Extended DISC Personal Analysis
–
Validation Report 2015

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Extended DISC Personal Analysis – Validation Report 2015

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1 Extended DISC Personal Analysis - Validation Summary

Research population

The population was collected from the users of the Extended DISC System from around the world. The population represents all the age groups, genders, organization types and levels and races in the same ratio it is designed to be used.

The total population used for the research was 239.171. The size of the main comparison population (2011 validation population) was 89.504.

The language versions of Extended DISC Personal Analysis for the study were (the language codes used in this study):

- Albanian (ALB)
- Arabic (ARA)
- Bulgarian (BUL)
- Catalan (CAT)
- Chinese (Hong Kong) (CHK)
- Chinese Simplified (CHI)
- Chinese (Traditional) (TWN)
- Croatian (CRO)
- Czech (CZE)
- Danish (DAN)
- Dutch (HOL)
- English (Australasia) (AUS)
- English (Canada) (ECA)
- English (Caribbean) (ENC)
- English (India)
- English (Nigeria) (NIG)
- English (South Africa) (RSA)
- English (US) (ENG)
- English (UK) (EUK)
- Estonian (EST)
- Finnish (FIN)
- Flemish (FLE)
- French (Canada) (FCA)
- French (Caribbean) (FRR)
- French (France) (FRA)
- German (Austria)
- German (GER)
- German (Switzerland)
- Greek (GRE)
- Gujarati (GJR)
- Hebrew (HEB)
- Hindi (HIN)
- Hungarian (HUN)
- Indonesian (IND)
- Italian (ITA)
- Japanese (JAP)
- Kannada (KAN)
- Korean (KOR)
- Kurdish (KUR)
- Latvian (LAT)
- Lithuanian (LIT)
- Macedonian (MAC)
- Malay (MAL)
- Maori (MAO)
- Marathi (MAR)
- Norwegian (NOR)
- Polish (POL)
- Portuguese (Brazil) (POB)
- Portuguese (Portugal) (POR)
- Romanian (ROM)
- Russian (Kazakhstan) (KAZ)
- Russian (RUS)
- Slovak (SLK)
- Slovene (SLN)
- Spanish (Caribbean) (SPC)
- Spanish (Spain) (SPA)
- Spanish (Latin America) (SPL)
- Swahili (SWA)
- Swedish (Finland) (SWF)
- Swedish (Sweden) (SWE)
- Thai (THA)
- Tok Pisin (TPI)
- Turkish (TUR)
- Vietnamese (VIE)

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Reliability and Validity of Extended DISC Personal Analysis

Internal consistency. Internal consistency is a measure based on the correlations between different items on the same test (or the same subscale on a larger test). It measures whether several items that propose to measure the same general construct produce similar scores. Internal consistency is usually measured with Gronbach's alpha, a statistic calculated from the pairwise correlations between items. Internal consistency ranges between zero and one. A commonly-accepted rule of thumb is that an a of 0.6-0.7 indicates acceptable reliability, and 0.8 or higher indicates good reliability. High reliabilities (0.95 or higher) are not necessarily desirable, as this indicates that the items may be entirely redundant.

The global Gronbach's alpha for Extended DISC Personal Analysis version 2013 (2009) was:

D .80 (.84)
I .80 (.82)
S .82 (.83)
C .78 (.78)

The results prove that the instrument continues having a very high validity.

The consistency of the instrument was tested by dividing the research population in two randomly selected sub-groups:

Construct validity				
	D	**I**	**S**	**C**
Part 1	0,82	0,81	0,85	0,78
Part 2	0,84	0,82	0,83	0,80
Global				
2013	**0,84**	**0,82**	**0,83**	**0,78**
2011	**0,84**	**0,82**	**0,84**	**0,78**
2009	**0,84**	**0,82**	**0,85**	**0,79**
2008	**0,84**	**0,82**	**0,84**	**0,79**
2007	**0,84**	**0,82**	**0,84**	**0,79**

Population statistics and interesting research findings

The global DISC distribution

	2015	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**	**2003**	**2002**
D	12,3	11,8	13,2	12,1	12,8	12,3	12,0	13,1	13	13	14
I	26,4	29,8	29,6	31,3	31,4	31,5	30,9	31,0	29	29	27
S	30,9	29,9	28,9	30,4	30,2	30,8	31,6	30,9	29	32	31
C	30,4	28,5	28,2	26,2	25,6	25,4	25,4	25,0	29	26	28

The stability of the instrument (proved by the very high correlation between the different years) supports the claim that the instrument has been able to maintain its reliability.

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The different age groups

2015	<1960's	1960's	1970's	1980's	1990's
D	9,9	10,9	12,2	10,2	8,0
I	25,5	27,6	29,4	32,7	33,2
S	35,9	32,0	30,1	29,1	30,5
C	28,5	29,5	28,9	28,6	28,1

The 2015 research supports the finding (that was first identified in 1994 research), that the global population is changing. The younger the person is (the birth years in the above table), the more likely the person is to have dominant I, and less likely to have dominant S or C.

The gender differences

Male	2015	2013	2011	2010	2009	2008	2007	2006
D	13	14	14	17	14	15	15	13
I	28	28	30	29	29	29	30	29
S	29	28	27	29	29	28	28	32
C	30	30	29	28	28	27	27	26

Female	2015	2013	2011	2010	2009	2008	2007	2006
D	8	9	9	9	8	10	9	10
I	32	32	34	34	35	35	34	34
S	33	32	31	32	32	33	32	31
C	28	25	25	24	25	23	25	24

Although there is no major gender distribution between the four dominant styles, the minor I and S domination in female population seems to be consistent, with D and C dominating in male population.

Overall conclusion from the global comparison

The results show that the Extended DISC Personal Analysis worked the same way in 2015 as it has done in the previous years. All the distributions are similar to what they've previously been, and all trends have continued to develop the same way as they have done in the past.

The results support the claim that Extended DISC Personal Analysis was in 2015 a valid instrument, and that the environment has not changed in any direction that would require adjustment in the basic construct of the instrument.

More detailed information and analysis of the research finding can be found in the 2015 validation report.

Number formatting

This report uses European number formatting. Thousand separator: ".". Decimal separator: ",".

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2 Preface

Extended DISC® assessments are based on concepts of human behavior accepted widely all around the world. They are not, however, purely psychological tools. They are also management's tools in efforts to increase the efficiency of an organization. Today, Extended DISC® Analyses are a part of the daily management system in thousands of organizations all around the world. They give the decision maker extremely important information about people involved in the organization – information that would otherwise be very much more expensive and time consuming to acquire.

Extended DISC® Personal Analysis is the origin of the Extended DISC® System. It was developed between 1991 and 1994 and is today the starting phase in many different training and consultancy projects. Learning the Extended DISC® System typically begins with completing the Personal Analysis Questionnaire and participating in the Personal Analysis Certification Training.

Extended DISC System was among the first ones to offer web based solution for completing assessments and managing the whole process. The first web applications were launched to users as early as 1998.

Personal Analysis is the most commonly used Extended DISC® assessment because of its many applications; it is also the foundation for the other assessments. Personal Analysis is a behavioral inventory based on self-evaluation. There are no right or wrong answers in the instrument questionnaire. It does not give a high or low score or by any other means classify people into better or worse. The Extended DISC® Personal Analysis does not measure intelligence, professional skills, or attitudes - it purely concentrates on measuring natural behavioral styles.

Personal Analysis is a useful tool for not only the individual him/herself but also for everyone communicating with the person. Its main purpose is to increase understanding of human behavior; our own and others'.

Compared to other Disc Theory based tools Extended DISC® Personal Analysis goes more deeply into the person's personality, measuring something much more unconscious, stable and natural than Disc tools traditionally have done.

I am very happy to offer you the opportunity to use this tool that we believe is the most comprehensive behavioral assessment tool available. It can help you both in your business and private life.

Jukka Sappinen
Managing Director
Extended DISC International Ltd.
Founder of the Extended DISC® System

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3 Introduction

3.1 Purpose of the Validation Report

This report is a publication of the on-going process that aims for providing the users of the Extended DISC System with the most updated and valid assessment questionnaires.

This version focuses on the data population collected in 2013. The study compares the 2013 data to previous data and the theoretical model behind Extended DISC Personal Analysis.

The report is based on the initial validation study by University of Oulu (in Finland) and is updated by Extended DISC International.

The purpose of the report is to make sure Extended DISC Personal Analysis is still a valid tool to be used in the next years.

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3.1.1 Research coverage and use

Extended DISC Personal Analysis is designed to be used for individual and organizational development. The most common target group is, as a result of that, adult population currently employed or seeking for employment in both public and private sector.

The instrument is applicable in all levels of an organization and in all areas of the world.

The sample populations used in this study are collected from the target group of the instrument representing well all age groups, sexes, different races, all types of organizations and all organizational levels that we would recommend would be the respondents of the questionnaire.

The study is limited to a number of language areas that are listed later in this document. There is no reason to believe the instrument would not work in other languages.

3.1.2 Data Collection

To achieve the best representation of the target group of Extended DISC Personal Analysis, the validation sample was randomly selected among the real-life inventory results collected by the online system of Extended DISC International.

The comparison material used for this study was collected using the same method between 2002 and 2008. In addition, material collected for the original validation studies of Extended DISC Personal Analysis was used for comparison. The original material was collected on paper questionnaire, similar method to the rest of the comparison population from 1998 – 2002.

The size of the population for the 2013 study was 144.703. The size of the population is big enough to represent well the whole current user group of Extended DISC Personal Analysis.

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The comparison populations used for this study:
1 - Original validation study (n = 555, 1994-98)
2 - Population USA-Online 2002 (n=1007)
3 - Population FIN-Paper 2000 (n=440)
4 - Population THA-Paper 2002 (n=743)
5 – Population POL (Paper/Online) (n=657) - Polish
6 – Population DAN (Paper/Online) (n=643) - Danish
7 – Population KOR (Online 2002-04) (n=2159) – Korean
8 – Population ENG (Online 2003-04) (n=14.283) – English (US)
9 – 2005 Global study (several languages) (n=26.319)
10 – 2006 Global study (several languages) (n=44.235)
11 – 2007 Global study (several languages) (n=57.955)
12 – 2008 Global study (several languages) (n=63.684)
13 – 2009 Global study (several languages) (n=77.811)
14 – 2011 Global study (several languages) (n=144.703)

All the comparison populations consist of randomly selected persons representing well the normal target group of Extended DISC Personal Analysis.

3.2 History of Extended DISC Personal Analysis

The Extended DISC®-system is based on a psychological theory developed in the 1920's. Carl G. Jung created the foundations for the theory in his book *The Psychological Types (Die Psychologische Typen)*. His ideas were based on defining two behavioral axes; sensation-intuition and thinking - feeling, and the four main behavioral traits that they composed. The work of Jung was further developed by William Moulton-Marston who defined a four dimensional behavioral map.

As a result, the four-quadrant thinking of human behavior was developed. It is still popular and is used in many management, sales and leadership training techniques. A few variations of the theory also exist that use, for example, eight or sixteen categories of behavioral styles. The over-simplification of behavior and its classifications have proven to be a weakness of these systems.

The original DISC reference framework was developed at the end of the 1940's and the beginning of the 1950's to eliminate these problems. It uses regression analysis to separate the combined four basic behavioral styles from each other and makes them into independent and even interdependent behavioral styles. This also makes it possible to have a framework of millions of human reaction modes that can be transformed by using different techniques, into a smaller, more usable quantity.

Milestones of development of Extended DISC Personal Analysis:

1921	Carl G. Jung: Die Psychologische Typen
1928	William Moulton-Marston: Emotions of Normal People
1951	DISC System (several individuals in the USA)
1991 - 1994	Development of the questionnaire design - Early validations
1991 - 1996	The report design - Writing the text contents
1994	Launch of the Extended DISC System (Jukka Sappinen, Finland)
1994	First validation study of a published product
1995	First software application

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1995 - 2001	Questionnaire translations
1997-	Annual questionnaire validation studies begin
1998	Web application – ExtDISC Online Master
1999	Web application - eDISC Online
2004	Web application – Extended DISC Online System

Questionnaire Design and Validation :

1991-1994

1. Selection of a target group
2. Draft Questionnaire testing
3. Comparison of the results to other instruments
4. Repeating steps 1 and 2 required many times

1994-1996

5. Feedback validation
6. Test-retest validation

1997-

7. Annual language development validation

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4 Original Validation Study

Extended DISC Persona Management System

Validation Report

Petri Kauppinen, University of Oulu

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4.1 Summary

*A Validation process is an important part of the development process of a behavioral profile analysis or any psychological profiling method. Many strategies have evolved for validation. This report is part of an ongoing and long-term validation process of the Extended **DISC** Persona Management System. Extended **DISC** Persona Management System was developed by Extended DISC International Ltd. in Finland. This report summarizes a study of the Extended DISC instrument and the four key dimensions which it assesses (Dominance, Influence, Steadiness and Compliance). Reliability and validity characteristics of the Extended **DISC** Persona Management System are analyzed by using various statistical methods. The results, methods and basic theory are also briefly discussed and compared with some related earlier reports. This report is based on data collected in both normal training and consultancy situations and during special data collection processes conducted by Extended DISC International Ltd. and its associate consultants.*

*In this report it is demonstrated that the Extended **DISC** Persona Management System has adequate reliability and validity for its applied use in a number of areas. The first steps along the long validation process have been taken by doing these analyses. The process will continue to show the usefulness of the Extended **DISC** Persona Management System in different kinds of situations and applications.*

According to the results of this report, the Extended DISC Persona Management System has both high validity and reliability.

4.2 About the Extended DISC Persona Management System

Extended **DISC** Persona Management System is based on the concepts of human behavior and over 75 years of behavioral studies. The foundation for the Extended DISC system is a psychological theory developed in the 1920's by Carl G. Jung in his book "Psychological Types". The next step towards the profiling system was the work of W. Moulton-Marston (1928, 1931). He postulated a theory of human behavior as a function of the environment and the individuals' reaction. He formulated a method to describe individuals' typical pattern of interaction through four characteristics:

Dominance (D) - active
Inducement (I) - active
Submission (S) - passive
Compliance (C) - cautious

It is obvious to think that each individual can show all four dimensions in their normal interactive way of living. According to Marston, people tend to learn a self-concept, which is basically in accord with one of the four just mentioned key dimensions. As based on the Marston's scientific work and theory, the use of the behavioral profiling method gives us a good possibility to be objective and descriptive rather than subjective and judgmental.

The first steps toward the Extended DISC System were taken in the 1950's when the DISC profile framework was developed. The impetus for developing a new way of characterizing human behavior came from the increasing need of the business world to apply psychological information in organizational development. The guiding principle was to design frameworks

and methods that would be understandable also by people with limited psychological background and training.

From the original DISC framework and approach several independent paths were taken by individual psychologists who wanted to develop the original theory further to better suit their customers' needs. Among those was, e.g., Elizabeth Briggs-Meyers who was the originator of the Meyers-Briggs Type Indicator (MBTI).

These early tools, however, did not quite fulfill the needs of the business life. The need for even more flexible tools that would still retain the simplicity of the MBTI was obvious and still existent.

Several consulting and publishing companies and individuals made an effort to give their contribution to the further development of the DISC theory. They all came up with a system that would produce a report based on the original DISC questionnaire. The computerization of the world also made its mark on the development of DISC theory based tools. It now became possible to sell the system to end-users and still give them the possibility to get the full report.

The flow of 'psychology in business' from North America to Europe and the rest of the world widened the operations of some of the companies selling DISC theory based tools to cover the whole world.

The computerization and globalization of the business combined with the aging of most of the business owners caused the actual DISC theory to remain to be untouched – and undeveloped. The competition in the world market was battled with more complicated analysis reports and also price as the arms of the war.

This situation created a possibility for smaller and more flexible companies to develop the original DISC theory further. Perhaps the most successful of them was Extended DISC International, Ltd. in Finland. Its mission was to develop a full system were the original DISC system was applied to different applications. The Extended DISC Persona Management System was created by Jukka Sappinen in 1994.

It was based on the original work of Jung and Moulton-Marston but also on the theories of business management. The original questionnaire and scoring system were reconstructed. The results frameworks as well as analysis reports were redesigned. That was the first system to be developed for computer use from the beginning. The system was developed in close co-operation with not only psychological experts but also business experts – trainers, consultants, managers and even blue-collar workers.

The Extended DISC Persona Management System contains many special characters that make it a unique tool. The original profiling system was restructured. New methods or frameworks for describing the analysis results, like the Extended DISC Diamond and the Extended DISC Percentages, were developed. Originally a DISC tool has always meant a self-assessment forced-choice behavioral inventory. The Extended DISC System was constructed to include several other tools to provide the user with a possibility to receive even more accurate and purposeful but also more wide-angled information.

The uniqueness of the Extended DISC System causes not only benefits but also requires much more from the developers of the system. The old validation data from the older DISC theory based tools can not any more be used as such – but only for comparison purposes. The

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translation of the tool to different languages requires special effort. Also the development of new tools, like the Extended DISC Team Analysis, Team Assessment, Team Roles, Job Analysis, Team Alignment etc. required special effort on product validation.

Since the special characters of the Extended DISC system are not familiar for the users of older DISC tools, more effort also needs to be put into training the users and producing new manuals to support the use of the system.

The validation need was tackled quite extensively at the early stages of the system development. Results from studies made with other DISC theory based tools were used to compare the early results from the Extended DISC System. The different steps in the development process required different types of validation data. In total over 10.000 analysis were used in the internal validation and development process of the Extended DISC System.

The need to show validation results to the users of the Extended DISC System caused Extended DISC International to contact me. They asked me to conduct a validation study for them. This report is the result of that study.

Figure 1. Extended DISC Diamond

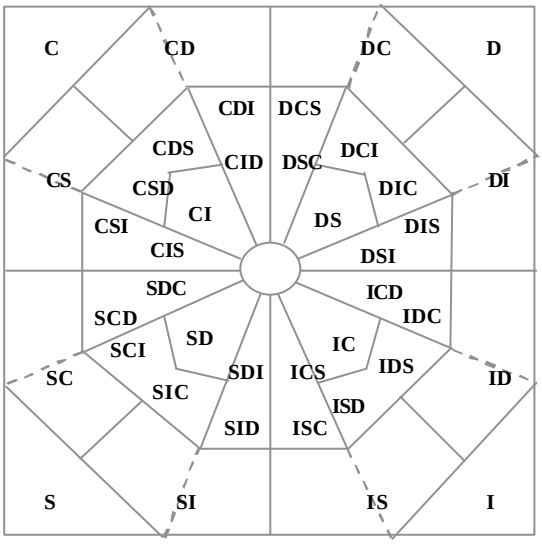

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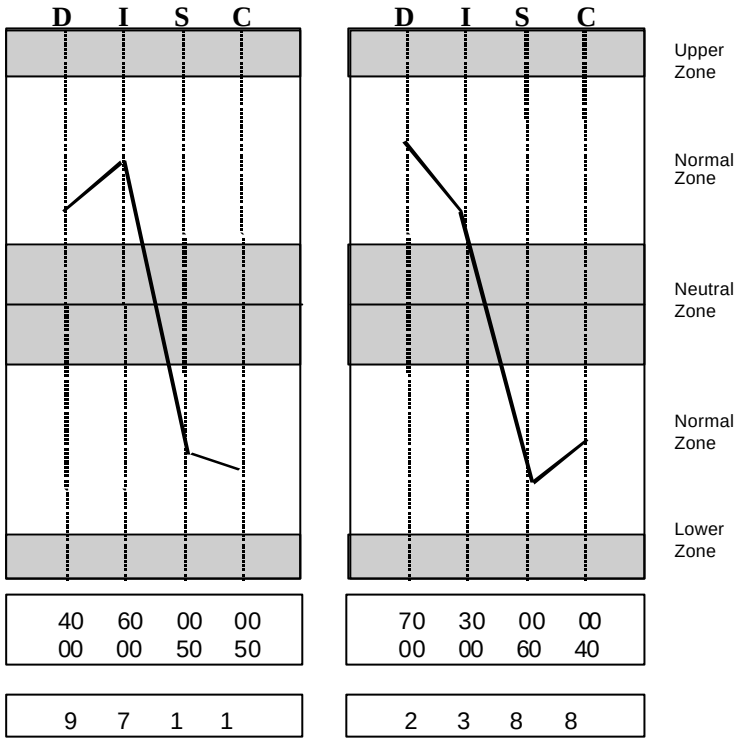
Figure 2. Extended DISC Profiles and Percentages



4.3 About the Validation Process

The measurements of all psychological phenomena, like work preferences, are much more difficult to study than to observe and measure phenomena that exist in the physical world. Such concepts as personality, ability, attitudes and cognitive style are latent and cannot be measured directly. Thus, persona profiling tools can also be seen as indicators of different aspects of persona - environment system rather than exact measurements of one particular key dimensions of that particular persona - environment relationship.

