

# Creative Style Questionnaire

> User Manual



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# 1. Introduction

This user manual describes the development, administration, interpretation, and technical properties of the Creative Style Questionnaire (CSQ). It is available as a soft copy download only from MySkillsProfile.

## 1.1 CSQ Model

The CSQ assessment test measures five aspects of an individual's behavioral style that affect how he or she thinks about issues, approaches problems, and generates ideas and solutions. The questionnaire provides an overall score of creative style and scores on five facets of it. The instrument is a behavioral style assessment test, and it does not measure cognitive ability. Figure 1 illustrates the CSQ concept model.

**Figure 1. Dimensions of Creative Style**



## 1.2 Development of the CSQ

The CSQ facet scales emerged from exploratory factor analysis of a prototype inventory that was designed to measure personality traits relevant to an individual's creativity and problem solving style. We were influenced predominantly by research on the facets of the Openness factor in the literature on the Big Five personality factors,

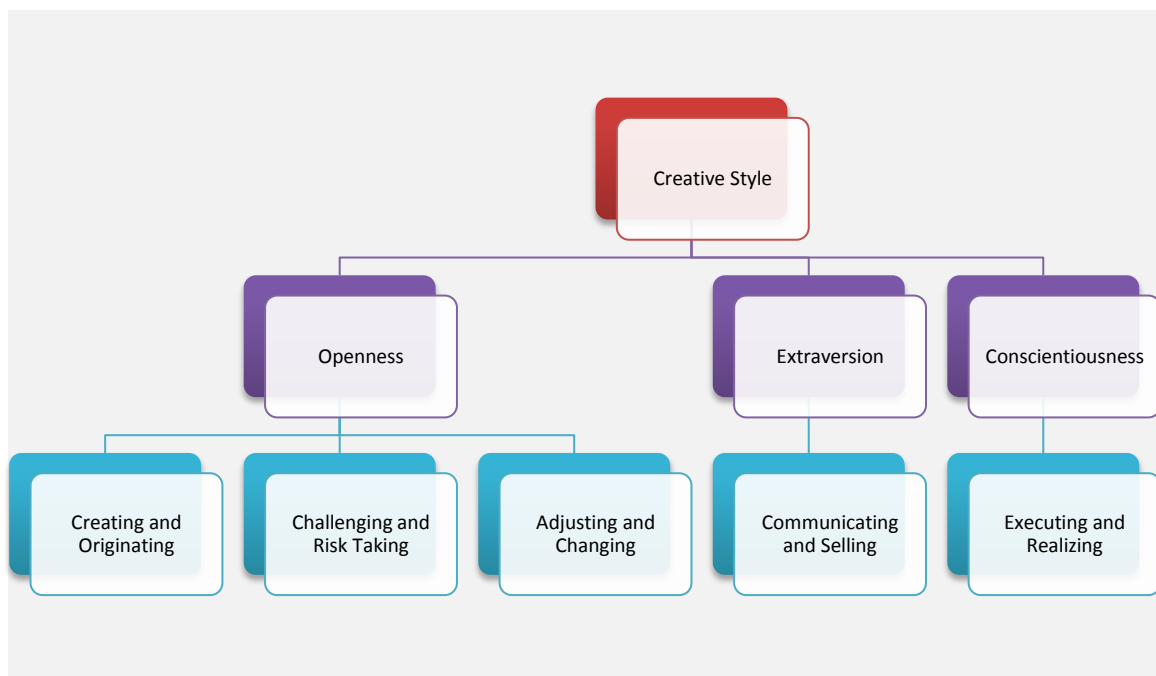
and Kirton's Adaptation-Innovation (AI) framework of cognitive style (for example, Kirton, 2002).

The development of the CSQ can be broken down into four phases.

**Phase 1.** A prototype inventory was developed measuring fifteen personality traits. These covered the Big Five factors of personality. 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 reverse-keyed items.

**Phase 2.** The prototype inventory together with a feedback report was published and advertised as a free online assessment. The reliability of the scales was analyzed, norms were generated, and Exploratory Factor Analysis (EFA) was carried out to examine the factor structure of the inventory. EFA produced a rotated component matrix with five factors with five scales loading on the Openness factor. Two of the scales also loaded on two other factors—Extraversion and Conscientiousness (Figure 2).

