to 0.80 with a median correlation of 0.34. Four out of ten correlations fall between -0.3 and 0.3, and three quarters fall between -0.5 and 0.5.

In order to determine how well a personality questionnaire differentiates between the different dimensions it is designed to measure, it is necessary to correct the correlations for unreliability. A correlation needs to be divided by the square root of the product of the two variables' reliability to determine what the correlation between the two variables would be if the variables' reliabilities were perfect. If two scales share less than 50% reliable variance, then we can be reasonably certain that they are independent. Eighty four percent of the scale pairs share less than 50% common variance, and 54% share less than 25% common variance.

5.5 Standard Error of Difference

The Standard Error of Difference (SEd) helps us determine the size of the gap that you need to see between a person's scores on any two scales before you can conclude that the difference is real. The SEd depends on the reliability of the scales – the higher the reliability the smaller the SEd is. If there are two full SEds between the scores on two scales, then there is a 95% likelihood that there is a real difference. The SEds range from 1.07 to 1.49 with a median of 1.32. This means that you need to see a difference of 3 Stens or more before you can infer that the candidate has more of one trait than the other – for example, John has more extravert tendencies than agreeable ones.

5.6 Factor Analysis

Exploratory Factor Analysis (EFA) was carried out following best practice identified by Costello and Osborne (2005). Maximum likelihood extraction with orthogonal and oblique rotations was carried out using SPSS on the WPS scales with 25,000 respondents from the standardization sample.

The graph of the eigenvalues (Figure 4) indicates that there are five data points above the break point in the data where the curve flattens out. We ran multiple analyses varying the number of factors and varying the rotation methods. The Kaiser-Meyer-Olkin measure of sampling adequacy for these solutions was 0.92, well above 0.6 required for a sound analysis. Median communality values for the three solutions were 0.65, 0.7, and 0.72.

Table 11 shows loadings of the scales on the factors for four, five, and six-factor solutions using oblique rotation. A five-factor solution accounting for 65 percent of the variance has the "cleanest" factor structure judged by the strength of loadings and the number of cross-loadings on each factor--that is, item loadings of at least 0.32 (10 percent overlapping variance), few item cross-loadings, and no factors with fewer than three items.

Factor 1. Six scales load positively on this factor in the following order: Achieving, Proactive, Energetic, Competent, Organized, Innovative, and Assertive. This factor provides a measure of the Conscientiousness factor.

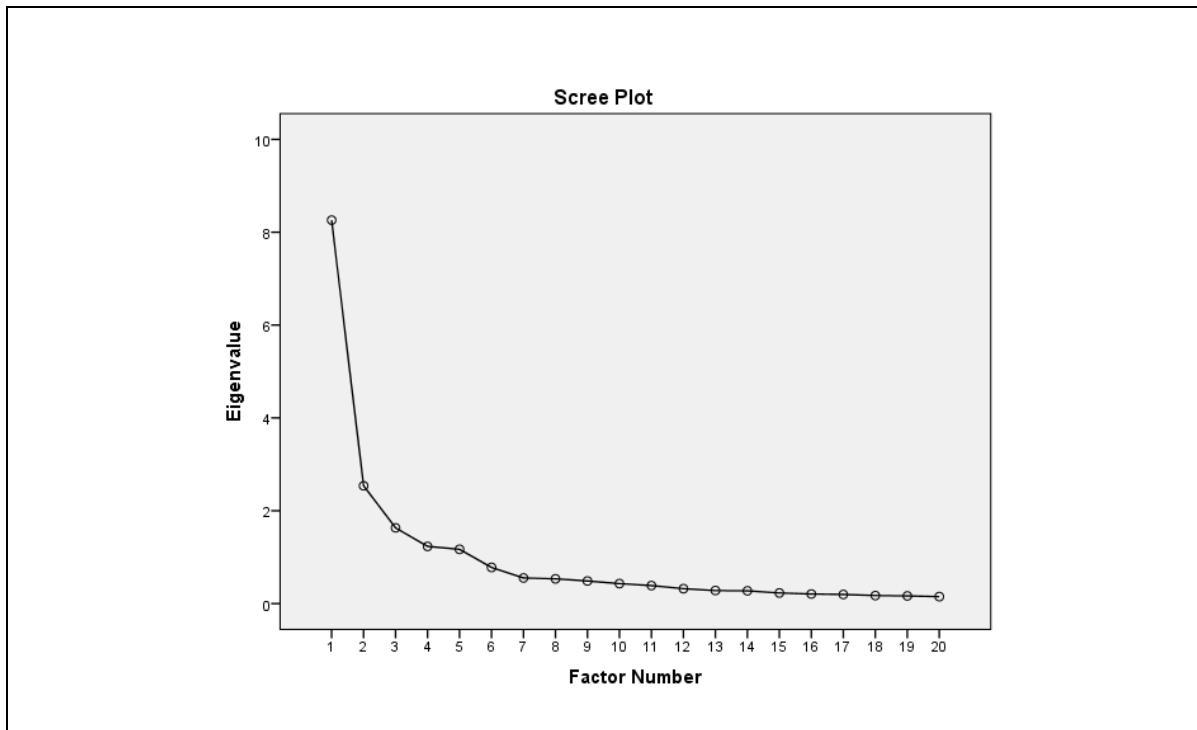
Factor 2. Five factors load negatively on this factor in the following order: Friendly, Outgoing, Self-Assured, Considerate, and Assertive. This factor provides a measure of the Extraversion factor.