When assessing the adequacy of the Extended DISC Persona Management System at least two questions are often asked: ”how well does this tool minimize error in measuring actual and the most probable behavioral style of an individual?” and ”how well does the score measure that actual phenomena that they are actually meant to measure”? The first question is related to the concept of reliability and the second to the concept of validity. The reliability concerns the association between different measurements of the same concept using the same indicator (in this case the Extended DISC Persona Management method). Validity concerns the association between the indicator and the concept under the interest of the measurements.

Validation for purposes of law is the process that guarantees to the user of Extended DISC Persona Management System that when properly used, it doesn’t discriminate against any individual or groups of individuals and gives a proper image of the analyzed person in terms

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of observed or measured key dimensions by that particular profiling tool. We also like to now and then illustrate how well this tool actually indicates those properties it is meant to measure.

Validity of an indicator can be based upon the analysis of external criteria. These are other indicators (tools) or more direct measures that have been found from past experience or studies to be strongly related to the concept the tool under validation is actually trying to measure. If our indicator shows a strong and consistent relationship to appropriate external criteria, we say that it has some degree of validity.

The profiling system based on the DISC theory is at the moment more and more recognized to be a valid analyzing system of human behavior and the surrounding environment. This also involves all kinds of human interaction in the work place (teamwork, leadership, management) and also the relationship to clients (sales work, quality of service etc.). The Extended DISC persona profiling system is not meant to be a personality test that would require a tighter and higher relationship between the observed scores and external criteria. Rather it must be seen as an indicator of human behavior, thus, various data collecting systems (ratings, other similar tools, personnel files, assessment center method, peer assessment) can be used to indicate the validity of the Extended DISC Persona Management System. It is obvious that we have to recognize not only how well the used external criteria are actually measured, but how the results of the analyzed tool have been received.

To test the psychometrics of a given instrument, the following must be evaluated

- **Item Internal Consistency:** Item's correlation with its own scale is at least 0.40.
- **Item discrimination validity:** Item's correlation with its own scale is greater than with any other scale.
- **Scale level reliability:** Chronbach's alpha is at least 0.70. Test-retest correlation is high enough and statistically significant.
- **Homogeneity:** Item-scale correlation is approximately equal in a scale.
- **Criterion Validity:** Correlation between a given scale and a chosen standard are high.
- **Construct Validity:** Correlations between a given scale and related scale are moderate to high; correlation between a given scale and non-related scale are low. This also considers the relationship of the observed profile with related assessments of behavioral style. It relates various attributes to test scores through evidence, argument and judgment.
- **Conceptual Validity**: Items, when properly interpreted, are measuring what they are supposed to measure. This means not only major scales of the tool but also country, language, culture related matters.
- **Face validity**: refers to whether the test "looks valid" to the people who take it and to untrained colleagues
- **Predictive validity**: Individuals own prediction of the dominant scale hits the results of the instrument (face validity).

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4.4 Descriptive Statistics

Extended **DISC** Persona Management System is based on a forced-choice checklist with 24 sections. Each of sections consists of four lines of descriptive words. The data analyzed here is collected for normal consulting and training purposes in various occasions. The sample consists of people aged between 18 and 60, in working life, in all types of organizations at all levels. This secures that the sample is not biased but well represents the average background population. The study concerns 5270 questionnaires. When compared to the results of the other studies, the characteristics and the size of the used sample are reported separately. We first give detailed frequency distributions of the original questionnaire sections of Finnish data (N=555) (Table 1).

Table 1. Original answers and distributions

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		M	L
1.	Carefree, positive	30.5	10.6
	Flexible, yielding	18.2	24.0
	Argumentative, speaks out	16.0	51.0
	Stable, relaxed	30.3	14.4
2.	Optimistic, positive attitude to live	46.1	6.5
	Adjustable, adaptable	16.6	27.7
	Respectful, obedient	4.0	50.1
	Shows initiative, wants change	33.3	15.7
3.	Sociable, loves company	21.8	17.3
	Conscientious, balanced	33.0	5.8
	Independent, own initiative	41.8	4.5
	Mild, reserved	3.4	72.4
4.	Well-meaning, pleasant	27.6	11.4
	Careful, cautious	19.8	47.7
	Decisive, not easily shaken	20.4	22.7
	Convincing, inspiring	32.3	18.2
5.	Kind, eager to help	49.0	1.4
	Subdued, tends to give in	0.9	73.7
	Earned attention, admirable	5.4	15.3
	Strong willed, firm	44.7	9.5
6.	Genial, makes friends easily	31.0	21.1
	Restrained, holds back	15.3	41.3
	Exact, precise	31.9	7.4
	Straightforward, outspoken	21.8	30.3
7.	Values information, specialist	27.7	25.0
	Team-oriented, holds back	41.6	7.9
	Temperamental, energetic	10.8	55.3
	Easy-going, tolerant of others	19.8	11.7
8.	Bold, strong-willed	32.6	16.0
	Considerate, well-mannered	32.1	25.2
	Contended, happy	18.6	18.0
	Smooth-talking, good speaker	16.8	40.7
9.	Avoids extremes, sensitive	33.7	18.7
	Easily used, self-sacrificing	11.7	34.1
	Center of the group, lively	39.5	11.5
	Overwhelming, aggressive	15.1	35.7
10.	Inquiring, observant	22.2	41.1
	Thoughtful, service-minded	38.7	6.7
	Strong-willed, goal-oriented	29.2	18.0
	Cheerful, good tempered	9.9	34.2
11.	Humble, a follower	8.5	44.7
	Self-conscious, shy	7.7	40.0
	Confident, bold	28.5	12.4
	Enthusiastic, supportive	55.3	2.9
12.	Aggressive, absolute	4.9	83.4
	Trusts people, good speaker	29.7	9.2
	Understanding, sympathetic	38.4	3.2
	Tolerant, accepting	27.0	4.1

		M	L
13.	Amusing, witty	31.0	9.4
	Punctilious, punctual	24.5	15.5
	Tough, brazen	2.2	68.8
	Unruffled, calm	42.3	6.3
14.	Disciplined, self-controlled	15.0	34.8
	Lively, energetic	15.5	31.5
	Ready to help, well-meaning	48.5	2.3
	Doesn't give in, stubborn	21.1	31.4
15.	Relies on and trusts in people	45.2	10.5
	Peaceful, satisfied	15.1	16.9
	Confident, leaves no room for doubt	25.8	23.2
	Thorough, quiet	13.9	49.4
16.	Wants to win, competitive	30.8	42.9
	Sensitive, empathic	24.9	11.5
	Sociable, likes company	31.7	10.5
	Adaptable, compliant	12.6	35.1
17.	Willing, helpful	21.6	9.7
	Adjustable, adaptable	25.2	16.8
	Enthusiastic, goes along	44.7	11.0
	High flier, self-confident	8.5	62.5
18.	Follower, obeys instructions	21.1	24.9
	Daring, unscrupulous	10.5	62.5
	Delightful, refreshing	15.0	11.2
	Faithful, refreshing	62.5	1.4
19.	Risk-taker, over-confident	11.5	63.8
	Friendly, open	44.7	2.2
	Adjustable, flexible	30.3	4.0
	Moderate, careful	13.5	30.1
20.	Chatty, extrovert	50.1	19.3
	Restrained, moderate	28.3	19.6
	Organized, follows tradition	16.0	20.2
	Uncompromising, firm	5.6	40.9
21.	Restless, seeks change	16.2	58.0
	Reliable, forward looking	31.0	6.5
	Popular, generally liked	12.6	18.7
	Well-organized, thorough	40.2	16.8
22.	Persuasive, convincing	40.7	14.1
	Reserved, shy	5.4	60.9
	Gentle, kind	21.3	10.6
	Individual, a 'character'	32.6	14.4
23.	Conciliatory, agreeable	64.9	2.7
	Stubborn, unshakable	15.7	52.8
	Delightful, attractive	14.4	6.1
	Arouses sympathy, sweet	5.0	38.4
24.	Sense of responsibility, obedient	43.6	6.7
	Thoughtful, restrained	22.9	15.9
	Fun-loving, unruly	8.1	64.1
	Decisive, headstrong	25.4	13.3

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Table 2. Descriptive statistics of scales

Variable		N	Mean	Std Dev	Minimum	Maximum
Dominance	(Graph I)	555	4.32	3.844	0	20.00
Influence	(Graph I)	555	4.83	3.312	0	14.00
Steadiness	(Graph I)	555	5.98	3.180	0	18.00
Compliance	(Graph I)	555	3.50	2.385	0	11.00
Dominance	(Graph II)	555	8.16	4.462	0	19.00
Influence	(Graph II)	555	3.61	3.237	0	16.00
Steadiness	(Graph II)	555	3.43	2.327	0	11.00
Compliance	(Graph II)	555	4.68	2.937	0	13.00

Correlation measures the strength of the linear relationship between two variables. Strength of correlation is indicated by the size of the coefficient. The coefficient can vary from - 1.0 to 1.0. If variable X can be expressed exactly as a linear function of variable Y, then the correlation is 1.0 or -1.0, depending on whether X and Y are directly related or inversely related. A correlation of zero between two analyzed variables means that each variable has no linear predictive ability for the other. If the variables are normally distributed, then a correlation of zero means that the variables are independent of one another. According to the observed correlation coefficient the following interpretations can be made:

+/-	1.0	Perfect correlation
+/-	0.80 to 0.90	Unusually high correlation
+/-	0.70 to 0.79	Very high correlation
+/-	0.60 to 0.69	High correlation
+/-	0.30 to 0.59	Moderate high correlation
+/-	0.20 to 0.29	Very low correlation
+/-	0.00 to 0.19	No correlation

Table 3. Inter-correlations of the scales

GRAPH I	**Dominance**	**Influence**	**Steadiness**	**Compliance**
Dominance	1.000	- 0.028	- 0.705	- 0.433
Influence		1.000	- 0.410	- 0.619
Steadiness			1.000	0.372
Compliance				1.000

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GRAPH II	Dominance	Influence	Steadiness	Compliance
Dominance	1.000	- 0.188	- 0.757	- 0.614
Influence		1.000	- 0.144	- 0.476
Steadiness			1.000	0.465
Compliance				1.000

The results indicate high negative correlation between dominance and both steadiness and compliance. This is in accordance of the theory background (see Extended DISC Diamond in previous pages). Influence is slightly negatively correlated with both dominance and steadiness and more negatively correlated with compliance. Steadiness and compliance are moderately high positively correlated. The results indicate that different dimensions of Extended DISC Theory are quite well indicated by the Extended DISC profiling method.

4.5 Validity

As a next step of the validation process, the results are compared to the following four different patterns of interaction:

1) Dominance - produces activity in an antagonistic environment
2) Influence - produces activity in a favorable environment
3) Steadiness - produces passivity in a favorable environment
4) Compliance - produces passivity in an antagonistic environment.

The purpose of this procedure is to seek how well each item of the questionnaire actually correlates with the particular dimension it is meant to measure. In the following table we give the proportion of the correct answers of each item as compared to particular key dimensions. Items are assigned to each key dimension by comparing the background of the Extended DISC theory and properties of each main style.

We concentrate on Graph II. We first observe distributions of items of the questionnaire related to each item. In table 4 are the proportions of those who actually are not marked that particular item as ”less” answers. Thus this means that those who have marked that particular item as ”less” answer fight against their scored style.

The average percentage related to high dominance is 84 %, to high influence 91 %, to high steadiness 79 % and to high compliance 84 %. By saying ”high” we mean that the particular dimension is above the midline in the graph II. It can be said that the internal consistency of the questionnaire is good. There are few items that cannot differentiate characteristics of the individuals as well as the others do, but as far as the percentages related to each key dimension are concerned, they are high enough to make this kind of conclusion.

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TABLE 4. PROPORTION OF CORRECT ANSWERS (GRAPH II)

1.	Carefree, positive	96
	Flexible, yielding	82
	Argumentative, speaks out	84
	Stable, relaxed	88
2.	Optimistic, positive attitude to live	97
	Adjustable, adaptable	75
	Respectful, obedient	52
	Shows initiative, wants change	100
3.	Sociable, loves company	96
	Conscientious, balanced	96
	Independent, own initiative	100
	Mild, reserved	29
4.	Well-meaning, pleasant	90
	Careful, cautious	70
	Decisive, not easily shaken	96
	Convincing, inspiring	90
5.	Kind, eager to help	99
	Subdued, tends to give in	34
	Earned attention, admirable	86
	Strong willed, firm	99
6.	Genial, makes friends easily	94
	Restrained, holds back	63
	Exact, precise	96
	Straightforward, outspoken	95
7.	Values information, specialist	83
	Team-oriented, fits into group	97
	Temperamental, energetic	75
	Easy-going, tolerant of others	94
8.	Bold, strong-willed	98
	Considerate, well-mannered	84
	Contended, happy	84
	Smooth-talking, good speaker	70
9.	Avoids extremes, sensitive	89
	Easily used, self-sacrificing	70
	Center of the group, lively	97
	Overwhelming, aggressive	90
10.	Inquiring, observant	69
	Thoughtful, service-minded	96
	Strong-willed, goal-oriented	98
	Cheerful, good tempered	85
11.	Humble, a follower	56
	Self-conscious, shy	50
	Confident, bold	98
	Enthusiastic, supportive	99
12.	Aggressive, absolute	37
	Trusts people, good speaker	95
	Understanding, sympathetic	99
	Tolerant, accepting	97
13.	Amusing, witty	98
	Punctilious, punctual	93
	Tough, brazen	63
	Unruffled, calm	96
14.	Disciplined, self-controlled	75
	Lively, energetic	88
	Ready to help, well-meaning	98
	Doesn't give in, stubborn	81
15.	Relies on and trusts in people	93
	Peaceful, satisfied	84
	Confident, leaves no room for doubt	98
	Thorough, quiet	65
16.	Wants to win, competitive	87
	Sensitive, empathic	90
	Sociable, likes company	97
	Adaptable, compliant	78
17.	Willing, helpful	92
	Adjustable, adaptable	93
	Enthusiastic, goes along	90
	High flier, self-confident	73
18.	Follower, obeys instructions	89
	Daring, unscrupulous	80
	Delightful, refreshing	96
	Faithful, responsible	99
19.	Risk-taker, over-confident	76
	Friendly, open	100
	Adjustable, flexible	96
	Moderate, careful	80
20.	Chatty, extrovert	96
	Restrained, moderate	85
	Organized, follows tradition	80
	Uncompromising, firm	94
21.	Restless, seeks change	69
	Reliable, forward looking	96
	Popular, generally liked	91
	Well-organized, thorough	92
22.	Persuasive, convincing	92
	Reserved, shy	39
	Gentle, kind	89
	Individual, a 'character'	98
23.	Conciliatory, agreeable	98
	Stubborn, unshakable	79
	Delightful, attractive	98
	Arouses sympathy, sweet	67
24.	Sense of responsibility, obedient	97
	Thoughtful, restrained	88
	Fun-loving, unruly	47
	Decisive, headstrong	98

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Extended DISC Persona Management System questionnaire is designed according to the Extended DISC Theory described in (Graph 1. Extended DISC Diamond) this report. Another way to look at item internal consistency or item discriminant consistency is to compare how individuals have answered in each of the items in each section to observed Extended DISC major scales. According to Extended DISC theory those individuals who have opposite "high" scales also answer differently in each section. In sections there are a certain amount of the items linked with each of the four scales. Those who, e.g., mark items related to Dominance factor as "B" (best describing) in each section get high Dominance factor in final results of the Extended DISC Persona Management System. Those individuals who don't respond positively to Dominance factor mark some other item as "B" item in this section. Here we compare opposite scales and answers in each section. Thus if individual's final dominant scale is Steadiness (opposite to Dominance in the Extended DISC Diamond), as an example, he or she is not supposed to respond positively to many items related to dominance factor. If he or she does mark Dominance item, it is considered to be a "wrong" answer in this part of the analysis. Otherwise, we consider the answer to be correct.

When analyzing the results we noticed high percentages of correct answers in each of the 24 sections. Total percentage of the correct answers indicates that not only do the questions cause the required negative response, but also the positive response to each question seems to follow the assumptions based on the Extended DISC Theory and Extended DISC Diamond.

TABLE 5. PERCENTAGE OF CORRECT RESPONSES (BOTH NEGATIVE AND POSITIVE) IN EACH QUESTION

Question	Correct	Question	Correct
1	83%	13	100%
2	100%	14	83%
3	67%	15	88%
4	75%	16	100%
5	100%	17	75%
6	100%	18	88%
7	100%	19	100%
8	100%	20	100%
9	100%	21	88%
10	100%	22	100%
11	75%	23	88%
12	83%	24	100%

TABLE 6. PERCENTAGE OF CORRECT RESPONSES IN TOTAL (N=183)

The relative highest negative response	95%
The relative highest positive response	85%

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4.6 Criterion Validity

The following part includes the comparison of distributions of the scales and profiles in three different studies: Finland, Estonia (the Extend DISC Persona Management System) and United States (Target Training: DISC study). It has to be mentioned that these studies are not strictly related to each other. All of them have the DISC theory as their background, but they are collected in various different situations and concern various different groups of employees and individuals. The purpose of this section is to analyze whether or not we can find statistically significant differences between the results of each of the previous studies. If statistically significant differences are found, it definitely doesn't mean that the analyzing tools used in the previous three studies are invalid. Rather the results indicate the differences of each background population.

We first compare Target Training study and the results of the Extended DISC Persona Management System in Finland. Tables 7 and 8 show the results and the distributions of each study concerning Graph I and Graph II distributions respectively.

TABLE 7. GENERAL POPULATION N=679. STYLE ANALYSIS GRAPH I. RESPONSE TO THE ENVIRONMENT. COMPARED WITH THE TARGET TRAINING STUDY (1993).

	Target training study		DISC study	
Combinations	**Number**	**Percent**	**Number**	**Percent**
Dominance only	87	3.1	33	4.9
Influence only	107	3.9	63	9.3
Steadiness only	49	1.8	33	4.9
Compliance only	38	1.4	10	1.5
Dominance and influence	224	8.1	93	13.7
Dominance and steadiness	38	1.4	11	1.6
Dominance and compliance	134	4.8	18	2.7
Influence and steadiness	194	7.0	130	19.1
Influence and compliance	246	8.9	26	3.8
Steadiness and compliance	637	23.0	139	20.5
Dominance, Influence and steadiness	36	1.3	10	1.5
Dominance, Influence and compliance	211	7.6	10	1.5
Dominance, steadiness and compliance	55	2.0	12	1.8
Influence, steadiness and compliance	678	24.5	89	13.1
All above	36	1.3	2	0.3
All below	0	0.0	0	0.0

While investigating the results concerning Graph I, we can note larger proportions in DISC study in those classes where influence is present such as influence only (3.9 % - 9.3 %), Dominance and Influence (8.1 % - 13.7 %) and Influence and Steadiness (7.0 % - 19.1 %). On the other hand in those classes where more characteristics are present, we can observe higher proportions in Target training study. The distributions differ from each other statistically significantly ($p<0.0001$).