**Figure 2. CSQ Creative Style Personality Factor Structure**



**Phase 3.** A second shorter instrument was developed using the five scales that loaded highest on the Openness factor. Some changes were made to items to improve the reliability of the scales. A new feedback report was developed focusing on creative and innovative style. The assessment was published online as a free assessment whilst we carried out further analysis on the reliability and validity of the instrument and created a larger standardization group. The current commercial version of the instrument was published on mySkillsProfile's e-testing platform in 2014.

**Phase 4.** We reviewed the technical properties of the instrument in 2014, updated the user manual, and published a new feedback report with a development guide with practical tips and suggestions for performance improvement.

### 1.3 Comparison with Other Measures

Table 1 shows what the CSQ measures alongside the KAI and two other popular personality inventories: the NEO (Costa and McCrae, 1992) and OPQ32 (SHL, 2009). It is important to note that the CSQ and KAI are short inventories focused on creative and cognitive style. The OPQ32 and NEO are multi-trait personality inventories that have scales that measure innovativeness and openness alongside other areas of the Big Five personality factors. The CSQ, KAI, and OPQ32 are occupational inventories whilst the NEO is also designed for educational and clinical settings. Table 2 defines what the five CSQ scales measure.

**Similarities.** All four instruments have scales that measure an individual's style of idea generation. The relevant scales are: Creating and Originating (CSQ), Originality (KAI), Innovative (OPQ32), and Ideas (NEO). The four instruments also all have scales that measure an individual's willingness to bend rules, challenge the status quo, and take risks. The relevant scales are: Challenging and Risk Taking (CSQ), Conformity (KAI), Rule Following and Conventional (OPQ32), and Values (NEO).

**Table 1. What the CSQ Measures in Comparison to Other Inventories**

Measure	Factor	Scale
CSQ	Creative Style	Creating and Originating Challenging and Risk Taking Adjusting and Changing Communicating and Selling Executing and Realizing
KAI	Cognitive Style	Originality Conformity Efficiency
OPQ32	Thinking Style	Conventional Variety Seeking Rule Following Innovative Independent-Minded Conceptual
NEO	Openness to Experience	Fantasy Aesthetics Feelings Actions Ideas Values

Three of the instruments have scales that measure how individuals adapt and respond to change. The relevant scales are: Adapting and Changing (CSQ), Variety Seeking (OPQ32), and Actions (NEO). Two of the instruments have scales to throw light on the respondent's communication style, independent-mindedness, and assertiveness. The relevant scales are Communicating and Selling (CSQ) and Independent-Minded (OPQ32). Although the KAI does not a specific scale measuring communication style, assertiveness, independent-mindedness and communication style are considered to be important traits in AI theory.

**Differences.** The CSQ has a scale that measures achievement drive (Executing and Realizing), and the KAI has a scale labeled Efficiency. In the OPQ32 and NEO, there are scales that measure these traits outside the Thinking Style/Openness key area. Within the Thinking Style/Openness key area, the OPQ32 has a scale labeled Conceptual that measures an individual's interest in theories and concepts, and the NEO includes scales that measure an individual's artistic, cultural, and emotional style.

**Table 2. CSQ Scale Definitions**

Scale	High Score Meaning
Creating and Originating	Originates change, makes things better, produces creative ideas and solutions
Challenging and Risk Taking	Takes risks, challenges accepted practice, bends rules and regulations
Adjusting and Changing	Keeps up-to-date with developments, tries new approaches, adapts quickly
Communicating and Selling	Expresses views clearly, sells ideas and proposals for change, persuasive
Executing and Realizing	Motivated to push for and implement ideas and proposals for change

### 1.4 Instrument Format

The CSQ has five scales and each scale has ten items making a fifty-item inventory. In each scale, half the items are phrased positively and half are reverse-keyed. Test takers are invited to indicate how frequently they display different behaviors using a five point Likert scale.

Never or almost never	Occasionally	Fairly often	Very often	Always or almost always
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#### Example Item

I have produced original ideas

Chapter 2 gives further examples of positive and reverse-keyed items.