Factor 3. Four scales load negatively on this factor: Considerate, Straightforward, Modest, and Trusting. Two scales load positively: Assertive and Rule-Breaking. This factor provides a measure of the Agreeableness factor.

Factor 4. Six scales load negatively on this factor: Relaxed, Resilient, Contented, Self-Assured, Trusting, and Adaptable. This factor measures the Neuroticism factor.

Factor 5. Four scales load positively on this factor: Rule-Breaking, Imaginative, Innovative, and Adaptable. The scale labeled Organized loads negatively on this factor. This factor provides a measure of the Openness factor (which in the WPS is influenced by Kirton's theory of thinking style).

Figure 4. Scree Plot for Maximum Likelihood Extraction



The overall factor structure of the WPS scales is similar to the factor structure of the NEO-PI-R scales reported by Costa & McCrae (1992).

General Factor of Personality (GFP). EFA was also conducted to assess whether there was evidence for a general factor of personality (The Big One) within the WPS five-factor model. Our initial analyses pointed to the presence of two factors with the first factor characterized by high versus low Extraversion, Agreeableness, Conscientiousness, and Emotional Stability; and, the second factor characterized by high versus low Openness.

However, further investigation revealed that when the Rule-Breaking scale score was removed from the Openness factor score, the extraction produced a single factor solution with all five factors loading on the Big One. This provides support for Musek's (2007) description of the Big One as a basic personality disposition associated with social desirability, emotionality, motivation, well-being, satisfaction with life, and self-esteem.

Table 10. Intercorrelations of WPS scales (N=25,000)

Scale	Friendly	Gregarious	Assertive	Energetic	Trusting	Straightforward	Considerate	Modest	Imaginative	Innovative	Rule-Breaking	Adaptable	Competent	Organized	Achieving	Proactive	Relaxed	Contented	Self-Assured	Resilient
Friendly	1.00	0.74	0.56	0.43	0.52	0.21	0.59	-0.26	-0.08	0.40	-0.01	0.42	0.47	0.18	0.44	0.42	0.53	0.57	0.75	0.44
Gregarious		1.00	0.52	0.39	0.37	0.10	0.40	-0.29	-0.07	0.33	0.03	0.36	0.30	0.08	0.31	0.29	0.34	0.43	0.62	0.30
Assertive			1.00	0.51	0.26	-0.02	0.22	-0.53	0.05	0.62	0.32	0.46	0.54	0.14	0.52	0.46	0.42	0.45	0.71	0.45
Energetic				1.00	0.26	0.19	0.28	-0.19	-0.16	0.55	0.04	0.47	0.62	0.35	0.68	0.69	0.31	0.45	0.50	0.49
Trusting					1.00	0.36	0.51	-0.10	-0.07	0.28	-0.11	0.31	0.39	0.16	0.37	0.34	0.51	0.55	0.46	0.42
Straightforward						1.00	0.44	0.23	-0.13	0.11	-0.35	0.19	0.30	0.27	0.28	0.31	0.22	0.29	0.15	0.28
Considerate							1.00	0.06	-0.01	0.24	-0.21	0.28	0.41	0.21	0.40	0.34	0.32	0.37	0.38	0.28
Modest								1.00	-0.14	-0.31	-0.27	-0.20	-0.22	0.02	-0.22	-0.13	-0.20	-0.24	-0.39	-0.16
Imaginative									1.00	0.15	0.35	0.10	-0.10	-0.31	-0.08	-0.27	-0.13	-0.21	-0.08	-0.19
Innovative										1.00	0.35	0.68	0.57	0.16	0.55	0.55	0.43	0.47	0.55	0.54
Rule-Breaking											1.00	0.30	-0.04	-0.36	-0.03	-0.10	0.07	-0.07	0.15	0.04
Adaptable												1.00	0.43	0.10	0.43	0.44	0.46	0.46	0.53	0.53
Competent													1.00	0.43	0.80	0.74	0.50	0.59	0.58	0.63
Organized														1.00	0.41	0.55	0.17	0.31	0.20	0.32
Achieving															1.00	0.75	0.40	0.53	0.52	0.53
Proactive																1.00	0.46	0.59	0.53	0.62
Relaxed																	1.00	0.77	0.65	0.77
Contented																		1.00	0.66	0.76
Self-Assured																			1.00	0.62
Resilient																				1.00