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Distributions in these two tables cannot be compared by using the normal chi-square test because there are empty cells in the tables. It is also meaningless to combine different cells because of the classifying criteria used according to background theory. By simply looking at the percentages and proportions it can be said that both tools give similar kind of distributions with only minor differences.

TABLE 8. GENERAL POPULATION N=679. STYLE ANALYSIS GRAPH II. RESPONSE TO THE ENVIRONMENT. COMPARED WITH THE TARGET TRAINING STUDY (1993).

	Target training study		DISC study	
Combinations	**Number**	**Percent**	**Number**	**Percent**
Dominance only	32	1.2	0	0.0
Influence only	28	1.0	1	0.1
Steadiness only	26	0.9	3	0.4
Compliance only	8	0.3	0	0.0
Dominance and influence	356	12.8	43	6.3
Dominance and steadiness	87	3.1	24	3.5
Dominance and compliance	71	2.6	11	1.6
Influence and steadiness	334	12.1	56	8.2
Influence and compliance	59	2.1	3	0.4
Steadiness and compliance	477	17.2	133	19.6
Dominance, Influence and steadiness	203	7.3	87	12.8
Dominance, Influence and compliance	97	3.5	25	3.7
Dominance, steadiness and compliance	178	6.4	42	6.2
Influence, steadiness and compliance	791	28.5	250	36.8
All above	24	0.9	1	0.1
All below	0	0.0	0	0.0

The number of the observations In the DISC study may not be high enough to indicate whether actual differences occur or not. The observed differences in the previous two tables can be explained by the characteristics of the analyzed groups of people.

We also can compare distributions in Finland and Estonia as well as distribution in the USA. The following figure shows the distributions in Finland and Estonia by using the Extended DISC Diamond presentation method.

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FIGURE 3. EXTENDED DISC DIAMOND PRESENTATION, FINNISH POPULATION (N=5270)

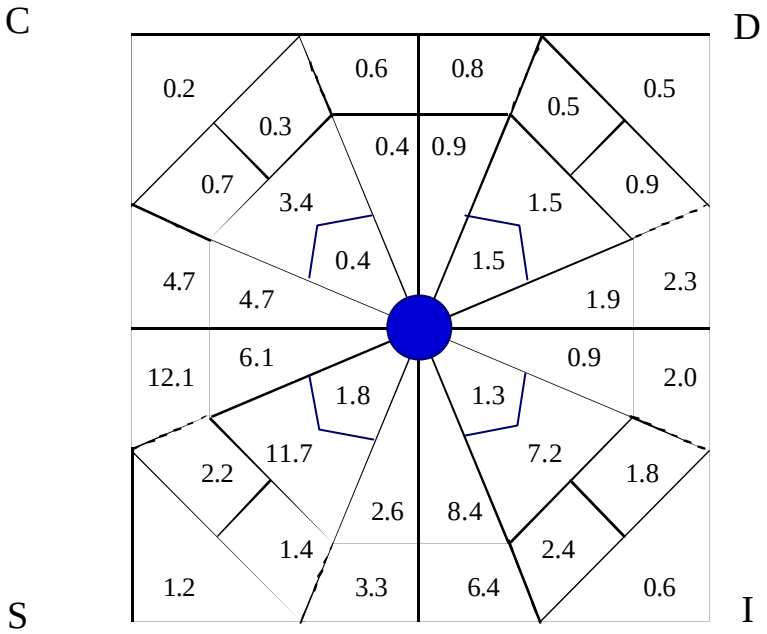
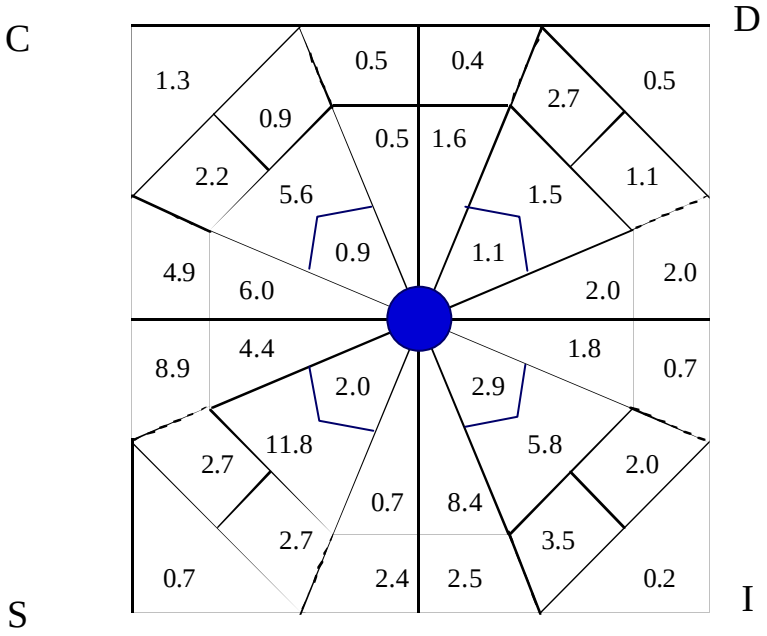


FIGURE 4. EXTENDED DISC DIAMOND PRESENTATION, ESTONIAN POPULATION (N=550)



We compare now the distributions of the Finnish and Estonian population by using the normal Chi-square test. First we analyze the most dominant factor, dominance, influence, steadiness or compliance. Then, as in previous figures we divide the Extended DISC Diamond into four separate areas respectively. We include also results of Target Training -study and get the following distributions and table:

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TABLE 9. THE PROPORTIONS OF THE DOMINANT SCALES IN FINNISH AND ESTONIAN POPULATIONS.

	Dominance		Influence		Steadiness		Compliance	
	N	%	N	%	N	%	N	%
Finland	569	10.8	1634	31.0	2234	42.4	812	15.4
Estonia	71	12.9	153	27.8	200	36.3	125	22.8
United States	349	18.0	544	28.0	776	40.0	272	14.0
Total	989	12.8	2331	30.1	3210	41.4	1209	15.6

p-value: <0.0001

It is impossible to say definitely whether or not there actually are differences in background populations. According to the results and data the following interpretations can be made. The interpretation of previous result is not so evident. The count of each population varies quite a lot. In the United States the dominance factor is more usual than in the other two populations. On the other hand in the Estonian population the compliance factor is more usual than in Finland or in the United States.

The next step of this analysis is to compare individuals own predictions of their profiles to the actual results of the Extended DISC Persona Management System. By this we measure the predictive validity of the Extended DISC tool. The setup of the test is as follows. Individuals are asked to fill out the Extended DISC questionnaires which are then analyzed by the Extended DISC Personal Software system. The Extended DISC Theory is then explained to individuals and they are asked to define their own major scale or scales (profile) according to their self-knowledge and experiences. After this the results given by the Extended DISC Professional Software System are compared to the evaluations of each individual. All scales (D, I, S and C) are compared separately. The following table shows the results of this test. In the table 'C' denotes a correct answer (own evaluation is the same as the result from the software program) and 'W' denotes a wrong answer (own evaluation is different from the software result).

TABLE 10. INDIVIDUALS OWN ASSUMPTIONS COMPARED TO EXTENDED DISC PERSONA MANAGEMENT SYSTEM RESULTS.

	High D	**High I**	**High S**	**High C**
Number of C's	37	121	190	141
Number of W's	10	11	7	52
Proportion of the C's	78.7	91.7	96.5	73.1
	Low D	**Low I**	**Low S**	**Low C**
Number of C's	148	65	17	26
Number of W's	25	23	6	1
Proportion of the C's	85.5	73.9	73.9	96.3

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According to these results the proportion of the 'hits' between the individuals own evaluations and the results of the Extended DISC tool is 83.7 %. Both high and low scales are well evaluated by the individuals. The results show high predictive validity of the Extended DISC Tool.

4.7 Reliability

In this section the reliability of the Extended DISC scales is analyzed. The data of this section concerns 124 individuals that have completed the Extended DISC questionnaire twice. The time lag between these two experiments varies individually from between three to 24 months. The basic idea of reliability measurement is to estimate the variation of different scales between two samples of the same individual. If the first results of the system showed that he/she is dominant and influencing and the next that he/she is steady and compliant and if the profiling system is meant to measure consistent and "relatively enduring" predispositions, we would claim that the Extended DISC is doing a poor job of measurement.

As described earlier, there are many tools based on a similar kind of structure; 24 sections and all together 96 items or adjectives.

The reliability of an analyzed scale is a measure of the extent to which an individual would get similar scores on parallel forms of the same test. When we measure a group of individuals at different times and compare the scores, we are assessing test-retest reliability.

The idea behind test-retest is that one should get the same score on test 1 as on test 2. The three main components to this method are as follows:

1) Implementation of measurement instrument at two separate times for each subject.
2) The correlation between the two separate measurements of each scale is computed.
3) The assumptions that there is no change in the underlying condition (or trait to be measured) between test 1 and test 2.

We can measure reliability by giving the same analysis questionnaire more than once to the same individuals. It is also possible to measure reliability by measuring the similarity between items in the scale. When the analyzed scale is reliable, the items must have some degree of similarity to each other. Also, if more items are present, the closer we get to the true score. This kind of reliability is called internal consistency.

The following results concern test-retest validity and also basic results of reliability. The count of the used observations is 124.

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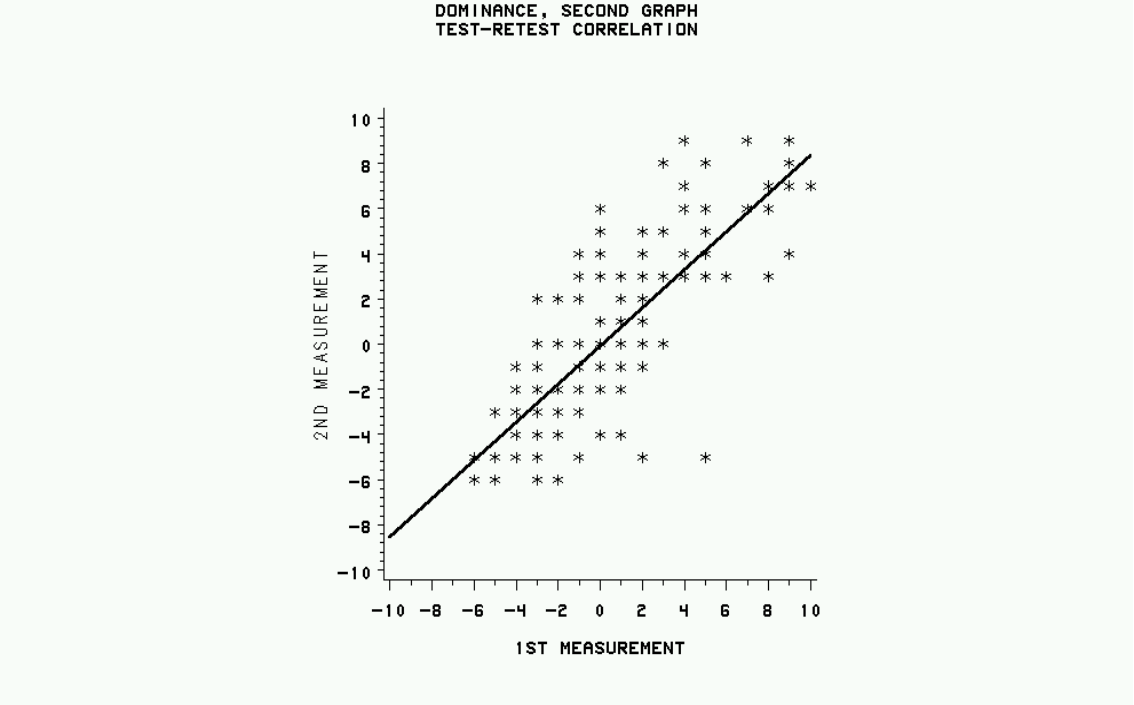
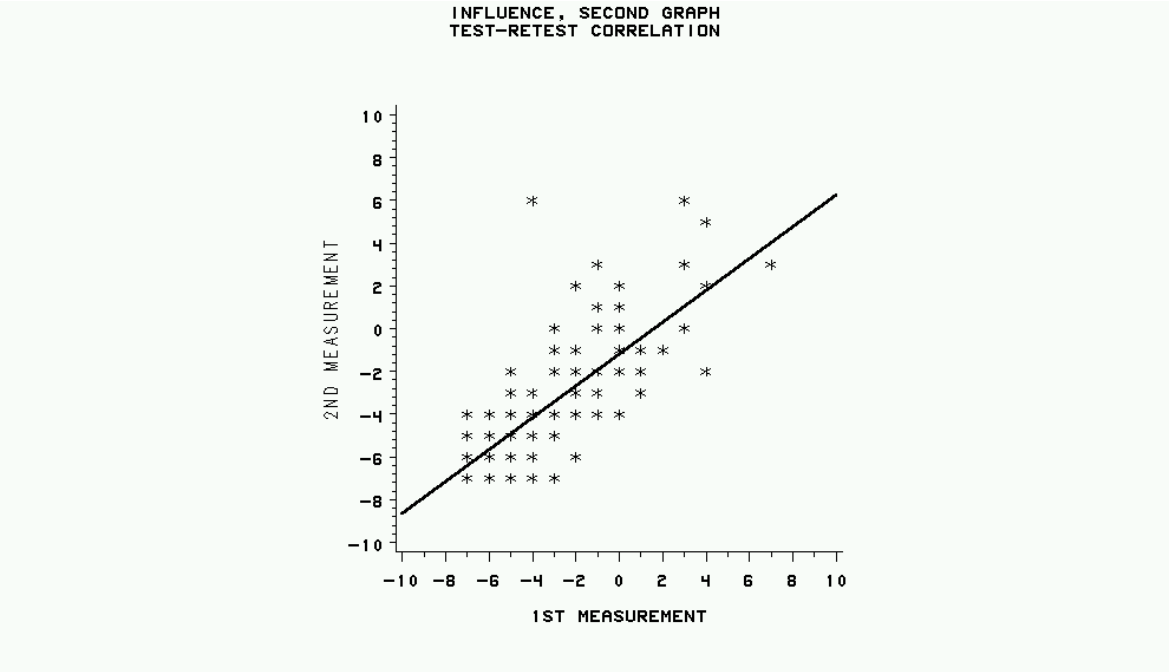
GRAPH 1. RELIABILITY ANALYSIS: SCATTER PLOT DOMINANCE (TES T 1) VS. DOMINANCE (TEST 2).



Graph 2. Reliability analysis: Scatter plot Influence (Test 1) vs. Influence (Test 2).



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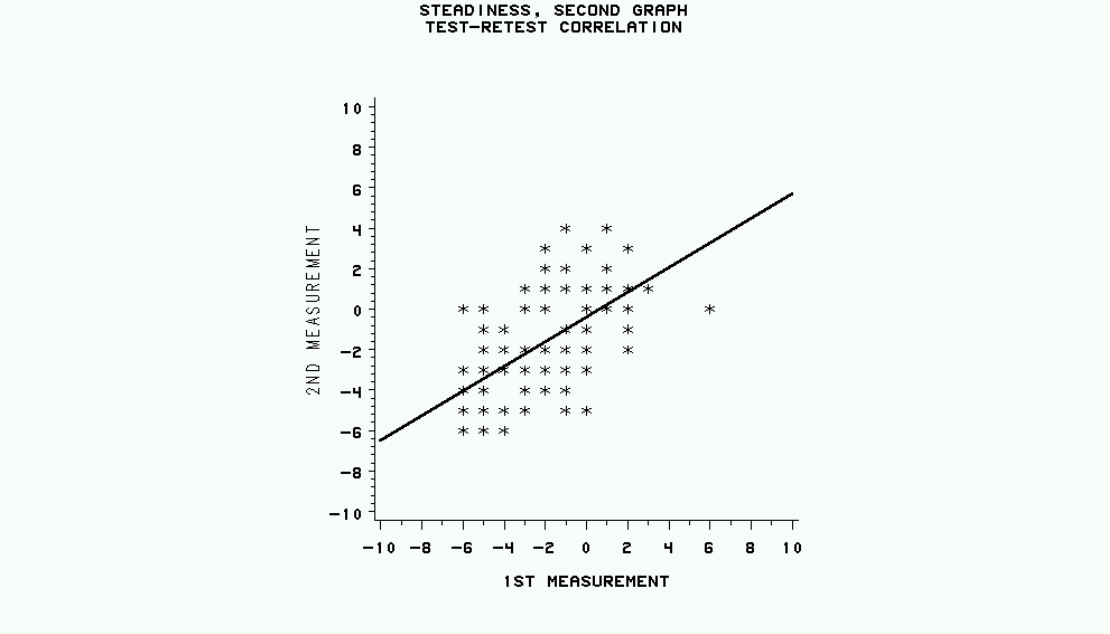
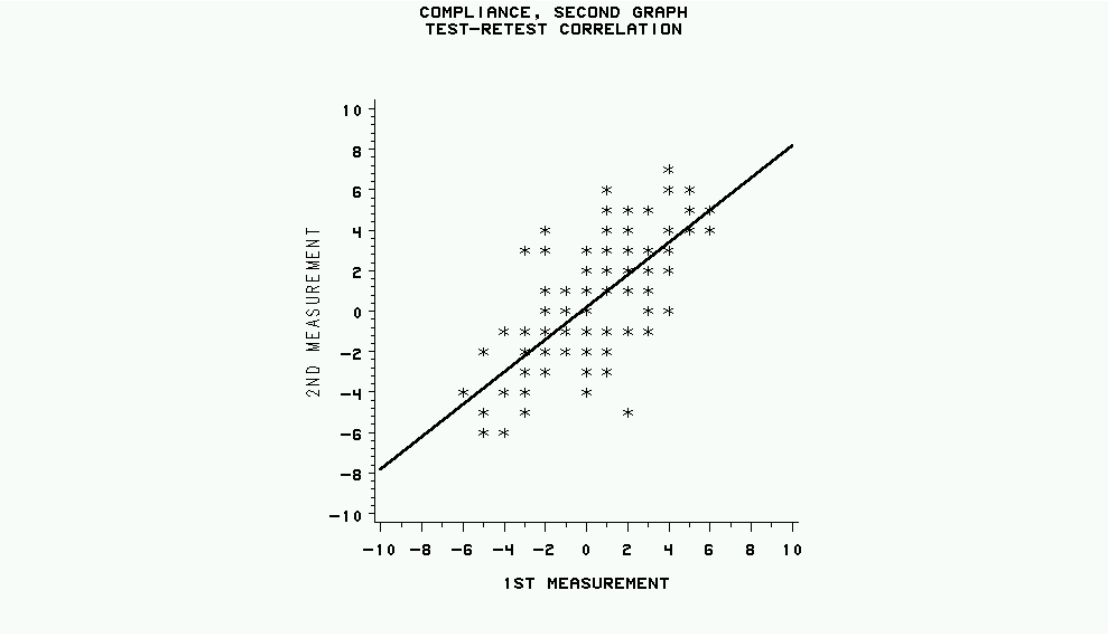
GRAPH 3. RELIABILITY ANALYSIS: SCATTER PLOT STEADINESS (TEST 1) VS. STEADINESS (TEST 2).



Graph 4. Reliability analysis: Scatter plot Compliance (Test 1) vs. Compliance (Test 2).



Figures shown above illustrate high positive correlation between the scales when comparing the results of Test 1 and Test 2. Steadiness varies most between these two tests. This result is in accordance to the Extended DISC theory. Steadiness measures stress factors and thus it is natural to note even high differences between the two observed tests. In the following table the correlation

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between two tests are shown for all the four scales in Graph 1 and Graph 2 of the Extended DISC tool.