The ability of respondents to fake responses to personality questionnaires is an area of continuing concern and research interest. The CSQ 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.

## **1.5 Quality Criteria**

The CSQ 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.



## 2. Administration

### 2.1 Applications

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

**Selection.** CSQ interpretive reports about a candidate's Creativity and problem solving style provide a structure for interviewers and candidates to discuss a candidate's potential strengths and weaknesses in situations where is deemed to be important. In competency-based selection, the CSQ model provides a framework of personal competencies to compare candidates against, and use as the foundation for a competency-based interview.

**Assessment and development centers.** The CSQ profiles also provide a source of information about a candidate's creative and innovative style and 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 CSQ questionnaire can help in the development of a company's existing staff in individual and group development contexts. The CSQ 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 CSQ profiles can help teams to understand the range of styles within the team, and how these could be deployed in projects. The creation of a CSQ team profile may also reveal gaps in the team's capability and help identify suitable team development activities.

**Coaching and counseling.** CSQ interpretive reports also provide a suitable structure for a coach to explore a client's approach to problem solving, change, and potential development needs.

### 2.2 Test Administration

It is important that people who are asked to take the CSQ 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 CSQ 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 CSQ 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) for each scale. Chapter 6 gives information about the composition of the norm group for the questionnaire.

### **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 CSQ 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 and examples of questionnaire items. The CSQ downloadable guide provides fifty practical ideas and suggestions for performance improvement.

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 CSQ 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.

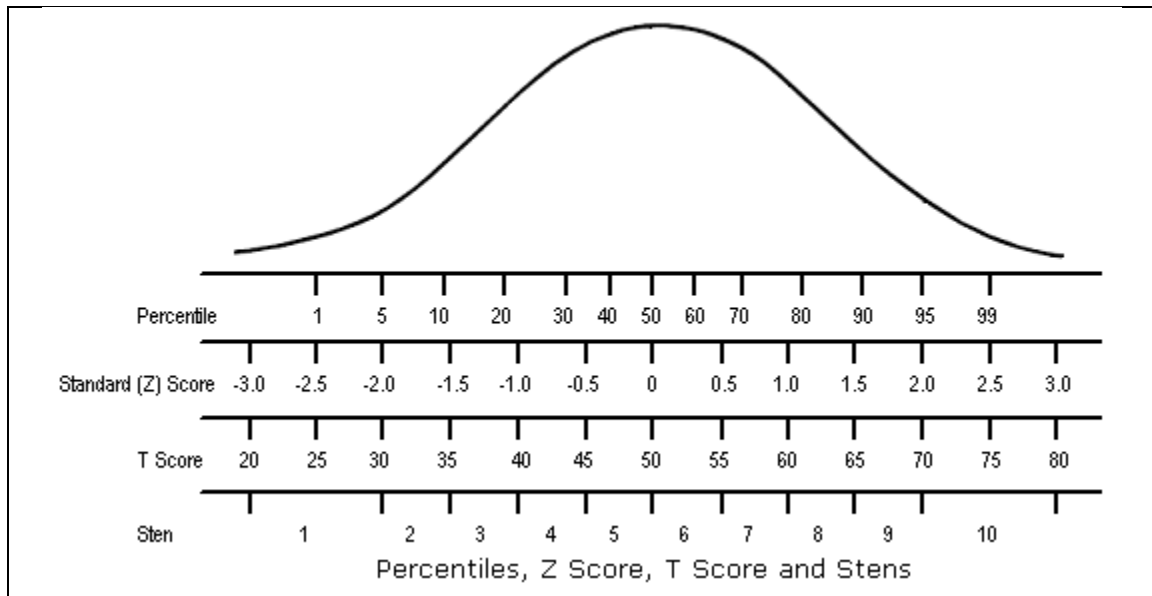
### 3.2 Interpreting Scores

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.

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. Two people who have the same scores on creative style may be different in the behavioral expression of their style.