5.7 Relationship to Other Measures

In order to assess whether the WPS measures the Big-Five, we included marker variables in the test development questionnaire. These markers were taken from the International Personality Item Pool (2001) scales developed to measure constructs similar to those in the NEO PI-R (Goldberg, 1999). Table 12 shows the relationships between these marker variables and the WPS scales. The correlations between the WPS scales and the marker variables are in the range of 0.74 to 0.86 with a median correlation of 0.80 suggesting that the WPS trait scales are measuring similar constructs to the NEO PI-R facet scales.

It was not possible to include marker variables for the Innovative and Rule-Breaking scales because there are no obvious corresponding scales in the NEO PI-R. These two scales correlate strongly with scales in the KAI (Kirton, 1994). The Kirton Adaptation-Innovation Inventory (KAI) is a 32 item questionnaire which provides a measure of creative style (Kirton, 1977). The KAI places people on a single global dimension where one end of the dimension represents 'innovators', and the other end represents 'adaptors'.

The KAI has 3 subscales: Originality, Efficiency, and Conformity. A cut-down version of the WPS which included the items from the Innovative and Rule-Breaking scales was administered to a sample of 126 managers and professionals spanning 28 nationalities attending an executive program at Manchester Business School. The Innovative and Rule-Breaking scales correlated 0.67 and -0.58 with the KA Originality and Conformity Scales.

5.8 Criterion-Related Validity

Table 13 shows the correlations between WPS scale scores and job appraisal ratings. This is based on a sample of approximately 1,500 respondents who completed the WPS on the Internet and volunteered information about job performance ratings. Respondents were asked to report how their manager assessed their performance at their last performance appraisal using a 4-point scale (excellent, good, satisfactory, poor), and to assess their own performance. Combined ratings shown in the table are based on correlations between scale scores and the sum of the manager's assessment and the test taker's self-assessment.

The correlations between the trait scales and self-assessed job performance range from -0.14 to 0.48 with a median of 0.28. All the correlations are statistically significant and three are negative: Rule-Breaking, Modest, and Imaginative. The strongest correlations exceeding 0.40 are with three scales in the Conscientiousness factor: Competent, Proactive, and Achieving. The range and pattern of correlations are very similar whether self-assessments, reported management ratings or the combined ratings are used although the correlations are slightly lower in the case of the management ratings and here one of the correlations (with the scale Modest) does not reach statistical significance.

Table 11. Rotated Pattern Matrix for Four, Five and Six-Factor Solutions (N=25,000)