We can make the following notes on the results of the test-re-test analysis. The Extended DISC Persona Management System seems to measure quite stable dominance and compliance factors in Graph I and Graph II. The most significant differences between the first and second measurements can be found in the factors Influence and Steadiness. According the Extended DISC theory, the Steadiness factor measures individually stability and stress-related factors. Thus, it is obvious that it may vary according to individual situations and in whole population more than the other factors. The influence factor measures can also vary a lot according the personal situation. Thus we can state as an implication that the observed differences in the correlation of these two scales are natural. The fact that the Dominance and Compliance factors are quite stable can be interpreted by the high value of the correlation coefficient. In order to look at how significantly the scores of each factor vary from one test to the other we can also analyze the differences in the mean of original test cores by using the normal t-test method.

TABLE 11. CORRELATION OF THE TEST-RETEST ANALYSIS.

First test		**Second test**			
Graph I		Dominance	Influence	Steadiness	Compliance
Dominance	r=	**0.7364**	- 0.1105	- 0.6229	- 0.3924
	p=	0.0001	0.2219	0.0001	0.0001
Influence	r=	- 0.1223	**0.5433**	- 0.1062	- 0.1567
	p=	0.1760	0.0001	0.2406	0.0822
Steadiness	r=	- 0.5563	- 0.1566	**0.7150**	0.3078
	p=	0.0001	0.0824	0.0001	0.0005
Compliance	r=	- 0.3524	- 0.2379	0.3388	**0.5252**
	p=	0.0001	0.0078	0.0001	0.0001
Graph II		Dominance	Influence	Steadiness	Compliance
Dominance	r=	**0.7955**	- 0.0816	- 0.6129	- 0.4614
	p=	0.0001	0.3674	0.0001	0.0001
Influence	r=	- 0.0369	**0.7201**	- 0.1254	- 0.4251
	p=	0.6841	0.0001	0.1654	0.0001
Steadiness	r=	- 0.6030	- 0.1446	**0.5859**	0.4176
	p=	0.0001	0.1091	0.0001	0.0001
Compliance	r=	- 0.4857	- 0.4500	0.3846	**0.7267**
	p=	0.0001	0.0001	0.0001	0.0001

In test one the average score of the Dominance factor is 6.14 and in the second test 6.03. The difference is not statistically significant (p=0.8208). The Influence factor has the average score of 3.81 in the first test and 3.41 in the second one. Once again the difference is not statistically

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significantly different (p=0.2747). The Steadiness factor has the average of 4.11 in the first test and 4.44 in the second one. According to the t-test no statistically significant differences can be observed (p=0.2887); finally the average score of the Compliance factor in the first test is 6.22 and in the second test 6.34. Again, in the last factor no statistically significant differences can be observed (p=0.7444). The variation between the first and the second tests is largest in the Influence and Steadiness factors according to mean value analysis.

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5 Overall Results

5.1 Global Population

The global population consisted of 239.171 persons representing 64 native languages and 46 countries.

The comparison populations used in this study are:
- Extended DISC Global validation 2013 population (n= 144.703)
- Extended DISC Global validation 2011 population (n= 89.504)
- Extended DISC Global validation 2009 population (n= 77.811)
- Extended DISC Global validation 2008 population (n= 63.684)
- Extended DISC Global validation 2007 population (n= 57.955)
- Extended DISC Global validation 2006 population (n= 44.235)
- Extended DISC Global validation 2005 population (n= 26.786)
- Extended DISC Global validation 2004 population (n= 21.947)
- Extended DISC Global validation 2003 population (n= 20.865)
- Extended DISC Global validation 2002 population (n= 19.866)

The following language versions of Extended DISC Personal Analysis were included in the validation study (the language codes used in this study).

- Albanian (ALB)
- Arabic (ARA)
- Bulgarian (BUL)
- Catalan (CAT)
- Chinese (Hong Kong) (CHK)
- Chinese Simplified (CHI)
- Chinese (Traditional) (TWN)
- Croatian (CRO)
- Czech (CZE)
- Danish (DAN)
- Dutch (HOL)
- English (Australasia) (AUS)
- English (Canada) (ECA)
- English (Caribbean) (ENC)
- English (India)
- English (Nigeria) (NIG)
- English (South Africa) (RSA)
- English (US) (ENG)
- English (UK) (EUK)
- Estonian (EST)
- Finnish (FIN)
- Flemish (FLE)
- French (Canada) (FCA)
- French (Caribbean) (FRR)
- French (France) (FRA)
- German (Austria)
- German (GER)
- German (Switzerland)
- Greek (GRE)
- Gujarati (GJR)
- Hebrew (HEB)
- Hindi (HIN)
- Hungarian (HUN)
- Indonesian (IND)
- Italian (ITA)
- Japanese (JAP)
- Kannada (KAN)
- Korean (KOR)
- Kurdish (KUR)
- Latvian (LAT)
- Lithuanian (LIT)
- Macedonian (MAC)
- Malay (MAL)
- Maori (MAO)
- Marathi (MAR)
- Norwegian (NOR)
- Polish (POL)
- Portuguese (Brazil) (POB)
- Portuguese (Portugal) (POR)
- Romanian (ROM)
- Russian (Kazakhstan) (KAZ)
- Russian (RUS)

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- Slovak (SLK)
- Slovene (SLN)
- Spanish (Caribbean) (SPC)
- Spanish (Spain) (SPA)
- Spanish (Latin America) (SPL)
- Swahili (SWA)
- Swedish (Finland) (SWF)
- Swedish (Sweden) (SWE)
- Thai (THA)
- Tok Pisin (TPI)
- Turkish (TUR)
- Vietnamese (VIE)

The material was collected from the same countries as the language indicates. For Spanish (Latin America), the population represents well all the Latin American countries. Spanish (Caribbean) is collected mostly from Dominican Republic. English (Australasia) represents equally Australia and New Zealand. Russian material is collected mostly from Russia, Ukraine and Belorussia. English (Caribbean) data is collected from mostly from the Caribbean island countries.

5.1.1 Global Distribution – DISC

The following table compares the global DISC distribution between 2002 and 2015.

Table. Global DISC Distribution – Annual Comparison

	2015	2013	2011	2009	2008	2007	2006	2005	2004	2003	2002
D	12,3	11,8	13,2	12,1	12,8	12,3	12,0	13,1	13	13	14
I	26,4	29,8	29,6	31,3	31,4	31,5	30,9	31,0	29	29	27
S	30,9	29,9	28,9	30,4	30,2	30,8	31,6	30,9	29	32	31
C	30,4	28,5	28,2	26,2	25,6	25,4	25,4	25,0	29	26	28

The correlation between years 2013 and 2015 is .999 and F-test value is .983

The following tables compare the global DISC distribution on the Extended DISC Diamond [1] between years 2013 and 2015.

Table. Extended DISC Diamond – Global Distribution 2013

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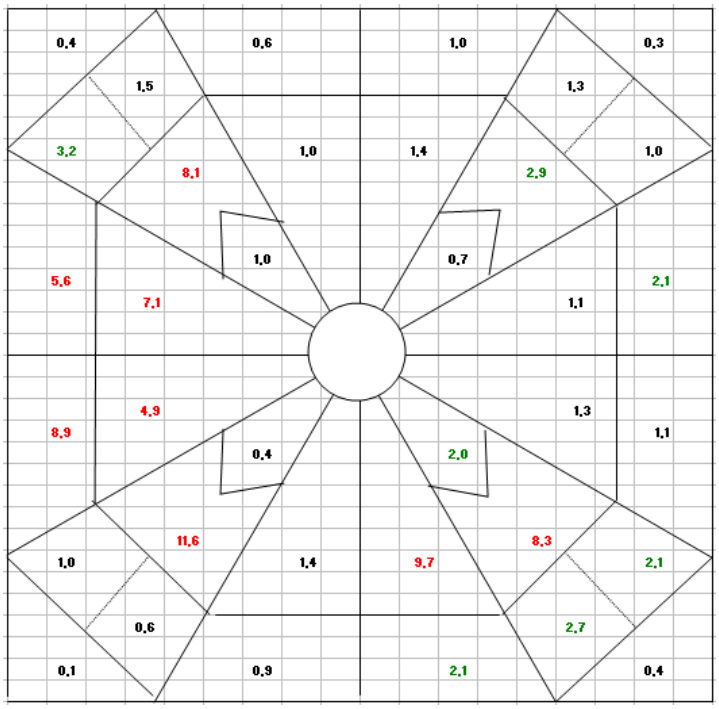
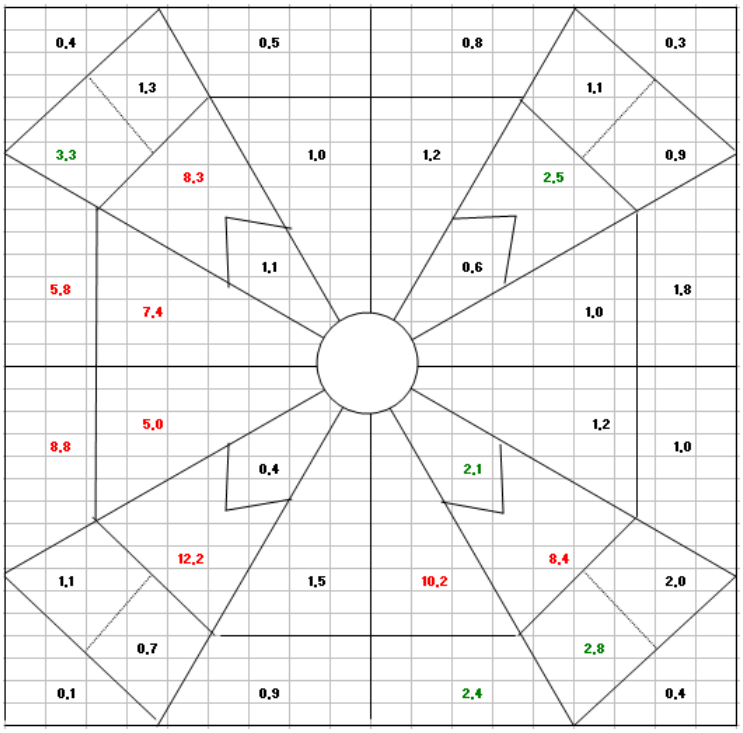


Table. Extended DISC Diamond – Global Distribution 2015



The following table compares the distribution of results in the different areas of the Extended DISC Diamond and shows their correlations.

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D
0,9982
I
0,9989
S
0,9994
C
0,9996

Conclusions: There are no signs of anything changing in the instrument or the environment where it has been used. This supports the claim that the instrument was working with the same high validity as it did in the previous year.

5.1.2 Global Distribution – DISC by Age Group

The results (DISC distribution) were compared against the age of the respondents.

All the previous studies (since the Student Research in 1994) have supported the claim that the global population is changing its most preferred natural response style [2] from left to right, and especially to the lower right corner of the Extended DISC Diamond.

D	<1950's	<1960's	1960's	1970's	1980's	1990's
2015		10	11	12	10	8
2013	10	11	13	14	11	8
2011	10	12	13	14	10	10
2010	11	10	8	11	7	5
2009	10	12	14	13	11	7
2008	13	12	13	15	12	
2007	16	12	14	14	9	
2006	12	13	13	12	10	
2005	11	14	14	12		

I	<1950's	<1960's	1960's	1970's	1980's	1990's
2015		26	29	29	32	33
2013	27	26	29	30	34	38
2011	31	28	30	31	37	36
2010	27	28	32	32	36	40
2009	28	29	30	32	33	38
2008	28	29	30	33	35	
2007	26	30	32	33	37	

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2006	26	28	30	34	38	
2005	24	28	31	36		

S	<1950's	<1960's	1960's	1970's	1980's	1990's
2015		36	32	30	29	30
2013	35	34	31	28	28	30
2011	35	34	30	27	27	32
2010	35	35	32	29	29	29
2009	34	34	31	29	30	33
2008	32	33	31	29	30	
2007	33	31	28	29	29	
2006	34	33	31	30	29	
2005	36	34	30	28		

C	<1950's	<1960's	1960's	1970's	1980's	1990's
2015		28	28	29	30	29
2013	28	29	27	28	27	25
2011	25	27	27	27	26	21
2010	28	27	28	28	28	26
2009	28	26	25	26	26	22
2008	26	26	25	25	23	
2007	26	27	27	25	24	
2006	28	27	28	24	23	
2005	30	24	25	24		

The size of dominant D population (in 2007 study) born before 1950's was too small to produce statistically reliable data. Similarly the size of the population born in 1990's (in 2009 study) is too small to draw final conclusions. Before 2015 study, the people born before 1950 were separated in own column.

Table. Extended DISC Diamond – Global Distribution by Age Group 2013

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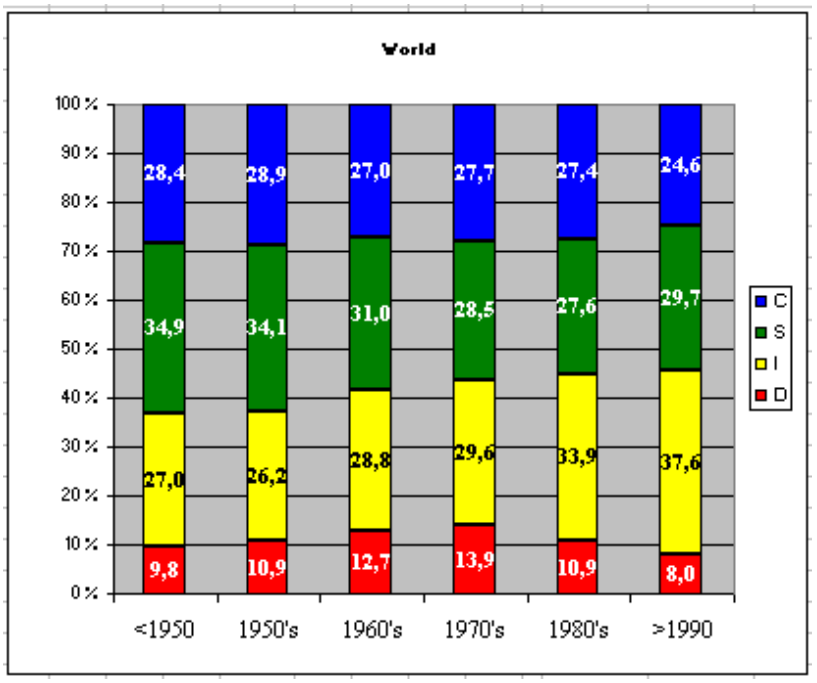
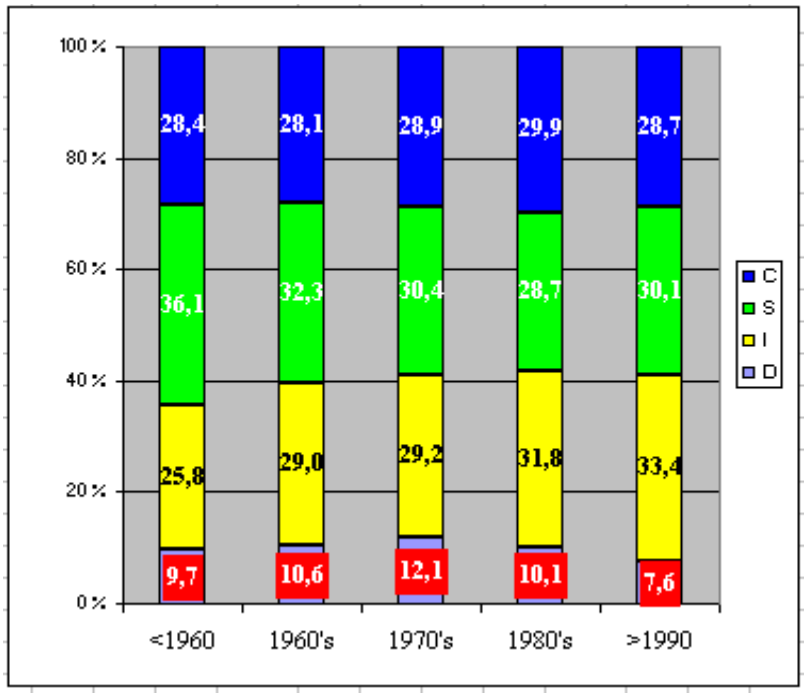


Table. Extended DISC Diamond – Global Distribution by Age Group 2015



Conclusions: The findings continue supporting the claim that the instrument is measuring the same phenomenon as it has done in the past. It also supports the finding that the global population is changing toward a higher preference on I. An interesting finding can also be found in the youngest population with and increase in S.

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5.1.3 Global Distribution – DISC vs. Gender

The results (DISC distribution) were compared against the gender of the respondents. All the previous studies have shown a difference between female and male population.

Table. DISC Distribution vs. Gender

Male	2015	2013	2011	2010	2009	2008	2007	2006
D	13	14	14	17	14	15	15	13
I	28	28	30	29	29	29	30	29
S	29	28	27	29	29	28	28	32
C	30	30	29	28	28	27	27	26

Female	2015	2013	2011	2010	2009	2008	2007	2006
D	8	9	9	9	8	10	9	10
I	32	32	34	34	35	35	34	34
S	33	32	31	32	32	33	32	31
C	28	25	25	24	25	23	25	24

Table. DISC Distribution vs. Gender - 2013

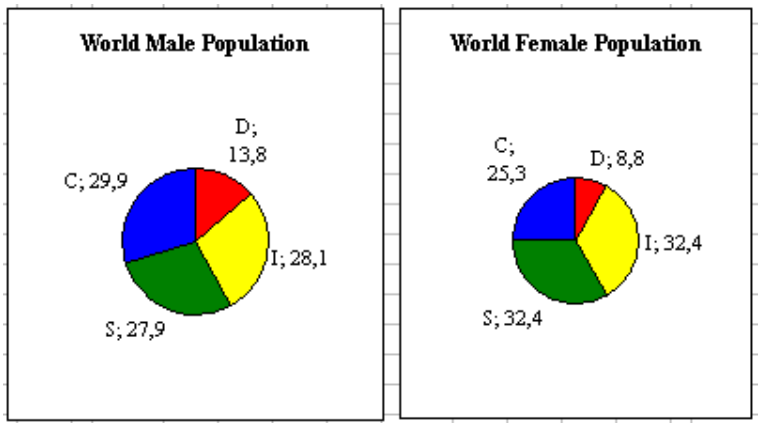

Table. DISC Distribution vs. Gender - 2015

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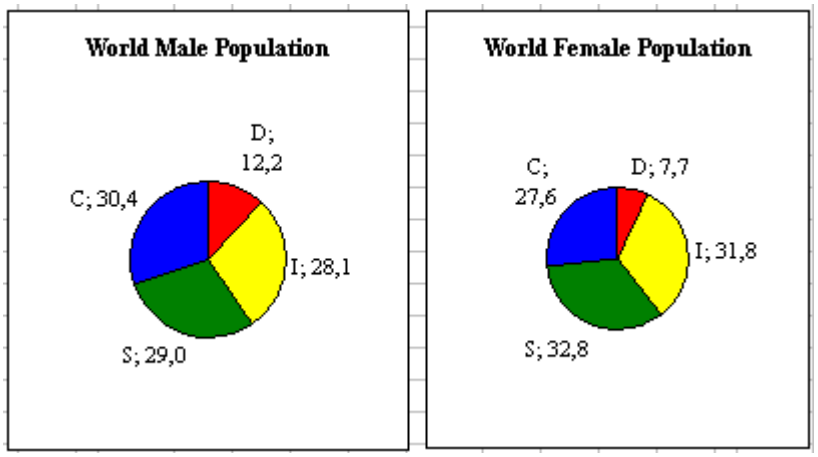

Conclusions: The finding supports the outcome of previous studies: D (clearly) and C (slightly) are more common in the male population, whereas I and S are more common in the female population.