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



## Creating and Originating

LOW SCORERS	HIGH SCORERS
<p>Description</p> <p>Produce a few practical ideas for doing things better.</p>	<p>Description</p> <p>Produce lots of novel ideas for doing things differently.</p>
<p>Typical Item</p> <p>I have found it hard to see how to improve things.</p>	<p>Typical Item</p> <p>I have produced original ideas.</p>
<p>Key Behaviors</p> <p>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</p> <p>Present themselves as creative and inventive people who bring new perspectives to problems. They like to generate novel ideas about how to do things differently</p>
<p><b>MODERATE SCORERS</b></p>	
<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>	

## Challenging and Risk-Taking

LOW SCORERS	HIGH SCORERS
<p>Description</p> <p>Follow instructions and reduce risks.</p>	<p>Description</p> <p>Prepared to break rules and take risks in order to achieve change.</p>
<p>Typical Item</p> <p>I have respected custom and tradition.</p>	<p>Typical Item</p> <p>I have bent rules and regulations.</p>
<p>Key Behaviors</p> <p>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</p> <p>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>	

## Adjusting and Changing

LOW SCORERS	HIGH SCORERS
<p>Description</p> <p>Prefer stability, continuity, and incremental change.</p>	<p>Description</p> <p>Keep up new developments and the latest thinking.</p>
<p>Typical Item</p> <p>I have preferred stability and continuity.</p>	<p>Typical Item</p> <p>I have kept abreast of the latest developments.</p>
<p>Key Behaviors</p> <p>Support the status quo, tend to be set in their ways, prefer stability and continuity.</p>	<p>Key Behaviors</p> <p>Keep up-to-date with new technology, enjoy trying new ways of working, are curious and imaginative.</p>
<p><b>MODERATE SCORERS</b></p>	
<p>Are as open to new ideas and developments as the average person.</p> <p>Embrace or resist change according to their perception of its benefits.</p> <p>Produce practical or radical ideas according to the needs of the situation.</p>	

## Communicating and Selling

LOW SCORERS	HIGH SCORERS
<p>Description</p> <p>Let others do the talking, prefer to keep in the background.</p>	<p>Description</p> <p>Speak confidently and clearly to individuals and groups, are often chosen to be group leaders.</p>
<p>Typical Item</p> <p>I have kept my opinions to myself.</p>	<p>Typical Item</p> <p>I have communicated my ideas clearly.</p>
<p>Key Behaviors</p> <p>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</p> <p>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>
<p><b>MODERATE SCORERS</b></p>	
<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>	



## Executing and Realizing

LOW SCORERS	HIGH SCORERS
<p>Description</p> <p>Lack ambition and put less effort into their work.</p>	<p>Description</p> <p>Have a clear sense of direction and work hard to achieve their goals.</p>
<p>Typical Item</p> <p>I have lacked the will to succeed.</p>	<p>Typical Item</p> <p>I have done more than what's expected of me.</p>
<p>Key Behaviors</p> <p>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</p> <p>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>
<p><b>MODERATE SCORERS</b></p>	
<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>	

## 4. Reliability and Validity

### 4.1 Internal Consistency Reliabilities

Table 3 shows the CSQ scale reliabilities. The internal consistency for the questionnaire as a whole is 0.92 and the median internal consistency for the CSQ scales is 0.78 which is defined as good by the EFPA review model (Bartram, 2002).

The CSQ scale sten score SEMs all in the range of 0.8-1.1. This means that there is a 68 percent likelihood that the person's true score on the scales will be about 1 sten either side of the observed score. The sten score SEM band around the CSQ total score is smaller (about .5) because the reliability is higher.

**Table 3. Internal Consistency Reliabilities (N = 4,000)**

Scale	Alpha	Mean	SD	Raw score SEM	Sten score SEM
Creating and Originating	0.75	36.45	5.65	2.82	0.98
Challenging and Risk Taking	0.79	31.52	6.23	2.86	0.95
Adjusting and Changing	0.70	37.48	5.27	2.89	1.07
Communicating and Selling	0.78	35.41	5.98	2.81	0.84
Executing and Realizing	0.78	37.70	6.15	2.88	0.78
Creating and Originating	0.92	178.56	22.98	6.50	0.54

### 4.2 Scale Intercorrelations

Table 4 shows the intercorrelations of the CSQ scales. There are moderate to high correlations between the scales ranging from 0.26 to 0.70.