Scale	4-Factor				5-Factor					6-Factor					
	F1	F2	F3	F4	F1	F2	F3	F4	F5	F1	F2	F3	F4	F5	F6
Friendly	0.00	-0.89	0.00	0.00	0.00	-0.85	0.00	0.00	0.00	0.00	-0.83	0.00	0.00	0.00	0.00
Outgoing	0.00	-0.81	0.00	0.00	0.00	-0.82	0.00	0.00	0.00	0.00	-0.87	0.00	0.00	0.00	0.00
Assertive	0.00	-0.35	0.48	0.40	0.40	-0.44	0.36	0.00	0.00	0.00	-0.35	0.00	0.35	0.00	-0.48
Energetic	0.00	0.00	0.00	0.76	0.76	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.64	0.00	0.00
Trusting	0.37	-0.37	0.00	0.00	0.00	0.00	-0.35	-0.37	0.00	0.42	0.00	0.00	0.00	0.00	0.00
Straightforward	0.00	0.00	-0.45	0.00	0.00	0.00	-0.55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.53
Considerate	0.00	-0.56	0.00	0.00	0.00	-0.47	-0.61	0.00	0.00	0.00	-0.50	0.00	0.00	0.00	0.43
Modest	0.00	0.00	-0.46	0.00	0.00	0.00	-0.46	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.60
Imaginative	0.00	0.00	0.41	0.00	0.00	0.00	0.00	0.00	0.59	0.00	0.00	0.00	0.00	0.57	0.00
Innovative	0.00	0.00	0.44	0.54	0.54	0.00	0.00	0.00	0.48	0.00	0.00	0.56	0.37	0.00	0.00
Rule-Breaking	0.00	0.00	0.77	0.00	0.00	0.00	0.35	0.00	0.62	0.00	0.00	0.49	0.00	0.00	-0.33
Adaptable	0.33	0.00	0.32	0.00	0.00	0.00	0.00	-0.32	0.45	0.00	0.00	0.67	0.00	0.00	0.00
Competent	0.00	0.00	0.00	0.73	0.73	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.79	0.00	0.00
Organized	0.00	0.00	-0.37	0.55	0.56	0.00	0.00	0.00	-0.38	0.00	0.00	0.00	0.56	0.00	0.00
Achieving	0.00	0.00	0.00	0.84	0.83	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.87	0.00	0.00
Proactive	0.00	0.00	0.00	0.79	0.80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.73	0.00	0.00
Relaxed	0.96	0.00	0.00	0.00	0.00	0.00	0.00	-0.95	0.00	0.97	0.00	0.00	0.00	0.00	0.00
Contented	0.73	0.00	0.00	0.00	0.00	0.00	0.00	-0.74	0.00	0.74	0.00	0.00	0.00	0.00	0.00
Self-Assured	0.37	-0.50	0.00	0.00	0.00	-0.54	0.00	-0.38	0.00	0.38	-0.49	0.00	0.00	0.00	0.00
Resilient	0.80	0.00	0.00	0.00	0.00	0.00	0.00	-0.80	0.00	0.76	0.00	0.00	0.00	0.00	0.00

Items loading below 0.32 are replaced with zeros. Main factor loadings are in **bold**. Secondary factor loadings are in **bold italic**.

Table 12. Correlations between Selected WPS scales and IPIP NEO-PI-R Markers (N=1,393)

Scale	E1: Friendliness	E2: Gregariousness	E3: Assertiveness	E4: Activity Level	A1: Trust	A2: Morality	A3: Altruism	A5: Modesty	O1: Imagination	O4: Adventurousness	C1: Self-efficacy	C2: Orderliness	C4: Achievement	C5: Self-Discipline	N1: Anxiety	S3: Depression	N4: Self-consciousness	N6: Vulnerability
Friendly	.84**	.52**	.41**	.25**	.40**	.10**	.22**	-.32**	.04	.28**	.29**	.05*	.27**	.30**	-.46**	-.46**	-.40**	-.33**
Gregarious	.60**	.74**	.33**	.24**	.29**	.04	.12**	-.30**	.05	.27**	.14**	-.02	.17**	.16**	-.30**	-.32**	-.32**	-.19**
Assertive	.37**	.34**	.81**	.37**	.18**	-.11**	.09**	-.50**	.09**	.38**	.32**	.06*	.37**	.32**	-.30**	-.43**	-.63**	-.33**
Energetic	.31**	.29**	.53**	.77**	.21**	.08**	.18**	-.25**	-.01	.37**	.45**	.19**	.57**	.54**	-.23**	-.39**	-.40**	-.38**
Trusting	.34**	.32**	.25**	.24**	.86**	.23**	.28**	-.23**	.05	.30**	.36**	.03	.32**	.31**	-.44**	-.42**	-.31**	-.38**
Straightforward	.09**	.11**	.01	.16**	.28**	.76**	.27**	.04	-.05	.10**	.28**	.14**	.30**	.24**	-.15**	-.23**	-.10**	-.20**
Considerate	.39**	.35**	.18**	.17**	.42**	.39**	.78**	-.06*	.11**	.18**	.33**	.16**	.35**	.29**	-.23**	-.25**	-.14**	-.26**
Modest	-.19**	-.13**	-.38**	-.19**	-.07**	.25**	.03	.80**	-.10**	-.24**	-.13**	.05	-.12**	-.12**	.19**	.31**	.38**	.17**
Imaginative	-.02	-.08**	.06*	-.07*	.05	-.03	.13**	-.12**	.79**	.22**	-.03	-.12**	.03	-.12**	.02	.06*	.03	.05
Adaptable	.26**	.24**	.44**	.34**	.29**	.07**	.17**	-.26**	.17**	.82**	.32**	.02	.32**	.33**	-.39**	-.41**	-.44**	-.46**
Competent	.26**	.22**	.54**	.46**	.29**	.22**	.25**	-.31**	.06*	.31**	.78**	.27**	.64**	.59**	-.37**	-.54**	-.49**	-.55**
Organized	.07*	.02	.18**	.21**	.10**	.19**	.12**	-.07**	-.13**	-.01	.38**	.79**	.36**	.54**	-.08**	-.22**	-.16**	-.28**
Achieving	.27**	.24**	.53**	.52**	.30**	.19**	.25**	-.28**	.05*	.32**	.57**	.28**	.84**	.59**	-.27**	-.44**	-.40**	-.44**
Proactive	.25**	.24**	.52**	.50**	.27**	.16**	.18**	-.25**	-.08**	.28**	.56**	.31**	.62**	.85**	-.34**	-.49**	-.47**	-.52**
Relaxed	.31**	.25**	.36**	.20**	.36**	.07**	.12**	-.35**	-.02	.33**	.43**	.00	.23**	.36**	-.80**	-.69**	-.59**	-.69**
Contented	.38**	.32**	.39**	.27**	.40**	.15**	.16**	-.43**	-.01	.31**	.45**	.07**	.31**	.42**	-.63**	-.87**	-.58**	-.65**
Self-Assured	.52**	.42**	.61**	.36**	.32**	.01	.14**	-.46**	-.00	.41**	.41**	.07**	.35**	.39**	-.52**	-.62**	-.76**	-.53**
Resilient	.22**	.23**	.45**	.34**	.29**	.10**	.15**	-.29**	-.011	.398**	.51**	.10**	.39**	.47**	-.56**	-.68**	-.60**	-.86**