Overall conclusion from the global comparison

The results clearly prove that the Extended DISC Personal Analysis worked with the same high validity in 2015 as it has done in the previous years. All the distributions are similar to what they have previously been, and all trends have continued to develop the same way as they have done in the past.

The results support the claim that Extended DISC Personal Analysis was in 2015 as a good of an instrument as it has previously been, and that the environment has not changed in any direction that would require adjustment in the basic construct of the instrument.

5.2 Language Distribution

5.2.1 DISC Distribution by Language

To check the consistency of the results by each questionnaire language, each language was analyzed separately and, if available, compared to previous studies. All of the studies consist of more than 500 persons.

ARA	2015		
D	7,4		
I	24,4		
S	29,7		
C	38,6		
Correlat	#DIV/0!	F-Test	#DIV/0!

CAT	2015	2013	2006-08
D	11,5	10,3	10,3
I	26,6	28,3	25,7

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S	34,1	32,6	33,6
C	27,9	28,8	30,3
Correlat	0,9880	F-Test	0,9488

CHI	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2004**
D	10,8	12,4	10,4	11,6	11,1	8,1	9,6	8,8
I	17,3	16,8	19,6	20,4	17,8	23,6	30,7	31,1
S	44,3	44,9	45,4	45,1	46,2	50,6	45,9	44,7
C	27,6	25,8	24,5	23	24,8	17,7	13,8	15,4
Correlat	0,9950	F-Test	0,9823					

AUS	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2005**
D	7,7	7,6	7,2	13,8	12,6	13,4	12,0	15,8
I	32,2	32,6	34,1	31,4	33,6	35,6	30,9	32,1
S	33,6	32,7	32,3	29,7	30,7	27,9	31,6	28,2
C	26,5	27,1	26,3	25,1	23,1	23,0	25,4	23,9
Correlat	0,9984	F-Test	0,9953					

DAN	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
D	8,5	10,0	9,5	9,5	10,0	7,9	8,6	7,1	5,7
I	23,4	23,7	25,6	27,5	28,8	32,1	31,1	29,0	33,4
S	47,1	45,0	44,0	43,8	42,5	42,6	42,6	46,4	45,2
C	21,0	21,3	20,9	19,2	18,8	17,4	17,7	17,6	15,7
Correlat	1,0000	F-Test	0,8757						

ENC	**2015**	**2013**	**2009**	**2008**	**2007**	**2006**	**2005**	**2001**
D	10,6	12,2	13,4	17,4	6,0	6,8	14,8	11,1
I	19,1	19,9	19,4	12,8	15,1	23,0	15,7	13,3
S	31,4	30,0	30,9	26,8	33,7	27,6	30,5	29,2
C	28,9	37,8	36,2	43,0	45,2	42,6	39,0	46,4
Correlat	0,9203	F-Test	0,7952					

ECA	**2015**	**2013**	**2009**	**2008**	**2007**	**2006**	**2003-05**
D	8,3	7,8	12,4	12,9	9,6	11,1	12,8
I	33,0	36,6	36,1	32,6	36,4	29,9	39,5
S	33,8	32,3	26,3	27,9	29,3	31,4	25,5
C	24,8	23,3	25,2	26,6	24,8	27,5	22,2
Correlat	0,9831	F-Test	0,9071				

EIN	**2015**	**2013**	
D	14,0	12,6	
I	27,9	27,8	
S	28,5	31,1	

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C	29,5	28,5	

ENG	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
D	11,0	12,3	13,4	11,8	14,1	14,0	13,9	14,0	13,6
I	31,6	31,6	33,1	32,6	32,5	31,7	32,5	32,1	28,4
S	28,2	28,0	26,6	27,4	26,8	27,0	26,6	27,6	29,1
C	29,1	28,1	26,9	28,2	26,6	27,3	27,0	26,3	29,0
Correlat	0,9983	F-Test	0,8880						

EUK	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2005**	**2002-04**
D	15,3	16,7	17,9	21,5	17,4	16,9	17,0	20,2	20,2
I	29,8	30,3	30,5	31,5	30,9	32,7	28,6	28,6	32,0
S	29,2	28,6	28,0	27,1	26,8	27,1	28,0	28,6	28,1
C	25,8	24,4	23,6	20,0	24,9	23,3	26,3	22,2	19,8
Correlat	0,9867	F-Test	0,8701						

FCA	**2015**
D	6,0
I	39,0
S	37,0
C	18,0
Correlat	#DIV/0!	F-Test	#DIV/0!

FIN	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
D	7,5	7,1	9,1	7,6	8,8	10,0	10,1	9,2	10,0
I	33,0	32,2	35,9	35,4	35,6	38,2	33,2	31,3	33,2
S	43,9	43,9	38,9	41,2	40,0	37,6	39,4	43,2	41,4
C	15,7	16,8	16,2	15,9	15,6	14,2	17,4	16,2	15,4
Correlat	0,9988	F-Test	0,9864						

FRA	**2015**	**2005-09**
D	9,4	12,3
I	36,7	36,9
S	33,4	30,6
C	20,5	20,2

GER	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2005**	**2002-04**
D	6,8	6,6	6,7	8,8	7,4	6,4	9,3	8,3	8,7
I	48,4	49,2	46,0	47,0	47,4	51,3	42,8	50,6	56,0
S	16,7	16,2	17,8	17,6	18,0	18,4	22,3	20,1	16,4
C	28,1	27,9	29,4	26,6	27,3	23,9	25,6	20,9	18,8
Correlat	0,9999	F-Test	0,9659						

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GRE	2015
D	13,0
I	26,5
S	26,6
C	33,9
Correlat	#DIV/0!
F-Test	#DIV/0!

HOL	2015	2013	2002-08
D	11,4	11,6	11,2
I	32,0	27,9	28,9
S	35,9	39,0	38,2
C	20,7	21,5	21,7
Correlat	0,9652	F-Test	0,9586

ITA	2015
D	3,5
I	46,9
S	33,3
C	16,2
Correlat	#DIV/0!
F-Test	#DIV/0!

JAP	2015
D	7,6
I	26,9
S	40,8
C	24,8
Correlat	#DIV/0!
F-Test	#DIV/0!

KOR	2015	2013	2011	2009	2008	2007	2006	2005	2004
D	12,5	11,5	2,4	6,2	3,3	4,9	4,7	6,4	7,4
I	33,0	31,6	53,0	32,6	41,6	30,5	25,4	29,0	26,0
S	36,0	40,2	33,3	44,2	39,2	43,9	46,5	45,2	47,7
C	18,5	16,8	11,3	16,9	15,9	20,8	23,4	19,3	18,9
Correlat	0,9860	F-Test	0,8036						

NIG	2015
D	10,5
I	24,3
S	33,9
C	31,3

NOR	2015	2009	2003-08

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D	2,3	2,1	2,8
I	31,6	35,9	29,2
S	47,8	44,8	51,5
C	18,3	17,1	16,5

POB	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2002-05**
D	12,4	14,1	11,9	14,0	15,6	14,9	12,9	18,8
I	15,2	14,9	15,0	13,8	15,2	16,2	19,9	18,5
S	18,5	17,5	16,9	18,6	17,0	15,4	19,0	17,1
C	53,9	53,5	56,2	53,6	52,0	53,5	48,1	45,6
Correlat	0,9983	F-Test	0,9754					

POL	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
D	15,3	17,5	16,4	18,5	19,3	16,3	18,6	21,0	25,0
I	19,0	20,9	22,4	24,5	22,9	24,1	23,5	22,0	23,1
S	40,8	39,0	38,4	36,3	37,2	38,2	37,7	33,3	31,8
C	24,9	22,6	22,8	20,7	20,6	21,3	20,1	23,7	20,1
Correlat	0,9868	F-Test	0,7968						

RUS	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2002-06**
D	23,0	21,4	26,8	25,2	23,1	22,4	21,4
I	16,9	16,4	17,2	18,1	19,0	16,0	19,7
S	33,9	36,1	31,9	32,2	34,7	36,6	31,9
C	26,2	26,1	24,1	24,5	23,1	24,9	27,0
Correlat	0,9931	F-Test	0,7860				

SPA	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2002-05**
D	6,6	7,4	7,6	7,1	7,0	8,1	6,8	11,5
I	30,3	29,6	34,1	38,0	35,9	40,0	35,0	30,5
S	33,2	31,2	28,0	27,0	35,2	24,0	27,7	25,1
C	30,0	31,8	30,3	27,9	31,9	27,9	30,5	32,9
Correlat	0,9916	F-Test	0,9370					

SPC	**2015**	**2006-09**
D	6,7	6,4
I	24,3	21,4
S	33,9	36,1
C	35,1	36,1

SPL	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2005**	**2004**
D	7,2	12,0	11,9	11,7	11,6	12,2	12,2	14,4	14,2
I	31,6	29,5	29,8	31,9	32,3	34,4	34,4	28,7	29,2
S	20,4	17,4	15,6	15,7	17,4	16,1	16,9	15,5	14,7

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C	40,9	41,1	42,7	40,7	38,8	37,3	36,5	41,4	41,9
Correlat	0,9742	F-Test	0,8573						

SWE	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2002-05**
D	6,9	7,0	5,8	3,5	1,6	4,5	3,7	5,4
I	45,6	45,4	45,3	44,4	51,5	57,8	63,3	62,1
S	29,9	28,3	31,0	35,5	35,7	26,2	21,0	22,0
C	17,6	19,3	17,9	16,6	11,3	11,5	12,0	10,6
Correlat	0,9970	F-Test	0,9628					

SWF	**2015**
D	3,9
I	52,1
S	27,6
C	16,4
Correlat	#DIV/0!	F-Test	#DIV/0!

THA	**2015**	**2013**	**2011**	**2009**	**2008**	**2007**	**2006**	**2005**	**2002-04**
D	14,4	15,3	14,2	13,1	15,9	8,5	14,7	13,3	14,4
I	23,4	25,8	23,4	21,5	22,9	21,5	20,7	20,7	28,5
S	37,8	37,0	38,4	42,0	40,4	40,0	40,7	42,9	40,6
C	24,5	21,9	23,9	23,4	20,8	30,0	23,9	23,1	16,5
Correlat	0,9752	F-Test	0,9260						

TWN	**2015**	**2013**	**2011**	**2009**	**2008**	**2006-07**	**2003**
D	8,0	9,6	7,1	7,5	9,9	6,5	4,1
I	19,4	18,0	21,8	19,1	21,7	26,7	23,7
S	44,8	43,2	45,3	43,7	42,1	40,8	45,9
C	27,8	29,3	25,8	29,6	26,2	26,0	26,3
Correlat	0,9950	F-Test	0,9209				

VIE	**2015**
D	13,9
I	23,8
S	38,5
C	23,8

Note! The 2002-04 GER population was biased as people from sales environment were excessively represented.

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The inter-language correlations are:

	2013	2015
D <=> I Correlation	-0,6295	-0,1643
D <=> S Correlation	-0,0387	-0,1979
D <=> C Correlation	0,2867	-0,2326
I <=> S Correlation	-0,3534	-0,0746
I <=> C Correlation	-0,5601	-0,6261
S <=> C Correlation	-0,4930	-0,5644
Average	**-0,2980**	**-0,3100**

Conclusions:

As the average intra-language correlation (between different annual samples) is ,987 and the global correlation between (between different years) is ,970813, it supports the claim that Extended DISC Personal Analysis is a consistent and reliable instrument.

As the average intra-language correlation (between different annual samples) is .987 and the inter-language correlation is -,310, it is safe to draw the conclusion that Extended DIS Personal Analysis is able to go beyond the cultural differences and measure consistently and reliably the differences in behavioral preferences in different cultures.

5.2.2 "Sister language" Comparison – DISC Distribution

As different regional versions of the same language were involved in the study, the inter-language correlation between them was analyzed.

A. English

The following versions of English language were part of the study; US, Australasia, Canada, India, Caribbean, UK and Nigeria.

	ENG	AUS	ECA	EIN	ENC	EUK	NIG
D	11,0	7,7	8,3	14,0	10,6	15,3	10,5
I	31,6	32,2	33,0	27,9	19,1	29,8	24,3
S	28,2	33,6	33,8	28,5	31,4	29,2	33,9
C	29,1	26,5	24,8	29,5	38,9	25,8	31,3

D <=> I Correlation	-0,1752
D <=> S Correlation	-0,7694
D <=> C Correlation	0,0259
I <=> S Correlation	-0,0369
I <=> C Correlation	-0,9352
S <=> C Correlation	-0,0549
Average	**-0,3243**

Average on previous years:

2013	-,3199
2011	-,2980
2009	-,2870
2008	-,3009

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2007 -,3291
2006 -,1928

As the above table shows, results from the different English language versions and areas do not correlate with each other, indicating and supporting clearly the decision to develop and the need to maintain a different version of the questionnaire for each of the languages.

B. Chinese

The following versions of Chinese language were part of the study; Simplified and Traditional.

	CHI	TWN
D	10,8	8,0
I	17,3	19,4
S	44,3	44,8
C	27,6	27,8
Correlation		
		0,9925

Correlation on previous years:
2013 ,9807
2011 ,9898
2009 ,9544
2008 ,9797
2007 ,9183
2006 ,8959

The results show a high correlation between the DISC distributions in the two languages. As the languages are two different languages (not dialects of one language), it shows evidence that the distribution of the behavioral preferences in the two Chinese language areas are very close to each other.

C. Spanish

The following versions of Spanish language were part of the study; Spain, Latin America and Caribbean.

	SPA	SPC	SPL
D	6,6	6,7	7,2
I	30,3	24,3	31,6
S	33,2	33,9	20,4
C	30,0	35,1	40,9

D <=> I Correlation	0,5100
D <=> S Correlation	-0,9796
D <=> C Correlation	0,9459
I <=> S Correlation	-0,6723
I <=> C Correlation	0,2033
S <=> C Correlation	-0,8615
Average	**-0,1424**

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Average on previous years:

2013	-,1622
2011	-,2186
2009	-,2460
2008	-,1436
2007	-,1910
2006	-,1060

As the above table shows, results from the different Spanish language versions do not correlate with each other, indicating and supporting clearly the decision to develop and the need to maintain a different version of the questionnaire for all of the language areas.

D. Portuguese

The following versions of Portuguese language were part of the study; Portugal and Brazil.

	POB	POR
D	12,4	19,2
I	15,2	18,2
S	18,5	23,7
C	53,9	38,9
Correlation		
		0,9858

Correlation on previous years:

2013	,6737
2011	,6715
2009	,7054
2008	,6185
2007	,5995
2006	,6329

As the above table shows, results from the different Portuguese language versions do correlate with each other but not very well (except in 2015), indicating and supporting the decision to develop and the need to maintain a different version of the questionnaire for both of the languages.

E. Swedish

The following versions of Swedish language were part of the study; Sweden and Finland.

	SWE	SWF
D	6,9	3,9
I	45,6	52,1
S	29,9	27,6

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C	17,6	16,4
Correlation		
		0,9935

Correlation on previous years:

2013	,9847
2011	,9877
2009	,9674
2008	,9933
2007	,9912
2006	,9655

Although the above table indicates there being a high correlation between the two Swedish language versions, it is not recommended to combine the questionnaires in one that would be used in both areas. The F-test value is .74 indicating there is a chance for variance between the two distributions.

An interesting addition to the analysis was found when Finnish language was added to the correlation analysis.

	SWE	**SWF**	**FIN**
D	6,9	3,9	7,5
I	45,6	52,1	33,0
S	29,9	27,6	43,9
C	17,6	16,4	15,7

D <=> I Correlation	-0,8526
D <=> S Correlation	0,7246
D <=> C Correlation	-0,0054
I <=> S Correlation	-0,9779
I <=> C Correlation	0,5271
S <=> C Correlation	-0,6930
Average	**-0,2129**

5.2.3 DISC Distribution by Language vs. Age Group

To check the consistency of the results in each age group for each language, the following analyses were made.

The finding that the "global person" is changing towards having more I and less C is supported in many of the languages that have big enough population to support this type of multi-level comparison. Only some examples are presented here.

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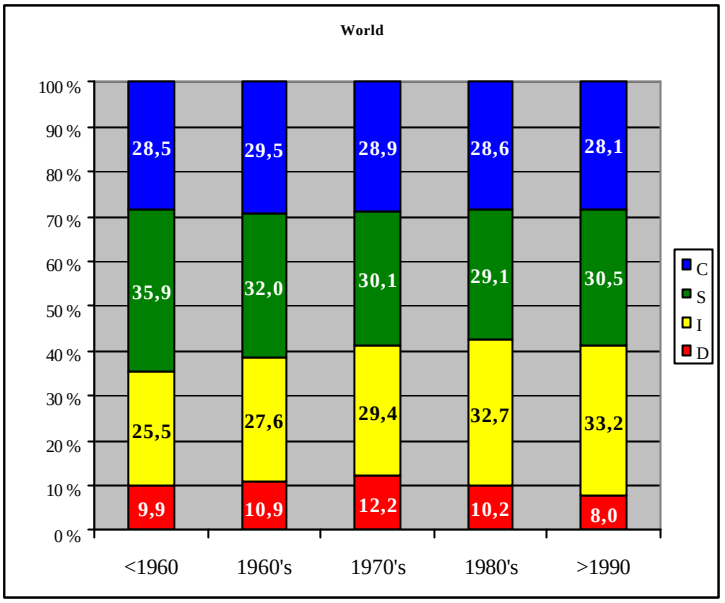
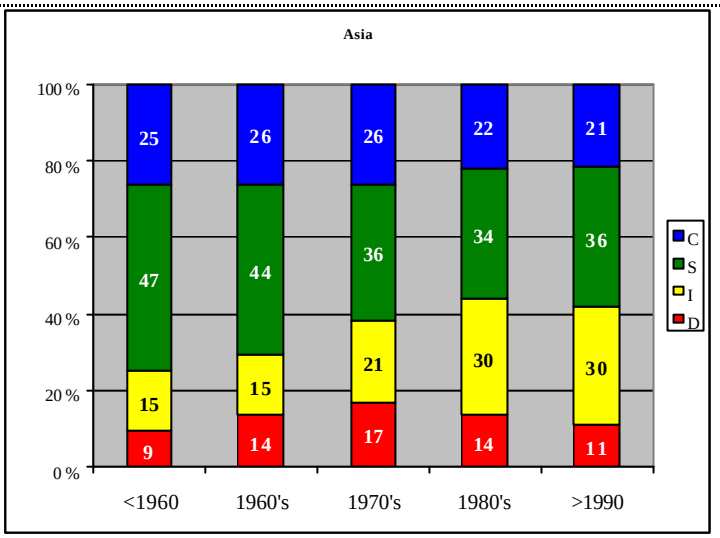
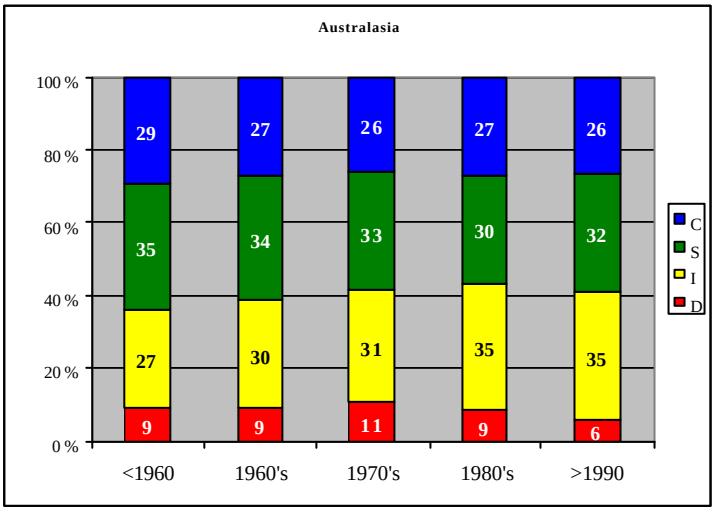
World