**Table 4. Intercorrelations of CSQ scales (n=4,000)**

Scale	2	3	4	5
1 Creating and Originating	0.65	0.70	0.57	0.51
2 Challenging and Risk-Taking		0.56	0.55	0.26
3 Adjusting and Changing			0.49	0.49
4 Communicating and Selling				0.47

All correlations are significant at 0.01 level (2-tailed).

### 4.3 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. All the SEds in Table 4 are around 4 so a difference of around 8 or more in CSQ raw scores constitutes a real difference. This is equivalent to a difference of 3 Stens.

**Table 4. Standard Error of Difference of CSQ Scales (n=4,000)**

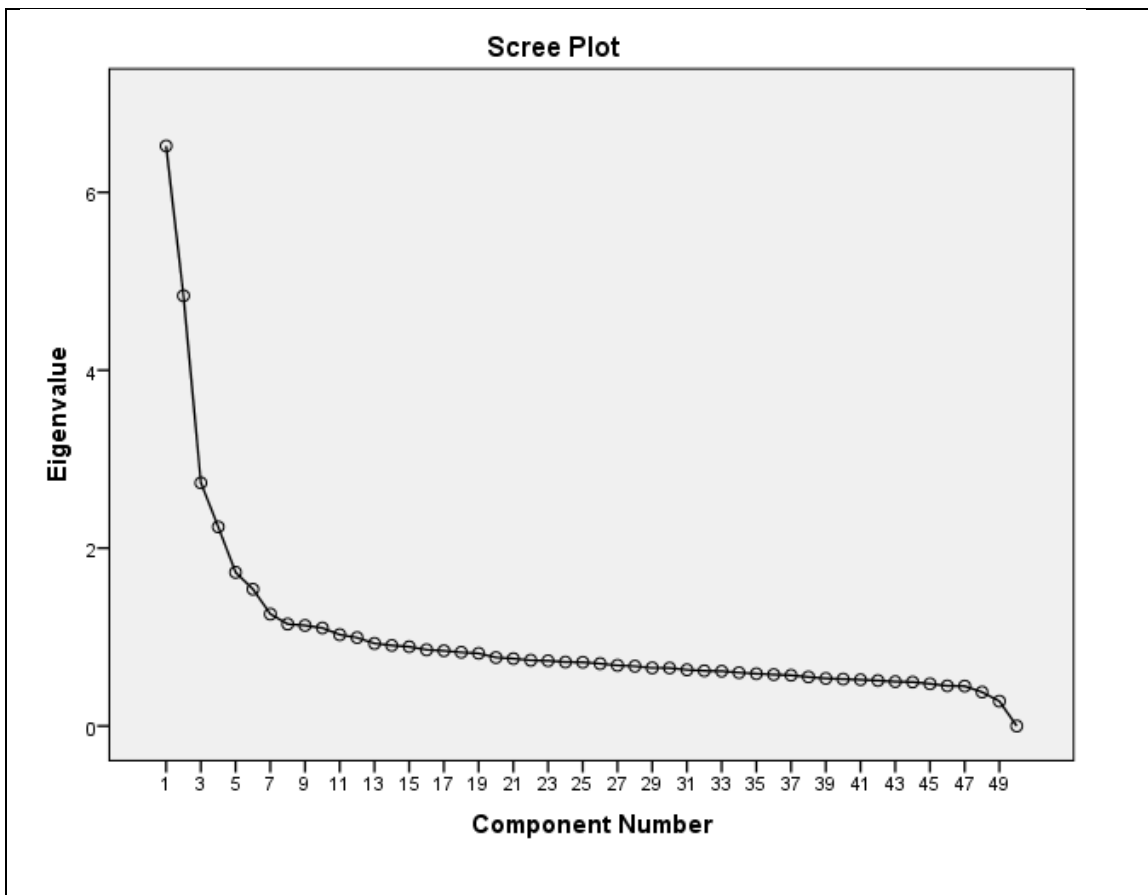
Scale	2	3	4	5
Creating and Originating	4.02	4.04	3.98	4.03
Challenging and Risk-Taking		4.07	4.01	4.06
Adjusting and Changing			4.03	4.08
Communicating and Selling				4.02

### 4.4 Factor Analysis

**Items.** Exploratory factor analysis (EFA) with orthogonal and oblique rotations was carried out using normative and ipsatized data with 4,000 respondents from the standardization sample. Recent studies in the field of personality (Rammstedt, Goldberg, and Borg, 2010; Rammstedt and Kemper, 2011) have shown that when ipsatization is used to control acquiescence, the factor structure became much clearer and more congruent with simple structure. The solution reported below is based on ipsatized data using Principal Components Analysis (PCA) with oblique rotation.