Note. ** Correlation is significant at the 0.01 level (2-tailed).* Correlation is significant at the 0.05 level (2-tailed).

Table 13. Correlations between WPS Scores and Job Appraisal Ratings

Scale	Self-Assessment (N=1,507)	Managerial Assessment (N=1,413)	Combined (n=1,407)
Friendly	0.27**	0.21**	0.26**
Gregarious	0.18**	0.15**	0.19**
Assertive	0.30**	0.22**	0.29**
Energetic	0.35**	0.30**	0.36**
Trusting	0.23**	0.18**	0.22**
Straightforward	0.17**	0.16**	0.19**
Considerate	0.19**	0.21**	0.22**
Modest	-0.12**	-0.02	-0.07*
Imaginative	-0.14**	-0.10**	-0.14**
Innovative	0.31**	0.27**	0.32**
Rule-Breaking	-0.11**	-0.12**	-0.13**
Adaptable	0.18**	0.15**	0.18**
Competent	0.48**	0.42**	0.50**
Organized	0.28**	0.24**	0.29**
Achieving	0.44**	0.39**	0.46**
Proactive	0.45**	0.36**	0.44**
Relaxed	0.28**	0.22**	0.27**
Contented	0.37**	0.27**	0.35**
Self-Assured	0.33**	0.27**	0.33**
Resilient	0.34**	0.28**	0.34**
Median	0.28**	0.22**	0.28**

Note. ** Correlation is significant at the 0.01 level (2-tailed). * Correlation is significant at the 0.05 level (2-tailed).

The range of correlations and the medians are consistent with those reported in the literature—for example, Robertson (1997) notes that even with meta-analytic corrections, the upper limits for the validity of personality variables against overall work performance variables are in the range of 0.25 to 0.4.

Regression analysis was used to help understand the contribution of the different trait scales on job appraisal ratings. A standard multiple regression was performed between managerially and self-assessed job performance combined as the dependent variable and the 20 trait scales as the independent variables. Table 14 displays R, R², adjusted R², the standard error of the estimate, F change and the significance of F change.

The best predictor of job performance was the competence facet accounting for 25% of the variance. Altogether, 27% of the variability in job performance ratings was accounted for by five scales: Competent, Achieving, Adaptable, Contented, and Innovative.

Table 14. Regression of WPS scale scores on Job Performance Ratings (N=1,405)

Predictor Scales	R	R Square	Adjusted R Square	Std. Error of the Estimate	F Change	Sig. F Change
Competent	0.50	0.25	0.25	1.16	467.07	0.00
Competent, Achieving	0.51	0.26	0.26	1.15	26.07	0.00
Competent, Achieving, Adaptable	0.52	0.27	0.26	1.15	6.39	0.01
Competent, Achieving, Adaptable, Contented	0.52	0.27	0.27	1.14	9.62	0.00
Competent, Achieving, Adaptable, Contented, Innovative	0.53	0.28	0.27	1.14	8.50	0.00

6. Group Differences

6.1 Gender and Age

Table 15 shows the differences in factor scores (computed by SPSS Factor) and trait raw scores for men and women. Table 16 shows the correlations between personality and age and Figure 5 depicts the age differences across the five factors for men and women. Although the differences are often small, they do reach statistical significance due to the large sample size.