Asia



Australasia



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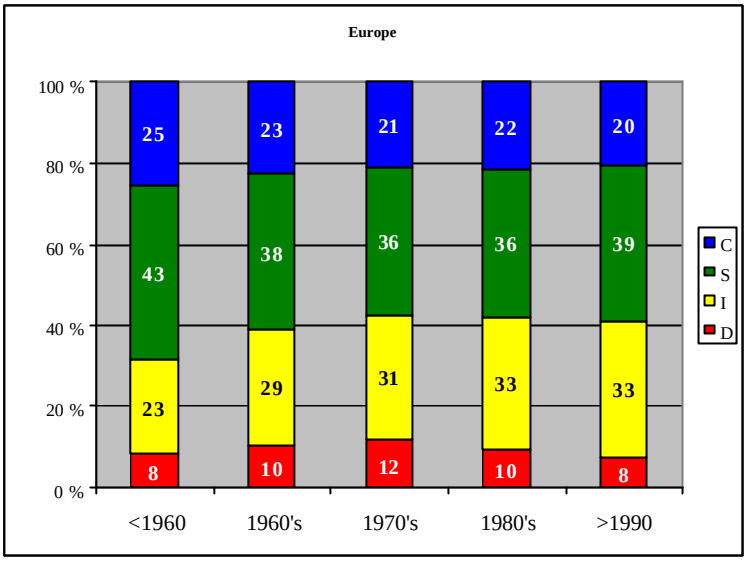
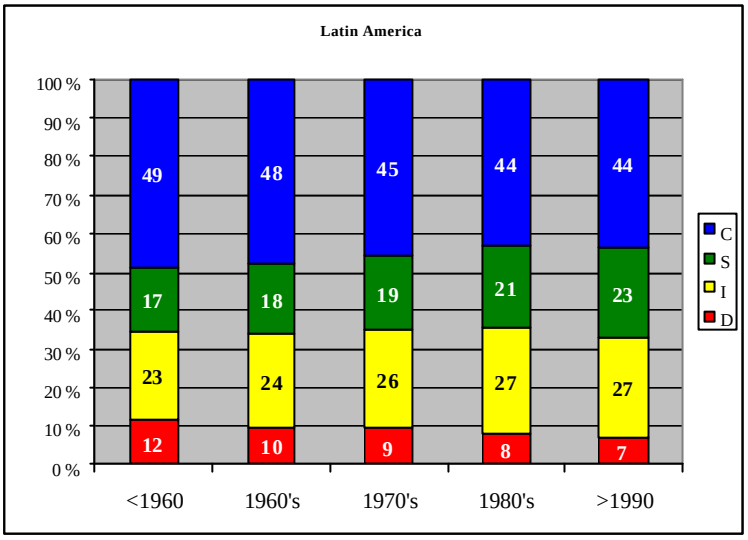
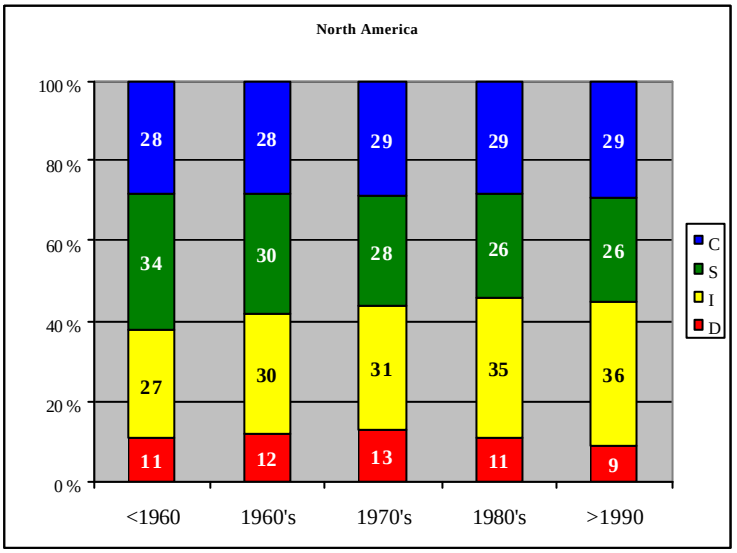
Europe	
Latin America	
North America	

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5.2.4 DISC Distribution by Language vs. Gender

To check the consistency of the results for both genders for each language, the following analyses were made.

		Male				Female				
		D	**I**	**S**	**C**	**D**	**I**	**S**	**C**	Correl.
AUS	2013	9	29	33	29	6	37	32	25	
	2015	9	29	34	28	6	36	33	24	0,9203
CAT	2013	10	25	32	33	11	33	34	21	
	2015	11	26	33	30	11	27	37	25	0,9678
CHI	2013	13	15	44	28	11	20	47	22	
	2015	11	15	44	30	10	21	45	24	0,9041
DAN	2013	12	23	43	23	7	25	49	19	
	2015	10	24	44	22	6	23	51	19	0,8709
ECA	2013	7	37	32	24	8	37	32	23	
	2015	11	33	31	25	6	33	36	25	0,9669
EIN	2013	13	27	30	30	10	31	34	25	
	2015	15	27	28	31	12	33	30	25	0,9889
ENC	2013	16	18	29	37	10	21	31	38	
	2015	12	19	31	38	10	19	32	39	0,9690
ENG	2013	14	30	26	29	9	34	30	27	
	2015	13	30	26	30	8	33	31	28	0,9460
EUK	2013	19	28	28	25	11	34	31	24	
	2015	18	28	28	26	10	33	31	26	0,9682
FCA										
	2015	8	40	34	19	4	38	40	17	
FIN	2013	9	28	43	20	6	36	44	14	
	2015	10	29	43	18	5	37	45	13	0,8737
FRA	2013	13	37	30	20	9	41	29	20	
	2015	11	37	31	21	6	35	39	20	0,9753
GER	2013	8	48	15	28	3	52	18	27	
	2015	8	48	16	28	4	49	19	27	0,8908
HOL										
	2015	13	30	34	23	8	36	41	15	
ITA										
	2015	4	45	34	17	2	50	33	15	
JAP										
	2015	8	27	41	24	7	26	40	27	
KOR	2013	12	30	39	18	10	34	42	14	
	2015	15	27	36	21	10	40	35	15	0,9394
NIG	2013									
	2015	12	23	34	31	8	27	33	32	
NOR	2013									

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	2015	3	28	49	21	2	37	47	15	
POB	2013	15	14	15	56	12	17	21	50	
	2015	13	14	17	57	12	17	22	49	0,8468
POL	2013	23	19	35	23	12	22	43	22	
	2015	19	18	36	26	12	20	45	24	0,9337
RUS	2013	26	11	33	30	14	24	41	21	
	2015	28	12	30	29	17	24	37	23	0,9988
SPA	2013	8	28	29	35	7	32	34	27	
	2015	8	29	32	31	5	32	35	28	0,9315
SPC	2013	10	23	40	28	3	33	33	30	
	2015	8	22	34	36	5	26	34	34	0,9800
SPL	2013	14	28	16	42	8	32	20	39	
	2015	9	31	19	41	5	33	22	41	0,8969
SWE	2013	8	43	28	21	6	48	28	21	
	2015	8	42	30	19	6	49	29	16	0,8822
SWF										
	2015	5	46	28	21	3	59	27	11	
THA	2013	17	25	38	20	13	27	35	25	
	2015	16	22	38	25	13	25	38	24	0,9623
TWN		11	15	41	33	8	23	46	24	
	2015	8	17	45	30	7	24	44	24	0,9594
VIE										
	2015	16	20	38	26	11	29	39	21	
AVERAGE	2013	13	26	32	29	9	32	34	25	
(not weighted)	2015	11	28	33	27	8	32	36	24	0,9376

The results show a very high correlation in all of the languages for DISC distribution between the genders between the two populations.

Overall conclusion should be that Extended DISC Personal Analysis succeeds well in identifying the differences in the two genders in the different language groups.

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6 Validity and Reliability

Fundamental to the evaluation of any instrument is the degree to which test scores are free from various sources of measurement error and are consistent from one occasion to another. Sources of measurement error, which include fatigue, nervousness, content sampling, answering mistakes, misinterpretation of the instructions, and guessing, will always contribute to an individual's score and lower the reliability of the test.

6.1 Test-retest

The results below are from the 2006 validation study.

To test the reliability of the current version of Extended DISC Personal Analysis, a test-retest study was organized. To put the instrument to a true test, only individuals who expressed self-interest in re-taking the questionnaire were selected to the study. This means that only people who were either unhappy with the results or wanted to check if the environment in which they completed the questionnaire had initiated any effect on the results were included.

The above was expected to produce a lower correlation in the results than if the people who were happy with the results were to be asked to re-take the questionnaire. However, it is felt that, in order for a tool to truly measure the subconscious response, it should not be affected by either situational factors or the person's knowledge or preference of oneself. Most of the other test-retest studies have not taken this approach but have preferred to include people who have no problems or concerns with the initial results.

The Profile Points [3] were used in this study to compare the first and the second result of the same person. The following chart shows the results of the 120 persons selected to the study.

1st								2nd								Correlation	
Profile I				Profile II				Profile I				Profile II				Profile	
D	I	S	C	D	I	S	C	D	I	S	C	D	I	S	C	I	Profile II
1	6	7	4	11	1	3	3	3	3	8	5	10	2	3	2	0,6132	0,9828
1	12	4	1	8	0	5	7	0	13	4	1	12	0	3	5	0,9976	0,8449
3	10	6	2	3	5	9	4	5	10	4	2	3	5	8	6	0,8925	0,8829
7	6	6	4	4	4	7	6	8	5	5	3	6	0	7	8	0,9316	0,6647
15	3	1	0	2	1	7	9	13	6	0	0	0	1	7	9	0,9524	0,9800
8	9	2	2	4	4	6	6	11	5	2	2	2	4	6	9	0,7493	0,8701
5	5	7	2	7	9	1	4	6	4	7	4	9	6	5	3	0,7815	0,5048
1	7	8	1	14	0	2	6	1	7	10	2	14	2	1	2	0,9782	0,9184
0	7	8	2	7	3	4	4	3	6	8	0	10	2	2	4	0,8322	0,9658
6	3	7	3	6	7	3	2	9	1	8	2	3	7	5	5	0,9505	0,1715
7	3	3	5	2	4	8	4	5	3	7	6	1	8	9	1	0,0510	0,7461
3	4	6	3	5	0	6	3	0	7	4	4	12	1	3	5	0,3282	0,5132
2	6	8	5	9	3	3	4	2	4	8	5	6	4	4	4	0,9200	0,9864
2	5	9	5	2	1	6	6	4	5	8	3	2	0	5	10	0,8058	0,8815
3	1	10	4	12	4	1	2	1	2	10	3	10	5	0	1	0,9487	0,9695
8	1	7	3	4	5	7	6	11	2	5	2	2	8	5	5	0,8561	0,3162
7	5	7	0	5	4	5	5	4	9	7	0	7	1	4	8	0,6956	0,8433

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10	7	2	0	8	1	5	7		7	9	2	1	7	0	6	6		0,8822	0,9501
9	8	2	1	4	4	7	6		13	6	0	1	1	1	9	7		0,9066	0,9971
3	5	8	4	12	4	2	4		2	6	7	3	10	1	4	6		0,9075	0,8064
3	10	3	1	5	2	4	6		2	11	4	1	8	0	4	8		0,9831	0,9683
8	5	3	2	9	1	3	7		6	8	2	1	9	1	4	7		0,7436	0,9911
7	3	4	2	9	3	6	4		1	6	11	0	11	2	2	5		-0,0914	0,8018
6	3	3	9	4	6	7	6		5	2	5	7	4	5	7	5		0,8022	0,8947
6	3	4	6	3	9	5	2		6	2	3	10	3	10	4	3		0,8811	0,9595
2	1	10	6	12	7	0	2		0	0	11	5	14	5	0	2		0,9921	0,9697
0	2	11	7	14	7	0	0		0	2	10	6	13	3	1	4		0,9989	0,8679
0	3	5	9	16	1	1	1		1	0	6	11	16	4	0	0		0,9151	0,9685
0	11	6	4	15	0	2	5		0	4	10	5	14	3	4	1		0,4297	0,8801
1	0	10	6	18	3	0	0		1	0	6	11	4	13	3	0		0,7152	0,0415
1	0	10	6	18	3	0	0		1	0	6	11	4	13	3	0		0,7152	0,0415
1	1	11	4	10	7	0	4		1	1	11	4	12	7	1	2		1,0000	0,9472
3	7	7	3	6	1	7	5		0	0	9	10	19	2	0	0		-0,0525	0,2235
2	4	9	4	11	1	0	5		0	1	11	7	14	6	0	0		0,8768	0,7550
1	3	5	7	10	7	0	2		7	3	9	2	8	2	4	5		-0,3517	0,4009
4	9	5	2	7	2	3	3		0	3	6	8	12	5	2	2		-0,3882	0,8685
2	2	4	7	14	5	1	2		2	5	2	7	10	6	3	1		0,6335	0,9353
1	0	5	8	13	6	1	0		1	0	6	8	14	4	1	0		0,9922	0,9819
0	1	8	9	11	7	0	1		0	3	11	2	11	1	3	3		0,5485	0,6592
5	3	8	3	6	10	1	3		0	1	11	6	17	0	0	2		0,6544	0,1346
3	1	9	7	11	4	3	3		0	1	8	9	15	4	0	2		0,9021	0,9884
0	7	8	3	15	1	0	5		1	6	9	3	13	0	0	6		0,9661	0,9855
5	3	5	6	3	4	8	4		9	4	2	5	3	4	9	5		0,1800	0,9860
0	0	8	9	16	5	0	0		1	2	9	5	12	5	3	2		0,8428	0,9945
0	2	8	8	16	3	2	3		2	6	4	7	10	1	4	6		0,5287	0,8324
3	1	7	6	10	4	4	5		2	3	9	4	11	2	4	5		0,7592	0,9738
0	2	9	7	18	2	0	1		4	1	7	7	5	6	5	7		0,7869	-0,4791
19	1	0	0	0	1	8	9		17	2	1	0	1	3	4	11		0,9980	0,7986
0	4	7	6	17	2	1	1		2	3	8	6	13	3	3	2		0,9091	0,9968
16	3	1	1	1	4	7	9		12	4	2	2	1	2	10	6		0,9977	0,7699
2	5	6	5	13	1	2	3		0	7	6	2	14	0	1	5		0,7863	0,9777
3	3	11	2	10	2	3	6		1	5	7	3	11	4	2	3		0,7697	0,8406
0	1	6	13	17	4	1	1		0	2	5	10	20	0	0	0		0,9928	0,9827
2	0	11	5	13	2	3	3		0	2	7	9	17	0	1	2		0,6780	0,9987
4	6	8	1	6	2	4	5		5	4	6	0	7	2	3	8		0,8807	0,8619
12	6	3	0	1	0	8	11		7	10	2	0	1	1	9	10		0,7148	0,9861
6	1	6	7	3	12	0	3		7	2	5	5	4	10	3	2		0,8359	0,9371
0	9	4	2	11	0	3	5		1	9	3	1	12	0	2	4		0,9689	0,9890
4	3	3	8	11	5	4	1		0	3	7	7	15	2	1	1		0,3909	0,9313
11	3	2	2	0	11	6	3		9	3	4	1	2	9	5	4		0,9325	0,9897
7	3	7	2	0	3	8	6		4	4	7	1	3	2	5	7		0,7762	0,6765
12	6	1	0	0	1	9	10		14	6	0	0	0	1	9	7		0,9959	0,9653
1	3	5	11	9	5	4	1		1	3	5	11	9	5	4	1		1,0000	1,0000
3	10	4	0	10	1	6	5		2	10	4	2	11	0	3	9		0,9554	0,8183
0	0	11	5	14	5	1	0		0	0	12	8	16	2	1	0		0,9776	0,9700
3	9	5	2	5	1	6	7		1	7	9	2	9	1	3	5		0,6900	0,5009
13	3	2	0	0	12	6	4		12	3	1	1	1	10	4	5		0,9899	0,9621
13	3	1	1	0	13	2	6		13	3	2	0	0	12	6	4		0,9900	0,8889
1	6	6	5	12	4	2	3		2	5	7	5	10	3	3	5		0,9170	0,9430
12	2	0	4	2	13	4	2		13	1	1	4	1	14	4	1		0,9876	0,9987
2	0	9	7	7	9	4	1		3	0	9	6	8	8	3	1		0,9829	0,9633
8	6	2	2	2	3	8	3		10	5	1	3	1	9	7	3		0,9350	0,4719

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1	9	6	2	5	1	6	9		6	7	7	1	4	2	6	8		0,5808	0,9768
11	4	4	0	1	3	5	9		14	3	4	0	0	1	7	12		0,9866	0,9763
5	4	5	2	8	4	3	4		5	4	7	2	9	3	3	5		0,9058	0,9567
1	6	8	4	7	5	5	3		2	4	6	5	12	7	3	0		0,8661	0,9428
6	4	7	4	4	2	8	5		4	2	8	6	6	4	7	5		0,6025	0,8779
12	4	1	1	1	3	10	7		16	3	0	3	1	4	9	6		0,9701	0,9825
7	3	7	5	8	3	6	4		3	2	8	6	13	4	2	1		0,5373	0,7410
4	3	10	4	5	12	3	0		4	2	7	6	5	10	4	0		0,7630	0,9854
3	5	9	2	9	2	2	7		1	9	4	3	9	1	2	6		0,2926	0,9881
4	10	3	2	6	1	8	5		6	10	2	1	6	2	7	5		0,9415	0,9959
10	4	1	1	1	8	7	2		9	1	3	3	0	12	4	2		0,8165	0,8481
8	1	4	6	5	7	7	2		12	2	2	7	1	7	11	1		0,9036	0,8063
0	3	16	2	12	7	0	0		2	2	14	3	14	6	0	1		0,9846	0,9817
1	4	8	5	10	2	4	3		1	5	6	6	10	5	1	3		0,8731	0,7865
12	4	3	1	2	3	7	7		10	2	4	3	3	2	7	6		0,9216	0,9318
5	9	4	3	7	8	2	4		5	9	4	3	8	7	2	4		1,0000	0,9560
7	4	4	5	6	4	7	5		6	5	5	4	5	5	6	5		0,5774	0,7746
1	3	11	5	12	4	0	2		3	3	8	4	12	4	1	3		0,9723	0,9971
0	1	11	6	17	4	0	0		0	1	13	6	19	2	1	0		0,9962	0,9866
10	8	1	0	0	0	9	12		6	11	1	0	1	0	7	12		0,8370	0,9821
5	10	2	1	1	2	7	9		5	11	1	0	0	0	7	11		0,9997	0,9903
2	6	5	4	12	2	3	4		3	6	2	5	13	2	2	5		0,4276	0,9889
0	3	10	4	13	3	2	0		1	5	5	6	12	5	2	0		0,6005	0,9790
11	1	3	3	3	17	0	0		7	3	4	6	3	17	0	1		0,8234	0,9983
4	1	9	6	7	9	0	1		6	1	6	4	6	9	1	2		0,7543	0,9882
6	5	9	1	4	6	5	8		11	3	5	0	1	5	7	9		0,5700	0,8286
1	2	7	7	12	3	3	1		0	3	10	8	14	4	1	4		0,9732	0,9267
10	3	7	2	3	9	5	2		11	3	3	4	5	11	2	3		0,7587	0,8080
1	8	5	1	9	2	2	7		0	6	8	2	8	2	3	7		0,8047	0,9862
11	5	2	0	2	4	6	7		9	6	1	2	3	3	6	8		0,9401	0,9206
4	7	5	1	5	3	4	9		2	8	6	5	5	2	6	7		0,5200	0,7627
2	1	5	8	6	11	2	0		0	1	4	7	8	9	2	1		0,9667	0,9415
1	12	6	1	8	0	3	7		1	12	5	0	9	1	6	6		0,9950	0,8971
1	11	7	1	9	0	5	7		1	8	9	2	9	1	2	5		0,9000	0,8825
0	5	7	8	12	3	2	2		1	3	8	7	12	1	3	3		0,9071	0,9583
0	7	8	1	14	4	1	2		0	5	7	4	18	2	2	0		0,8598	0,9761
2	7	6	4	8	1	6	7		3	5	7	5	9	1	4	8		0,7365	0,9280
5	6	7	2	4	1	6	7		4	6	8	3	6	1	5	7		0,9047	0,8862
2	5	6	5	8	3	5	3		2	7	6	6	9	4	3	6		0,9113	0,6665
0	2	9	7	14	4	1	1		1	1	10	8	9	5	2	3		0,9807	0,9782
2	5	8	3	10	3	5	3		5	6	6	3	7	3	5	4		0,6236	0,9599
3	12	3	1	9	1	3	7		4	9	5	1	10	0	4	6		0,9373	0,9648
0	3	11	2	17	1	1	0		0	7	10	3	15	0	1	4		0,8946	0,9536
8	7	2	3	10	2	3	6		7	6	3	6	11	1	4	5		0,7845	0,9677
3	3	6	2	2	8	3	8		4	3	5	3	1	7	6	6		0,9045	0,7305
0	1	10	6	13	4	2	2		0	6	10	3	16	0	1	3		0,7264	0,9471
6	9	5	0	4	3	7	7		6	8	4	1	3	3	5	10		0,9845	0,7708
1	10	7	2	14	0	1	4		2	10	7	1	10	0	0	7		0,9815	0,8989

The overall correlations are:

Test-Retest **Overall correlations**

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Profile I	0,8136
Profile II	0,7991

To test the results further, a random selection of 240 persons' Profile Points was taken from the database. Half of them were positioned in the "1st" column and the other half in the "2nd" column. The correlation chart looked now like this:

Random Selection	
Overall correlations	
Profile I	0,1180
Profile II	0,1787

The high correlation from both this and the previous studies prove clearly that Extended DISC Personal Analysis continues to be a reliable tool that is not influenced by situational factors to the extend that affect the results.