The Kaiser-Meyer-Olkin measure of sampling adequacy for the solution was 0.94, well above 0.6 required for a sound analysis. The graph of the eigenvalues (Figure 4) indicates that there are six data points above the break point in the data where the curve flattens out so we ran PCA with five, six and seven-factor solutions.

**Figure 4. Principal Components Analysis Scree Plot (n=4,000)**



A five-factor solution accounting for 41 percent of the variance had 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 0.3 , few item cross-loadings, and no factors with fewer than three items (Table 5).

**Scales.** Principal axis factoring with oblique rotation was performed on the CSQ scales on a sample of 4,000 respondents (see Table 6). The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.82, well above 0.6 required for a good factor analysis. The variables were on the whole well-defined by the factor solution. Community values were moderate to fairly high. One factor was extracted accounting for 67% of the variance indicating that creativity and problem solving style measured by the CSQ is a single construct.

**Table 5. Rotated Pattern Matrix for CSQ Items (n=4,000)**

Item	1	2	3	4	5
I have argued my own point of view		<i>-0.37</i>		<i>-0.40</i>	
I have respected custom and tradition	0.46				
I have preferred established methods to radical alternatives					0.34
I have produced original ideas	<i>-0.65</i>				
I have failed to generate ideas for change			<i>-0.31</i>		
I have needed to feel I was accomplishing something		<i>-0.37</i>			<i>-0.39</i>
I have supported the status quo	0.39				
I have failed to assert my opinions				<i>-0.53</i>	
I have given way when there were differences of opinion	<i>0.30</i>			<i>-0.34</i>	
I have lacked ambition		0.46			
I have developed new ways of doing things	<i>-0.61</i>				
I have set myself challenges	<i>-0.31</i>				<i>-0.39</i>
I have been unconventional		<i>-0.33</i>			
I have disliked tackling complex problems		0.32			
I have looked critically at people in charge		<i>-0.53</i>			
I have let others do most of the talking in meetings				<i>-0.41</i>	
I have been unsure what I wanted to achieve		0.59			
I have originated change	<i>-0.50</i>				
I have been a steady worker rather than an innovator					0.53
I have been slow to act		0.51			
I have worked hard to accomplish my goals					<i>-0.64</i>
I have taken calculated risks					
I have been set in my ways			<i>-0.34</i>		
I have been practical and realistic rather than creative and inventive			<i>-0.30</i>		0.57
I have failed to push my views and ideas		<i>0.32</i>		<i>-0.54</i>	

Items loading less than 0.3 have been omitted. Secondary loadings above 0.3 are in *italic*.

**Table 5 continued. Rotated Pattern Matrix for CSQ Items (n=4,000)**

Item	1	2	3	4	5
I have kept up-to-date with new technology					-0.38
I have kept abreast of the latest developments					-0.36
I have preferred stability and continuity					0.46
I have expressed views that I knew people wouldn't like		-0.39	<i>0.38</i>		
I have told people what I thought		-0.32	<i>0.30</i>	-0.48	
I have resisted proposals for change			-0.46		
I have thought about the future		-0.35			-0.45
I have found it hard to see how to improve things		0.39			
I have failed to push myself		0.63			
I have found it hard to hold my ground against a group		<i>0.34</i>		-0.41	
I have done things in conventional ways					0.50
I have enjoyed trying new ways of working	-0.39				
I have played by the rules	<i>0.37</i>				0.47
I have let opportunities slip by		0.56			
I have lost interest when people discussed theories and concepts			-0.39		
I have been a workaholic					-0.49
I have been curious		-0.49			
I have followed instructions and reduced risks	<i>0.38</i>				0.43
I have had an active imagination	-0.47	-0.50			
I have made things happen	-0.40		<i>0.38</i>		
I have cut through red tape			0.59		
I have been forceful and assertive			0.66		
I have bent rules and regulations			0.60		
I have challenged procedures			0.62		
I have got lost in my thoughts and ideas		-0.67			

Items loading less than 0.3 have been omitted. Secondary loadings above 0.3 are in *italic*.