Many of the differences are consistent with those reported by Srivastava *et al* (2003) where a very large sample of 132,000 respondents was used. As both gender and age differences are small relative to individual variation within genders and ages, it seems wholly appropriate to use combined gender and age norms.

Conscientiousness. Women tended to have slightly higher scores on Conscientiousness. Men and women increased in Conscientiousness with age up to age 55 and the rate of increase was greater at younger ages than older ages. This is consistent with Srivastava *et al* (2003) who ascribe the more pronounced increase in the period up to age 45 to patterns of change in work and partnership.

Emotional stability. Men tended to have slightly higher scores on emotional stability. Men and women increased in emotional stability through adulthood—women more substantially than men. This is consistent with Srivastava *et al* (2003). We also found, like Srivastava *et al*, that the early gender difference narrowed.

Extraversion. Women are more extravert than men. Our data shows younger men and women as more extravert and extraversion decreasing until middle age and then recovering. Srivastava *et al* (2003) found that men increased slightly in extraversion with age whereas women decreased slightly.

Agreeableness. Women tended to score higher on agreeableness which increased with age in men and women but the increase fell away once men reached 50. Srivastava *et al* (2003) found that agreeableness accelerated in the late 20s and continued to increase rapidly through the 30s before slowing down in the 40s. The period of change coincides with the period when people are having families.

Openness to change. Men have higher scores on openness. In men, openness decreased with age up to about age 40 and then increased. In women, openness initially decreased and then recovered up to 55 and then decreased significantly. Srivastava *et al* (2003) found that men and women increased marginally in openness up to age 30 and then decreased.