6.2 Invalid Profiles

Another method of monitoring the influence of the environment to the results is to follow the percentage of Invalid Profiles[4]. Extended DISC System has the strictest internal rules for identifying and not processing further the results that do not carry the required reliability.

The amount of Invalid Profiles in a society is mainly dependent on the skills of the inventory administrator, the environmental climate of the organization and the stability of the society.

The following shows the amounts of Invalid Profiles in selected countries in 2015.

	Invalid %
Australia	3,28 %
Barbados	1,77 %
Belgium	3,45 %
Brazil	6,49 %
Bulgaria	3,70 %
Canada	2,71 %
Chile	5,29 %
China	2,84 %
Colombia	5,99 %
Denmark	4,82 %
Dominican Republic	2,27 %
Dubai	5,56 %
Ecuador	7,34 %
Finland	2,33 %
Germany	2,64 %
Greece	4,09 %

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India	5,82 %
Iraq	2,78 %
Italy	2,26 %
Jamaica	2,84 %
Korea	2,73 %
Malaysia	6,44 %
Mexico	5,37 %
New Zealand	3,58 %
Panama	5,45 %
Papua New Guinea	5,19 %
Peru	7,72 %
Poland	8,41 %
Russia	2,94 %
Saudi Arabia	2,63 %
Singapore	0,00 %
Spain	3,59 %
Sri Lanka	5,94 %
Sweden	4,34 %
Taiwan	1,85 %
Thailand	3,45 %
Trinindad & Tobago	2,68 %
United Kingdom	3,72 %
United States	2,90 %
Vietnam	9,44 %
	3,93 %

Americas	3,14 %
LATAM	5,94 %
Asia	3,38 %
Australasia	3,35 %
Caribbean	2,65 %
Europe	4,72 %

The next chart shows the comparison of Invalid Profiles between different years.

Year	Invalid-%
2015	3,93 %
2013	4,09 %
2011	4,37 %
2009	5,65 %
2008	4,40 %
2007	4,20 %
2006	5,90 %
2005	3,80 %

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Invalid Profiles are part of the Extended DISC Trust Indicator™, that will be included in the validation report in coming years.

The results also show that if the instrument does not have proper process for identifying the invalid results (like in the case of most other instruments – even the globally sold instruments), the overall validity of the instrument would be significantly weaker.

6.3 Comparison of Random Populations

To check the consistency and representativeness of the population, the population was randomly divided into two sub-groups of 16.538 persons in each group.

Table. "Least" Hit Rate in 3 randomly selected sub-groups

"Least" Hit Rate		
	2009	**2015**
Sub 1	90,59	90,42
Sub 2	90,58	90,27

Table. Dominating "Least" response in 3 randomly selected sub-groups

Dominating Least Response		
	2009	**2015**
Sub 1	100,0	100,0
Sub 2	100,0	98,7

Table. Construct Validity in 3 randomly selected sub-groups

Construct Validity				
	D	**I**	**S**	**C**
Sub 1	0,82	0,81	0,85	0,78
Sub 2	0,84	0,82	0,83	0,80

As the above tables clear prove, the population used for the study is not biased. They also show that Extended DISC Personal Analysis is not discriminatory since it has been validated using a population that represents the entire population and is not biased by any specific job category, gender, age or race.

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6.4 Least "Hit-Rate in different languages

For each choice in each question, a behavioral trait that is most likely to respond Least is defined. By "Least Hit-Rate" is meant the percentage of "theory-expected" choices from all the choices. In other words, how often is each Least choice selected by a right person in the right question.

Least Hit-Rate					
	2013	**2015**		**Previous studies**	
ARA		87,70			
AUS	89,80	90,07		**Original Study**	
CAT	90,21	89,16		FIN 1998	90,97
CHI	88,70	90,99			
DAN	89,93	89,76		**Other earlier studies**	
ECA	90,96	89,21		USA 2002	91,27
EIN	88,77	88,73		FIN 2000	91,07
ENC	89,96	87,92		THA 2002	89,89
ENG	91,16	91,13		POL 2004	90,19
EUK	90,24	90,20		DAN 2003-04	88,72
FCA		90,73			
FIN	91,15	91,42		**Earlier validation studies**	
FRA	88,89	89,45			
GER	90,70	90,88		2013	89,80
GRE		89,45		2011	89,86
HOL	89,90	90,13		2009	89,72
ITA	90,31	90,13		2008	90,46
JAP		90,58			
KOR	91,29	91,62		2007	90,53
NIG		87,80		2006	90,05
NOR	91,48	90,78		2005	89,26
POB	87,19	87,41		2006	90,05
POL	90,38	90,47		2005	89,26
POR		87,60			
RUS	89,11	83,78			
SPA	89,39	89,00			
SPC	88,72	88,18			
SPL	87,70	87,39			
SWE	90,01	90,25			
SWF	90,27	90,93			
THA	89,71	89,85			
TWN	88,54	90,56			
VIE	90,24	88,29			
Global	**89,80**	**89,44**			

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The results do not indicate any change or problems with the overall construct validity of the instrument.

6.5 Least Hit-Rate in different languages for each DISC trait

The least Hit-Rate analysis was done separately for each DISC trait. The aim of this analysis was to find out if the general construct validity is high enough for each of the traits.

Least Hit-Rate - DISC Traits 2013				
	D	**I**	**S**	**C**
AUS	93,45	94,30	90,07	84,83
ENG	93,97	94,85	91,18	87,36
CAT	95,24	93,62	89,82	85,61
CHI	89,86	90,60	90,29	83,98
DAN	94,36	93,39	90,26	85,38
ECA	94,09	94,89	90,80	86,24
ENC	93,11	93,72	90,09	85,12
EUK	94,72	94,55	90,39	84,75
FIN	94,06	96,04	92,12	85,88
FRA	92,58	93,96	87,66	83,99
GER	92,27	95,35	91,02	86,66
HOL	94,43	95,85	90,48	84,28
ITA	92,38	93,52	87,84	88,13
KOR	94,01	94,91	92,12	87,25
NIG	91,24	92,09	87,15	82,28
NOR	95,85	94,85	91,64	87,20
POB	92,44	89,37	85,38	81,49
POL	95,65	95,94	91,65	88,00
POR	93,74	91,33	87,38	82,58
RUS	94,15	92,59	88,94	83,65
SPA	94,32	93,33	88,90	84,40
SPC	93,32	92,25	87,62	82,84
SPL	93,11	92,30	85,20	81,81
SWE	93,35	95,87	91,64	87,01
SWF	91,24	97,17	92,42	82,42
THA	93,86	94,33	89,29	84,89
TWN	89,34	92,33	89,96	84,27
EIN	92,33	93,11	88,52	83,18
VIE	92,04	94,01	90,24	85,39
Global	**93,30**	**93,80**	**89,64**	**84,84**

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St.Dev.	1,54	1,75	1,92	1,88

As the results show, there are no major differences or problems with any of the traits in any of the languages. The C trait has a tendency, in all DISC Theory based inventories, to have the biggest discrepancies.

6.6 Dominating 'Least' Response in Each Question

It is assumed that in those questions that are designed to measure the responses of the dominant DISC characters, there is a certain character that responds most negatively in that particular question. The following step of the study was to find out how well each of the populations responded in accordance with that theoretical assumption.

Dominating Least Response		
	2013	**2015**
ARA		97,3
AUS	100,0	100,0
CAT	96,0	97,3
CHI	89,3	97,3
DAN	96,0	93,3
ECA	97,3	93,3
EIN	100,0	100,0
ENC	93,3	98,7
ENG	100,0	100,0
EUK	98,7	100,0
FCA	97,3	98,7
FIN	97,3	97,3
FRA		98,7
GER	96,0	94,7
GRE		97,3
HOL	94,7	96,0
ITA		97,3
JAP		92,0
KOR	97,3	98,7
NOR		92,0
POB	100,0	100,0
POL	98,7	97,3
POR		100,0
RUS	89,3	88,0
SPA	97,3	98,7

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SPC	90,7	100,0
SPL	97,3	100,0
SWE	94,7	97,3
SWF		92,0
THA	96,0	100,0
TWN	93,3	100,0
VIE	93,3	97,3
Global	**96,0**	**97,2**

There are no major differences between the scores; they all fall into an acceptable level.

6.7 Question Validity and Word Choices

The next part of the questionnaire construct validity process concentrates on studying the individual questions' validity and word choices. Although the questionnaire in general may be valid and culture-free, it may be possible to enhance the efficiency and analyzability of the results by regularly restructuring individual questions and especially their word choices.

The process was conducted by paying attention separately to each individual question and each individual word pair in each question in all of the language populations. The purpose of the process was to:

- compare the 'Least' Hit Rates in the populations
- compare the theoretical assumptions (theoretically expected results) to actual results
- compare the actual results between the populations
- analyze the individual word pairs to find out if the distribution of responses was not as clear as the are required to be
- come up with possible suggested word changes for each language (Version 2013).

This part of the process was done separately in this study.

6.8 Construct Validity

Construct validity refers to the extent to which the inventory measures a trait derived from research or experience that have been constructed to explain observable behavior.

The traits used in Extended DISC Personal Analysis are the behavioral traits derived from the Jungian theory; Dominance, Inducement, Submission and Compliance.

The Extended DISC Personal Analysis questionnaire is constructed upon the Jungian theory; the basic behavioral traits and how they are demonstrated in person's response and behavior. The four choices in each of the 24 questions have a predefined "ideal" distribution of responses that is based on the DISC Theory.

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All of the questions are linked to each other, and a high inter-item correlation can prove that the full questionnaire to work in a designed way. The respondent is expected to establish an answering pattern and follow that pattern throughout the questionnaire. Both patterns, responses to most and least questions, need not only to be established and followed but to correlate with each other.

The research process described next aims to measure if the questionnaire and the calculation logic of the Profiles are valid. Each question is analyzed both individually and as a part of the whole questionnaire.

The process was conducted by comparing the expected low responses to actual low responses ("Describes me Least") in all of the language populations and between the populations. The purpose of this comparison was to:

1. Find out if there are significant differences between the different cultures and different populations in the average responses to the questionnaire
2. Find out if there are significant differences between the distributions of the 'Least' Hit Rates between the different populations
3. Find out if there were differences between the populations in which dominant DISC character responded most negatively in each question

6.9 Internal consistency

As a result of the approach described above, final scores for instrument internal consistency were achieved, globally and for each language version separately. One of the most popular reliability statistics in use today is Gronbach's alpha. Gronbach's alpha determines the internal consistency or average correlation of items in a survey instrument to gauge its reliability. Gronbach's alpha measures how well a set of items (or variables) measures a single unidimensional latent construct.

Gronbach's Alpha 2015

	D	I	S	C
ARA	0,83	0,80	0,84	0,80
AUS	0,80	0,79	0,84	0,75
CAT	0,80	0,80	0,80	0,75
CHI	0,77	0,77	0,83	0,75
DAN	0,80	0,77	0,81	0,77
ECA	0,76	0,75	0,80	0,76
EIN	0,85	0,85	0,87	0,84
ENC	0,82	0,83	0,85	0,80
ENG	0,80	0,80	0,83	0,77
EUK	0,80	0,81	0,84	0,78
FCA	0,78	0,74	0,78	0,79
FIN	0,80	0,75	0,78	0,74
FRA	0,80	0,78	0,81	0,81
GER	0,81	0,80	0,78	0,77

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GRE	0,83	0,81	0,85	0,79
HOL	0,81	0,77	0,79	0,75
ITA	0,78	0,74	0,76	0,74
JAP	0,80	0,71	0,74	0,77
KOR	0,78	0,72	0,79	0,80
POB	0,81	0,86	0,87	0,82
POL	0,83	0,81	0,80	0,81
POR	0,83	0,82	0,84	0,81
RUS	0,76	0,73	0,74	0,78
SPA	0,81	0,80	0,80	0,76
SPC	0,81	0,84	0,82	0,78
SPL	0,82	0,82	0,83	0,77
SWE	0,77	0,76	0,78	0,77
SWF	0,80	0,72	0,78	0,72
THA	0,83	0,82	0,82	0,82
TWN	0,82	0,70	0,85	0,76
VIE	0,85	0,83	0,84	0,81
Global	0,80	0,80	0,82	0,78

Conclusions: Extended DISC Personal Analysis has very high Gronbach's alpha scores in all languages. This claim is supported by the 2015 figures alone but also by the consistency of the figures over the different annual samples and different language versions.

Global				
2013	0,84	0,82	0,83	0,78
2009	0,84	0,82	0,85	0,79
2008	0,84	0,82	0,84	0,79
2007	0,84	0,82	0,84	0,79

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7 National Stress Indicator™

The National Stress Indicator ™ (NSI) is one outcome of Extended DISC International's continuous global research and interest in understanding not only individuals, teams and corporations but also the whole nations.

In mechanics, stress is defined as the force exerted to an object. If the force (stress) becomes stronger or lasts longer than what the material of the object can resist, it deforms. Similarly, in behavioral sense, stress is the external pressure the person feels that forces the person away from their comfort zone.

A certain amount of stress comes with normal everyday tasks and responsibilities within a work environment. NSI does not measure a stress that the person is in control over and accepts.

The National Stress Indicator ™ (NSI) measures the amount of negative stress pressure a group of individuals feels they face. The higher the NSI score, the less balanced, peaceful and secure the population feels the environment is.

Calculation of NSI

The population data for NSI is collected from the users of the Extended DISC System around the world. No identification to an individual is preserved within the data transfer.

The population represents well the average working adult population in each country.

The score is calculated from the Extended DISC Profiles. Extended DISC Personal Analysis measures not only the most natural behavioral preference of an individual but also how the person feels the current environment pushes the person to adjust his/her behavior to better adjust to the requirements of the environment.

Every individual gets a stress score that is based on the size and importance of negatives stress indications in the Profile. A Profile with no indication of any negative pressure gets a zero score. The highest possible score is 5.

The following table lists the results from the last few years.

Table. National Stress

2015	Country	Male	Female	D	I	S	C
Australia	1,58	1,54	1,63	1,27	1,38	2,19	1,17
Barbados	1,55	1,44	1,60	1,67	1,07	2,31	1,16
Belgium	1,80	1,88	1,75	2,00	1,58	2,09	1,50
Brazil	1,20	1,18	1,23	1,12	1,04	1,96	1,00
Bulgaria	1,44	1,20	1,55	1,26	1,38	1,81	1,50
Canada	1,51	1,49	1,54	1,29	1,35	2,09	1,15
Chile	1,33	1,30	1,36	1,16	1,14	2,00	1,10
China	1,73	1,71	1,75	1,24	1,21	2,45	1,32
Colombia	1,18	1,21	1,16	1,00	1,03	1,82	1,02

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Denmark	1,79		1,76	1,85		1,54	1,55	2,25	1,24
Dominican Republic	1,30		1,62	1,06		1,17	0,92	1,93	1,04
Dubai	1,06		1,02	1,22		0,00	1,17	1,89	0,79
Ecuador	1,33		1,33	1,32		1,00	1,14	1,83	1,21
Finland	1,75		1,73	1,77		1,36	1,68	2,07	1,26
Germany	1,54		1,49	1,64		1,35	1,36	2,41	1,25
Greece	1,24		1,20	1,55		1,25	1,29	1,71	0,91
India	1,43		1,41	1,49		1,17	1,16	2,11	1,11
Iraq	1,13		1,10	1,20		1,33	1,00	1,62	0,76
Italy	1,65		1,59	1,75		1,39	1,46	2,19	1,12
Jamaica	1,52		1,48	1,54		1,23	1,29	2,24	1,17
Korea	1,67		1,65	1,69		1,22	1,30	2,35	1,33
Malaysia	1,62		1,58	1,68		1,31	1,47	2,42	1,14
Mexico	1,14		1,16	1,08		1,20	1,00	2,06	0,97
New Zealand	1,48		1,43	1,55		1,29	1,32	2,07	1,13
Panama	1,21		1,06	1,35		1,10	1,06	1,82	1,03
Papua New Guinea	1,54		1,50	1,65		1,45	1,22	2,20	1,13
Peru	1,18		1,16	1,19		1,29	1,00	1,74	0,99
Poland	2,18		2,15	2,20		2,04	1,97	2,75	1,51
Saudi Arabia	1,40		1,37	1,43		1,42	1,17	1,81	1,21
Singapore	1,64		1,57	1,71		1,21	1,32	2,16	1,33
Spain	1,49		1,47	1,51		1,20	1,26	2,06	1,14
Sri Lanka	1,39		1,40	1,35		1,00	0,94	2,03	1,16
Sweden	1,98		1,98	1,98		1,32	1,85	2,64	1,45
Taiwan	1,75		1,76	1,74		1,32	1,49	2,23	1,28
Thailand	1,47		1,45	1,50		1,23	1,33	1,90	1,05
Trinindad & Tobago	1,43		1,41	1,46		0,96	1,31	2,07	1,04
United Kingdom	1,52		1,49	1,57		1,23	1,35	2,15	1,16
United States	1,51		1,47	1,57		1,27	1,35	2,10	1,20
Vietnam	1,22		1,14	1,34		1,14	1,07	1,62	0,84

The National Stress Indicator ™ (NSI) gives the society a lot to think about and its purpose is to raise discussion within the country. It clearly reflects not only the stress in work but also the general attitude towards work and individualism.

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8 Special cases

Special cases provide us indication on how comfortable the person feels in the current environment. The different indicators relate to different types of emotions the person is currently experiencing.