**Table 6. Principal Axis Extraction of CSQ Scales (N=4,000)**

Scale	F1	Communality
Creating and Originating	0.88	0.78
Challenging and Risk-Taking	0.80	0.63
Adjusting and Changing	0.84	0.70
Communicating and Selling	0.78	0.61
Executing and Realizing	0.67	0.45

#### 4.5 Relationship to Other Measures

The Kirton Adaptation-Innovation Inventory (KAI) is a 32 item questionnaire which provides a measure of creative style (Kirton, 1994). 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: Creating and Originatingity, Efficiency and Conformity.

The CSQ and the KAI were administered to a sample of 126 managers and professionals studying for a MBA at Manchester Business School. The sample spanned 28 nationalities. Table 7 shows correlations between the KAI total score and subscales and the CSQ total score and subscales.

**Table 7. Correlations between CSQ and the KAI (n=126)**

Scale	Originality	Efficiency	Conformity	KAI Total
Creating and Originating	0.67*	0.11	0.35*	0.54*
Challenging and Risk-Taking	0.59*	0.2	0.58*	0.63*
Adjusting and Changing	0.61*	0.02	0.37*	0.49*
Communicating and Selling	0.48*	0.05	0.33*	0.41*
Executing and Realizing	0.28*	-0.2	-0.03	0.07
Total Score	0.75*	0.17	0.56*	0.69*

\* p <.01

The CSQ total score and the KAI total score correlate significantly at 0.69 which is defined as good by the EFPA review model. The CSQ Creating and Originating scale correlates significantly with the KAI Originality scale (0.67) and the CSQ Challenging and Risk-Taking scale correlates significantly with the KAI Conformity Scale (0.58). The pattern of correlations confirms that CSQ measures important elements of creative style. Regression analysis indicated that the CSQ subscales account for about 65% of the variance in the KAI total score.

## 4.6 Criterion-Related Validity

Table 8 shows the correlations between CSQ scale scores and job appraisal ratings. This is based on a sample of 1,960 respondents who completed the CSQ on the internet. 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 the sum of the manager's assessment and the test taker's self-assessment.

There are statistically significant correlations at 0.1-0.4 between job performance and all five factors. These correlations are consistent with those reported in the literature for personality assessment instruments. 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 areas of emotional intelligence to job appraisal ratings. A standard multiple regression was performed between managerially and self-assessed job performance combined as the dependent variable and the CSQ scales as the independent variables.

Table 8 displays the correlations between the variables, the unstandardized regression coefficients (B), the semi-partial correlations ( $sr^2$ ) and R,  $R^2$  and adjusted  $R^2$ . For the combined ratings, R for regression was significantly different from zero,  $F(5, 1954) = 68.89$ ,  $p < 0.001$ . Two CSQ scales (Creating and Originating and Executing and Realizing) contributed significantly to the prediction of job performance ratings ( $sr^2 = 0.07$ ), and the five scales in combination contributed another 0.07 in shared variability. Altogether, 14% of the variability in job performance ratings was predicted by knowing scores on the five CSQ scores.



**Table 8. Regression Of CSQ Scale Sten Scores on Job Performance Ratings (N=1,960)**

Scale	Combined Assessment (DV)	Creating and Originating	Challenging and Risk-Taking	Adjusting and Changing	Communicating and Selling	Executing and Realizing	B	Beta	Unique
Creating and Originating	0.26						0.11	0.16	0.01**
Challenging and Risk-Taking	0.12	0.68					-0.06	-0.09	0.00
Adjusting and Changing	0.24	0.70	0.58				0.02	0.04	0.00
Communicating and Selling	0.18	0.58	0.57	0.51			-0.02	-0.02	0.00
Executing and Realizing	0.36	0.51	0.30	0.50	0.48		0.24	0.30	0.06**
Mean	6.44	5.69	5.72	5.61	5.81	6.06	R <sup>2</sup>		0.14 <sup>a</sup>
Standard deviation	1.34	1.97	2.08	1.96	1.80	1.64	Adjusted R <sup>2</sup>		0.14
							R		0.38

\*\*P<0.01. <sup>a</sup>Unique variability = 0.07, shared variability = 0.07.