Figure 5. Big Five factors by Age and Gender

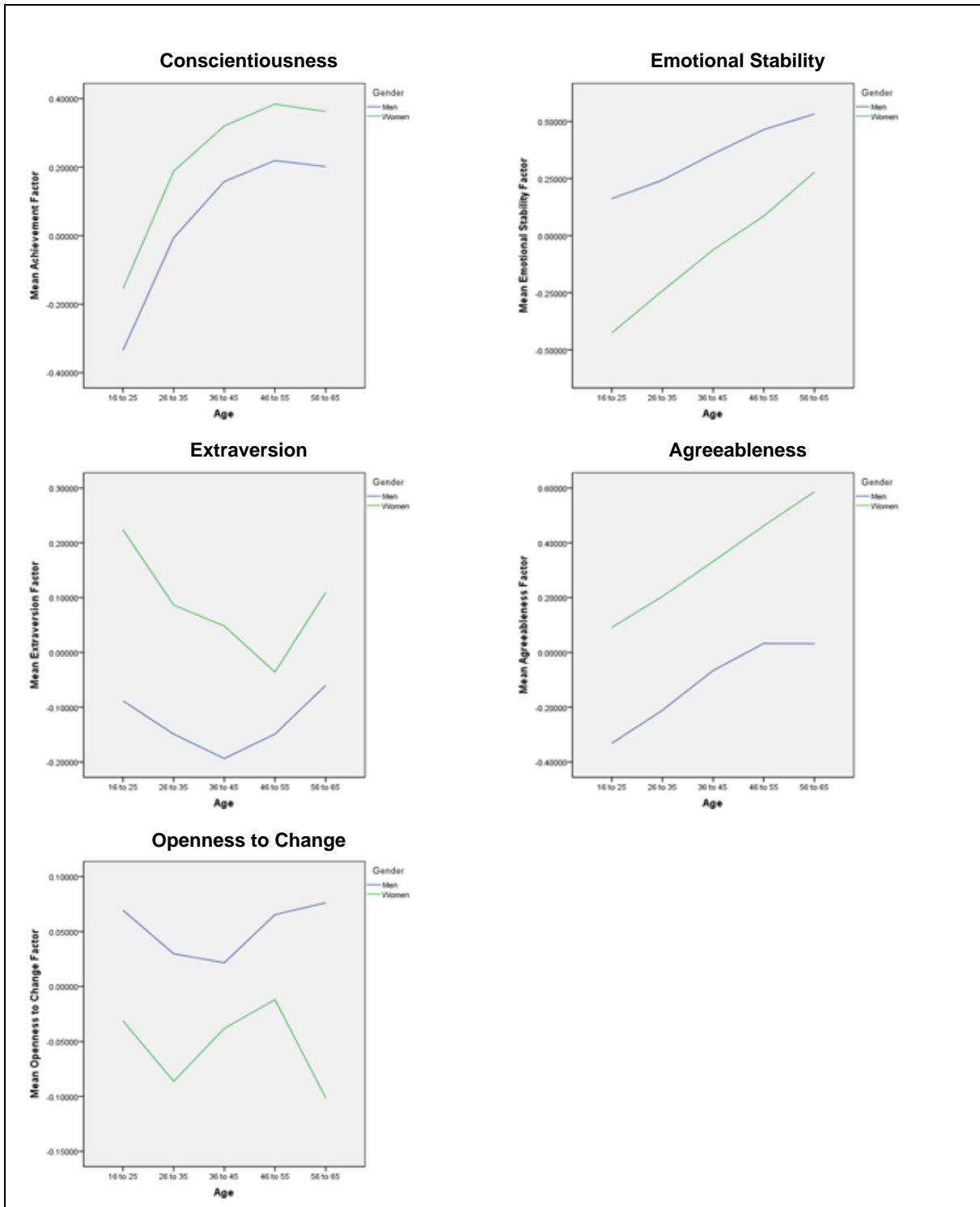


Table 15. Means and standard Deviations of Men and Women (N=25,000)

Scale	Men		Women		Sig.
	Mean	SD	Mean	SD	
Conscientiousness	-0.07	1.02	0.07	0.97	.00
Emotional stability	0.26	0.92	-0.26	1.01	.00
Extraversion	-0.13	1.00	0.13	0.99	.00
Agreeableness	-0.20	1.00	0.20	0.96	.00
Openness to change	0.05	1.00	-0.05	1.00	.00
Friendly	20.52	6.14	21.35	6.07	.00
Gregarious	17.12	5.70	18.39	5.79	.00
Assertive	19.07	5.20	18.65	5.19	.00
Energetic	19.15	4.85	19.94	4.59	.00
Trusting	19.98	5.51	20.19	5.63	.00
Straightforward	21.26	4.66	22.22	4.38	.00
Considerate	21.30	4.54	23.09	4.27	.00
Modest	15.52	5.07	16.31	4.85	.00
Imaginative	19.06	4.41	19.23	4.41	.00
Innovative	20.54	5.18	19.64	5.06	.00
Rule-Breaking	14.69	4.62	13.18	4.61	.00
Adaptable	20.26	4.82	19.82	5.05	.00
Competent	22.38	4.74	22.79	4.61	.00
Organized	20.62	5.03	20.95	5.15	.00
Achieving	22.58	5.75	23.52	5.41	.00
Proactive	19.85	5.73	20.24	5.65	.00
Relaxed	19.25	5.82	17.24	5.97	.00
Contented	21.54	6.60	20.48	6.83	.00
Self-Assured	19.65	5.94	19.15	5.93	.00
Resilient	21.25	5.67	19.31	5.88	.00

N=12,500 men, 12,500 women

Table 16. Correlations of WPS Scores with Age (N=25,000)

Scale	Age	Significance
Conscientiousness	0.21	0.00
Emotional stability	0.17	0.00
Extraversion	-0.07	0.00
Agreeableness	0.12	0.00
Openness to change	-0.01	0.34
Friendly	0.04	0.00
Gregarious	-0.02	0.01
Assertive	0.07	0.00
Energetic	0.21	0.00
Trusting	0.21	0.00
Straightforward	0.21	0.00
Considerate	0.09	0.00
Modest	0.02	0.01
Imaginative	-0.11	0.00
Innovative	0.17	0.00
Rule-Breaking	0.02	0.01
Adaptable	0.12	0.00
Competent	0.19	0.00
Organized	0.12	0.00
Achieving	0.21	0.00
Proactive	0.25	0.00
Relaxed	0.14	0.00
Contented	0.16	0.00
Self-Assured	0.12	0.00
Resilient	0.22	0.00