## 4.7 Demographics

Table 9 shows the correlations between the CSQ scales and gender and age in the standardization sample.

There were three statistically significant correlations related to gender where the observed differences were very small. Men described themselves as very slightly more willing to take risks, very slightly more adaptable, and very slightly more achieving than women. There was no significant difference related to gender on the CSQ total score.

There were statistically significant differences on the CSQ total score and all the scales related to age. The creative style scale scores increased slightly with age which suggests that men and women become more creative as they mature. The low magnitude of differences related to gender and age indicates that there is no need for separate norms related to age or gender.

**Table 9. Correlation with Age and Gender (N=4,000)**

Scale	Gender	Age
Creating and Originating	-.01	.12**
Challenging and Risk-Taking	-.09**	.14**
Adjusting and Changing	-.07**	.17**
Communicating and Selling	-.02	.05**
Executing and Realizing	.06**	.12**
Total Score	-.03	.15**

Gender was coded 1 for male and 2 for female. \*\*. Correlation is significant at the 0.01 level (2-tailed).

## 5. Norms

CSQ norms are based on a large international sample of 4,000 respondents who completed the questionnaire on the internet. A sample was created with equal numbers of men and women between the ages of 16 and 64. The mean age of the sample was 31.7 with a Standard Deviation of 10.8. The majority of respondents were from the USA, the UK, Canada, and Australia.

### 5.1 Age Distribution

The age distribution of the standardization group is shown in Table 10. Approximately 65 percent of the sample was aged 16-34 with roughly equal numbers in the 16-24 and 25-34 age bands. Twenty percent of the group was aged 35-44 and the remaining 15 percent was aged between 45 and 64. The age distribution of men and women was similar.

**Table 10. Age Distribution of CSQ International Norms Sample (N=4,000)**

Age	Men	Percent	Women	Percent	Total	Percent
16-24	615	30.8	649	32.5	1,264	31.6
25-34	732	36.6	577	28.9	1,309	32.7
35-44	377	18.9	433	21.7	810	20.3
45-54	206	10.3	285	14.3	491	12.3
55-64	70	3.5	56	2.8	126	3.2
Total	2,000	100.0	2,000	100.0	4,000	100.0

### 5.2 Sector Characteristics

Over 70 industry sectors were represented in the sample. Table 11 shows the top ten sectors representing about half the comparison group. Education was the largest sector in the standardization group making up 14.3 percent of the sample.

**Table 11. Top Ten Industry Sectors in Standardization Group (N=2,182)**

<b>Sector</b>	<b>Frequency</b>	<b>Percent</b>
Education	573	14.3
Computers/Software	233	5.8
Other Services	217	5.4
Advertising/Marketing	200	5.0
Consulting	183	4.6
Health Services	174	4.4
Arts/Culture	164	4.1
Computer-related Services	159	4.0
Engineering	140	3.5
Government	139	3.5
Total	2,182	54.6

The norms are presented in Table 11.

**Table 12. CSQ General Population Norms (N = 4,000)**

<b>Scale</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>	<b>Mean</b>	<b>SD</b>
Creating and Originating	10-24	25-27	28-29	30-33	34-36	37-38	39-41	42-44	45-46	47-50	36.45	5.65
Challenging and Risk-Taking	10-18	19-21	22-24	25-27	28-30	31-34	35-37	38-40	41-43	44-50	31.52	6.23
Adjusting and Changing	10-25	26-28	29-31	32-34	35-37	38-39	40-42	43-44	45-46	47-50	37.48	5.27
Communicating and Selling	10-21	22-25	26-29	30-32	33-35	36-38	39-40	41-43	44-45	46-50	35.41	5.98
Executing and Realizing	10-23	24-27	28-30	31-34	35-37	38-40	41-43	44-45	46-47	48-50	37.70	6.15
Total Score	50-131	132-143	144-153	154-166	167-178	179-190	191-201	202-212	213-221	222-250	178.56	22.98

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