References

- Baron, H., Bartram, D. & Kurz, R. (2003). The Great 8 as a framework for validation research. In *Occupational Psychology Conference 2003: Book of Proceedings*. Leicester, UK: British Psychological Society.
- Barrick, M. R. & Mount, M. K. (1991). The big five personality dimensions and job performance: a meta-analysis. *Personnel Psychology*, 44, 1-26.
- Bartram, D. (2002). *EFPA Review Model for the Description and Evaluation of Psychological Tests: Notes for Reviewers*. efpa.be: European Federation of Psychologists' Associations.
- Bartram, D., Baron, H. & Kurz, R. (2003). *Let's Turn Validation on its Head*. Paper presented to BPS Occupational Psychology Conference 2003.
- Collins, J. (2001). *Good to Great: Why Some Companies Make the Leap and Others Don't*. New York, NY: Harper Business.
- Costa, P. T., Jr, & McCrae, R. R. (1992). *Revised NEO Personality Inventory (Neo-PI-R) and NEO Five-Factor Inventory (NEO-FFI): Professional Manual*. Odessa, FL: Psychological Assessment Resources.
- Disability Discrimination Act* (1995). London, UK: The Stationary Office.
- Goldberg, L. R. (1992). The development of markers for the Big-Five factor structure. *Psychological Assessment*, 4, 26-42.
- Goleman, D. (1998). *Working With Emotional Intelligence*. New York, NY: Bantam.
- Gosling, S. D., Rentfrow, P. J. & Swann, W. B. Jr (2003). A very brief measure of the Big-Five personality domains. *Journal of Research in Personality*, 37, 504–528.
- Hogan, R., Johnson, J. & Briggs, S. (1997). *Handbook of Personality Psychology*. San Diego, CA: Academic Press.
- Hough, L. M. (1998). Effects of intentional distortion in personality measurement and evaluation of suggested palliatives. *Human Performance*, 11, 209–244.
- International Personality Item Pool (2001). *A Scientific Collaboratory for the Development of Advanced Measures of Personality Traits and Other Individual Differences*. Internet Web Site: <http://ipip.ori.org>.
- Kirton, M. J. (1977). Adaptors and innovators and superior-subordinate identification. *Psychological Reports*, 41, 289-290
- Kirton, M. J. (1994). *Adaptors and Innovators: Styles of Creativity and Problem Solving*. London, UK: Thomson Learning.
- Kirton, M. J. (2002). *Adaption-Innovation in the Context of Diversity and Change*. London, UK: Routledge.

Kurz, R. & Bartram, D. (2002). Competency and individual performance: modelling the world of work. In I.T. Robertson, M. Callinen & D. Bartram (Eds), *Organizational Effectiveness: The Role of Psychology*. Chichester, UK: Wiley.

McCrae, R. R. & Costa, P. T. (1983). Social desirability scales: more substance than style. *Journal of Consulting and Clinical Psychology*, 51, 882–888.

McCrae, R. R., Costa, P. T. Jr, Lima, M. P., Simoes, A., Ostendorf, F., Angleitner, A., Marusic, I., Bratko, D., Caprara, G. V., Barbaranelli, C., Chae, J. H., & Piedmont, R. L. (1999) Age differences in personality across the adult lifespan: parallels in five cultures. *Developmental Psychology*, 35, 466-477.

Musek, J. (2007). A general factor of personality: Evidence for the Big One in the five-factor model. *Journal of Research in Personality*, 41, 6, 1213–1233.

Robertson, I. T., *Personality and Work Behaviour (1997)* Keynote Address to 2nd Australian Industrial and Organizational Psychology Conference.

Saucier, G. & Goldberg, L. R. (2002). Assessing the Big Five: applications of 10 psychometric criteria to the development of marker scales. In B. de Raad & M. Perugini (Eds), *Big Five Assessment*. Goettingen, Germany: Hogrefe & Huber.

Saucier, G. (2002b). Orthogonal markers for orthogonal factors: the case of the Big Five. *Journal of Research in Personality*, 36(1), 1-31.

Schmitt, N., Gooding, R., Noe, R. & Kirsch, M. (1984). Metaanalysis of validity studies published between 1964 and 1982 and the investigation of study characteristics. *Personnel Psychology*, 37, 407-422.

SHL (1999). *OPQ32 Manual and User's Guide*. Surrey, UK: Saville & Holdsworth Ltd Group plc.

Srivastava, S., John, O. P., Gosling, S. D. & Potter, J. (2003). Development of personality in early and middle adulthood: Set like plaster or persistent change? *Journal of Personality and Social Psychology*, 84, 1041-1053.

Tett, R. P., Jackson, D. N. & Rothstein, M. G. (1991). Personality measures as predictors of job performance: a meta-analytic review. *Personnel Psychology*, 44, 703-742.

Thurstone, L. L. (1947). *Multiple Factor Analysis*. Chicago, IL: University of Chicago Press.

Copyright © 2022, MySkillsProfile.com Limited

www.myskillsprofile.com

WPS is a trademark of MySkillsProfile.com Limited.

All rights reserved. No part of this publication may be reproduced or distributed in any form or by any means or stored in a database or retrieval system without the prior written permission of MySkillsProfile.com Limited.