On national level, the results can be assumed to relate to the amount of stability, reliability and pressure that there is the country.

The Special Cases are available for users with advanced certification to the Extended DISC System.

2015	Tight I	Overshift I	Undershift I
Australia	0,8397 %	0,3523 %	0,0294 %
Barbados	0,9009 %	0,0000 %	0,0000 %
Brazil	2,0796 %	1,5851 %	0,0634 %
Canada	0,9091 %	0,3175 %	0,0289 %
Chile	1,7181 %	0,2550 %	0,1208 %
China	0,1946 %	0,0000 %	0,0000 %
Colombia	1,8639 %	0,2610 %	0,0373 %
Denmark	0,9894 %	0,4947 %	0,0309 %
Ecuador	1,3986 %	0,4662 %	0,0000 %
Finland	1,0354 %	0,1883 %	0,0377 %
Germany	1,1913 %	0,0662 %	0,1985 %
Greece	1,8293 %	0,0000 %	0,0000 %
India	1,6088 %	1,1905 %	0,0000 %
Italy	0,7695 %	0,1579 %	0,1381 %
Jamaica	1,3867 %	1,0786 %	0,3082 %
Korea	0,5438 %	0,2266 %	0,1586 %
Malaysia	1,0582 %	0,5291 %	0,0000 %
Mexico	2,3226 %	0,6452 %	0,1290 %
New Zealand	0,6868 %	0,3892 %	0,0229 %
Panama	0,9615 %	0,9615 %	0,0000 %
Papua New Guinea	0,6849 %	0,6849 %	0,0000 %
Peru	1,9251 %	0,5080 %	0,0802 %
Poland	1,2902 %	0,0410 %	1,2083 %
Saudi Arabia	0,5405 %	1,0811 %	0,5405 %
Singapore	0,8463 %	0,4231 %	0,0000 %
Spain	0,9970 %	0,2964 %	0,0000 %
Sweden	0,6382 %	0,1344 %	0,0336 %
Thailand	1,0823 %	0,2165 %	0,0000 %
Trinindad & Tobago	0,9174 %	0,4587 %	0,0000 %
United Kingdom	1,1451 %	0,4693 %	0,0939 %
United States	1,0073 %	0,3419 %	0,0467 %
Vietnam	1,9305 %	1,9305 %	0,0000 %

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9 Device Detection

For the purpose of keeping the instrument valid in the changing environment, special analysis is regularly made on the validity indicators on different devices the respondents use when completing the questionnaire.

The following table shows the percentage of people using desktop/laptop, mobile or tablet when completing the questionnaire. It also indicates the average age of persons using different devices.

					Age	
2015	**Desktop**	**Mobile**	**Tablet**	**Desktop**	**Mobile**	**Tablet**
Australia	93,35	3,31	3,34	39	35	41
Brazil	97,19	0,56	2,25	37	31	37
Canada	95,77	2,11	2,11	41	34	41
Chile	94,93	3,49	1,59	35	32	34
China	98,97	1,03	0,00	33	45	
Colombia	97,88	1,09	1,03	32	30	33
Denmark	93,56	2,20	4,24	38	30	40
Dominican Republic	98,31	1,69	0,00	37	35	
Dubai	94,12	0,00	5,88	34		36
Ecuador	98,07	0,48	1,45	36	40	**47**
Finland	95,86	1,48	2,67	41	31	38
Germany	97,33	0,82	1,85	42	39	44
India	97,39	1,77	0,83	36	32	34
Iraq	91,43	7,14	1,43	37	36	43
Italy	87,08	7,48	5,45	38	34	38
Jamaica	91,65	3,69	4,65	35	30	35
Korea	86,96	12,28	0,75	27	28	34
Malaysia	98,64	0,68	0,68	35	35	45
Mexico	98,98	0,34	0,68	37	29	34
New Zealand	94,95	1,94	3,11	41	35	41
Norway	92,31	0,00	7,69	41		42
Panama	96,92	3,08	0,00	42	40	
Peru	97,35	1,87	0,78	30	24	31
Poland	96,65	1,20	2,15	36	33	35
Spain	92,46	2,28	5,26	38	37	38
Sri Lanka	97,80	2,13	0,00	33	30	
Sweden	94,32	1,96	3,72	43	37	45
Taiwan	96,68	1,86	1,46	36	34	37
Thailand	96,43	0,00	3,57	37		29
Trinindad & Tobago	94,22	3,47	2,31	**44**	49	43
United Kingdom	95,25	1,92	2,83	40	35	44
United States	91,82	4,63	3,55	40	32	40

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Vietnam		90,00	0,00	10,00	35	31

The global average age for mobile users was 5 years less than desktop and tablet users, giving indication that usage of mobile for responding the questionnaires like this will be increasing in the future.

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10 Profile II vs. Profile I

This chapter focuses on comparing the results between Profile II and Profile I.

When Profile II describes the natural spontaneous behavioral style of a person , Profile I describes how well the person feels he/she wants or needs to adjust his/her behavior to the requirements of the current environment. The more similar the two graphs are, the less the person is expressing any need to adjust.

The following table shows the results by country. The first four columns with results show the distribution of dominant traits (D, I, S and C) for persons who had D as the dominant trait in Profile II. The next sets of four columns show the same for dominant I, S and C.

	Profile II D				Profile II I				Profile II S				Profile II C			
2015	**D**	**I**	**S**	**C**	**D**	**I**	**S**	**C**	**D**	**I**	**S**	**C**	**D**	**I**	**S**	**C**
Australia	**61**	27	4	8	6	**70**	14	11	2	24	**40**	33	7	18	28	**47**
Barbados	**47**	33	7	13	7	**64**	29	0	6	6	**41**	47	14	14	35	**37**
Brazil	**70**	20	5	5	19	**61**	15	6	13	26	**35**	26	27	20	21	**32**
Canada	**67**	23	3	7	7	**68**	17	9	3	20	**49**	28	10	17	29	**44**
Chile	**63**	28	2	8	9	**77**	9	5	5	38	**32**	25	11	34	21	**34**
China	**65**	29	3	2	7	**75**	14	4	6	23	**43**	29	14	19	31	**36**
Colombia	**60**	29	4	8	11	**74**	11	5	8	38	**33**	21	14	33	23	**30**
Denmark	**64**	29	2	5	10	**76**	9	5	5	34	**42**	19	13	25	29	**34**
Ecuador	**55**	25	5	16	12	**73**	9	6	11	36	**28**	25	19	25	22	**33**
Finland	**71**	23	4	2	9	**74**	13	3	4	23	**50**	23	13	13	33	**42**
Germany	**52**	40	2	6	8	**79**	7	6	2	27	**38**	32	8	31	19	**43**
Greece	**50**	0	25	25	6	**52**	16	26	0	8	**52**	40	3	14	27	**57**
India	**62**	21	6	12	11	**63**	14	12	6	25	**36**	34	13	23	19	**45**
Italy	**60**	31	3	7	4	**69**	18	9	2	29	**39**	30	4	17	30	**49**
Jamaica	**68**	22	6	4	14	**61**	11	13	2	19	**29**	49	10	15	21	**54**
Korea	**50**	38	4	8	5	**71**	17	8	2	15	**41**	42	6	9	26	**59**
Malaysia	**69**	19	0	12	13	**60**	19	8	11	13	**36**	40	11	19	26	**44**
Mexico	**64**	24	2	10	17	**67**	7	8	20	31	**25**	24	30	22	13	**35**
New Zealand	**60**	28	4	9	7	**70**	14	9	3	23	**45**	29	9	16	29	**45**
Panama	**80**	20	0	0	15	**73**	12	0	14	36	**32**	18	8	27	24	**41**
Papua New Guinea	**55**	27	9	9	13	**50**	16	22	6	14	**37**	43	10	12	23	**56**
Peru	**60**	27	7	7	10	**74**	11	5	8	41	**34**	17	15	31	24	**30**
Poland	**73**	21	3	4	12	**75**	12	2	8	25	**47**	20	18	22	29	**31**
Saudi Arabia	**45**	45	9	0	11	**60**	21	8	5	23	**63**	9	10	20	48	**22**
Singapore	**61**	23	5	10	8	**68**	15	8	3	19	**48**	30	6	10	32	**49**
Spain	**61**	28	6	5	9	**76**	12	3	3	30	**43**	24	11	26	29	**34**
Sweden	**55**	39	2	4	5	**82**	9	4	3	40	**35**	22	12	25	20	**43**
Taiwan	**71**	22	4	4	11	**67**	19	3	5	16	**49**	30	12	14	39	**36**
Thailand	**71**	19	7	3	11	**62**	24	3	4	22	**55**	19	13	13	45	**29**
Trinindad & Tobago	**83**	4	0	13	0	**69**	14	17	4	13	**53**	30	16	9	28	**47**
United Kingdom	**62**	28	3	7	10	**73**	11	7	5	24	**44**	27	12	19	29	**40**
United States	**70**	21	4	6	9	**69**	15	7	4	21	**47**	29	11	15	29	**45**
Vietnam	**56**	9	3	32	11	**53**	22	15	8	18	**45**	29	10	16	22	**51**

The next table sums up the Profile I dominant traits, showing in which direction people in each country feel they want or they need to adjust their behavior.

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These results can be assumed to correlate with national business cultures and what type of behavior is valued most highly in the country.

The last column shows the first version of a BYS Index (Be Your Self) that is aimed to measure the difference between the national distribution of behavioral traits and national business culture. It is basically the percentage of people who keep their dominant trait the same in both Profiles.

Interpretation of these results would require minimum basic certification to the Extended DISC System.

	Profile II => I				BYS Index (Be Your Self)
2015	**D**	**I**	**S**	**C**	
Australia	**76**	**139**	86	99	55
Barbados	**74**	**117**	112	97	47
Brazil	**129**	127	76	**69**	50
Canada	**87**	**128**	98	88	57
Chile	88	**177**	**64**	72	52
China	92	**146**	91	**71**	55
Colombia	93	**174**	71	**64**	49
Denmark	92	**164**	82	**63**	54
Ecuador	97	**159**	**64**	80	47
Finland	97	**133**	100	**70**	59
Germany	70	**177**	**66**	87	53
Greece	**59**	74	120	**148**	53
India	92	**132**	**75**	103	52
Italy	**70**	**146**	90	95	54
Jamaica	94	117	**67**	**120**	53
Korea	**63**	**133**	88	117	55
Malaysia	104	**111**	**81**	104	52
Mexico	131	**144**	**47**	77	48
New Zealand	**79**	**137**	92	92	55
Panama	117	**156**	68	**59**	57
Papua New Guinea	**84**	103	85	**130**	50
Peru	93	**173**	76	**59**	50
Poland	111	**143**	91	**57**	57
Saudi Arabia	71	**148**	141	**39**	48
Singapore	**78**	**120**	100	97	57
Spain	84	**160**	90	**66**	54
Sweden	75	**186**	**66**	73	54
Taiwan	99	**119**	111	**73**	56
Thailand	99	116	**131**	**54**	54
Trinindad & Tobago	103	**95**	**95**	**107**	63

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United Kingdom		89	**144**	87	**81**	55
United States		94	**126**	95	**87**	58
Vietnam		**85**	96	92	**127**	51

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11 Inventory Administration

Although Extended DISC® Personal Analysis is very easy and quick to complete, there are some precautions that we recommend to guarantee the quality of the process.

Extended DISC® Personal Analysis is based on self-evaluation. To achieve the best results, it is best to complete the questionnaire as quickly as possible. Because of this, answering the whole questionnaire should take only 7-10 minutes.

11.1 Step-by-Step

Users have the option to complete the Personal Analysis questionnaires either at a computer, on paper or online.

The process for using Personal Analysis is simple.

1. Administer the questionnaires.
2. Customize and generate the Personal Analysis reports.
3. Present the behavioral styles and the Extended DISC® Diamond.
4. Discuss and explain the Personal Analysis reports.
5. Present behavioral modifications for improved individual performance.

Extended DISC® allows the facilitator to customize the presentation to address the participant's unique needs. Because of its flexibility, the facilitator has a wide range of options in determining how much time to spend on the presentation. Obviously, the more time is available, the more fluent the participants become in applying the concepts in practice. Also, since Extended DISC® has so many applications, training sessions may be focused on specific applications, such as communication skills training. In later training sessions the participants are able to use the same framework in learning new applications.

Administering the questionnaire on paper or at a computer

1. Provide the questionnaire in the person's native language
2. Give the instructions
3. Wait until you observe the process starts correctly
4. After five or so minutes check how the process is going and ask the person to speed up if necessary
5. Enter the answers in EDPS (paper questionnaire only)
6. Print the report

Administering the questionnaire online

1. Send the person the Access Code (and password if in use) and instructions on how to complete the questionnaire and the web address
2. If you are using dtr return accounts, after receiving the results by mail, import them into EDPS
3. Print the report

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11.2 General Instructions for the facilitator (paper questionnaire)

- Give the instructions carefully. Ensure the respondent has a ball point pen.
- Make sure no one will interrupt the respondent.
- Do not speak after the respondent has begun answering the questions.
- If the respondent asks the meaning of a word, do not define it. Rather, let the respondent think about the meaning and answer the question.
- After the respondent has completed the questionnaire, **check it**. It is a lot easier to correct any mistakes now than to have the user complete the questionnaire again.
- Store the questionnaire in a locked place.
- Do not provide information about the results to unauthorized individuals. Remember that every user has the right to get feedback on their own results.
- Remember and convey to the participants that Extended DISC® Theory does not classify people into good or bad. Neither does it attempt in any way to limit the opportunities of an individual. Extended DISC® Theory describes an individual's natural reaction mode and behavioral style in different types of situations. It gives the person a better ability to understand one's own and other's behavior, to adjust one's own behavior to better suit the situation, to avoid unnecessary problems in communication, and to point one's life into the direction where he or she better succeeds and enjoys it the most.
- Extended DISC® Personal Analysis is a behavioral inventory based on self-evaluation that is designed to clarify in what order and relation to others an individual prefers the areas of the four-quadrant model. The analysis has no right or wrong answers. It does not classify people into good or bad categories or in any other way classify people into better or worse.

11.3 General Instructions for the facilitator (online)

- Always send the instructions either by paper or email (or other electronic media)
- Write the instructions carefully but do not make them too long (most people do not read long instructions).
- Ask the respondent to log into the online questionnaire only when he/she is sure that no one will interrupt him/her during the next 15 minutes.
- Do not provide information about the results to unauthorized individuals. Remember that every user has the right to get feedback on their own results.
- Remember and convey to the participants that Extended DISC® Theory does not classify people into good or bad. Neither does it attempt in any way to limit the opportunities of an individual. Extended DISC® Theory describes an individual's natural reaction mode and behavioral style in different types of situations. It gives the person a better ability to understand one's own and other's behavior, to adjust one's own behavior to better suit the situation, to avoid unnecessary problems in communication, and to point one's life into the direction where he or she better succeeds and enjoys it the most.
- Extended DISC® Personal Analysis is a behavioral inventory based on self-evaluation that is designed to clarify in what order and relation to others an individual prefers the areas of the four-quadrant model. The analysis has no right or wrong answers. It does not classify people into good or bad categories or in any other way classify people into better or worse.

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11.4 General Instructions for the respondent

- There are no right or wrong answers.
- Answer the questions in order (paper only)
- Do not return to a previously answered question (paper only)
- Always answer both components (what describes you the best and the least) before moving to the next question (paper only)
- Do not ponder the questions too much. Answering the whole questionnaire should take only 7-10 minutes. Select the answer that first feels right
- Complete the questionnaire without interruptions. Do not do something else or talk with someone during the process
- Complete the questionnaire quickly, but not hastily
- Do not attempt to influence the results; you will only confuse yourself and invalidate the results
- Always use a ball point pen (paper only)

NOTE! Different countries have different laws for collecting and storing individual material. Check the local legislation and follow it precisely.

Remember! Extended DISC® Personal Analysis

- Describes the person's natural reaction mode or behavioral style in different situations
- Is a behavioral inventory based on self-evaluation
- Measures natural behavioral styles
- Does not classify people into good or bad
- Does not limit a person's ability to develop in another direction or work environment
- Does not give high or low scores or in any other way classify people into better or worse
- Does not measure intelligence, professional skills, or attitudes

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12 Inventory Reporting

The Extended DISC® Personal Analysis is in a way easy to interpret since there is a lot of text that should be self-explanatory. However, to get the most out the reports, one should be able to read the graphics (like the Profiles and the Diamond). To learn to use them requires training and experience.

NOTE! We highly recommend that everyone using the Personal Analysis tool participates in the Extended DISC® Personal Analysis Certification Training. The graphics in the report form the basis for all the information, whereas the text parts only describe partially what the core result means.

When reading the Personal Analysis report we suggest you go through the pages in the following order:

1. Profile & Diamond Page
2. Flexibility Zones Page

The first two pages should be used for learning to know the individual; they form the core results of the analysis.

3. Graphical Part
4. Additional Pages
5. Motivators Page
6. Text Page
7. Questions
8. Present Situation

Profile & Diamond Page

The Profile and Diamond Page includes all the information Extended DISC® Personal Analysis can produce. This page represents all the graphical and numerical information that has been derived from the Extended DISC® Personal Analysis Questionnaire. The interpretation of both the profiles and the Diamond require training. To interpret the results without a good understanding of how to read the information is not recommended because of the possible misinterpretations.

Flexibility Zones Page

The Flexibility Zones Page demonstrates how much and in what direction the individual's behavior is the most flexible, as well as in what areas the person is the farthest from the natural style.

It is important to note that when we describe an individual's behavior we cannot say he can do something and cannot do something. We all have the potential to do everything; it is just that some things are more natural and some less natural.

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Text Page

The Text Page describes the typical behavior of the individual. Read the text as such and use it to develop an overall picture. In evaluating specific sentences, it is important to consider a person's conscious ability to adapt behavior.

The narrative was specifically designed to be concise. Today everyone experiences information overload – Personal Analysis was designed to provide information quickly and in an easy-to-use format. However, the system's text bank is so large that it can generate over 115,000,000 different Text Pages. As a result, the results will be very specific to each individual.

Motivators Page

The Motivators Page describes the individual using four main categories. Go through each line that has significance in relation to the individual's job responsibilities. Evaluate if the person is able to use his/her strengths and how to work on the development areas. If the requirements of the job position and the strengths of the individual do not correspond, this provides an opportunity to evaluate the situation with the employee to enhance performance.

Graphical Part

The Graphical Part relates the analysis results to different overall work environment factors and requirements. Do not concentrate on the numerical value of a specific line, but focus on the items that received the lowest and highest scores. The greater numerical values reflect areas that are most natural to the individual. The lower values correspond to the areas that require the most effort and energy by the individual.

Additional Pages

The Graphical Part relates the analysis results to different overall work environment factors and requirements. Do not concentrate on the numerical value of a specific line, but focus on the items that received the lowest and highest scores. The greater numerical values reflect areas that are most natural to the individual. The lower values correspond to the areas that require the most effort and energy by the individual.

Present Situation Page

The Present Situation Page is divided into three parts: "Communicating Strong Emotions", "The Influence of the Present Environment on the Person's Motivation" and "Consistency of the results" that all provide detailed information to experienced users. The page can only be given to users that have participated Extended DISC Certification Training and have substantial experience in using the inventory.

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13 Inventory Bias

The study shows that there are no differences in validity between different nationalities or races. Cultural, social and anthropological history together with the nature of the economic structure create different preferences for behavior in different cultures. The cultural distribution maps (Extended DISC Diamond) can be used as norms when using the instrument in multi-cultural environment.

For the purpose of studying inventory bias, two randomly selected sub-populations were created, and results of those were compared against each other. The study also shows there are no differences in validity between male and female populations.

Construct validity				
	D	**I**	**S**	**C**
Part 1	0,82	0,81	0,85	0,78
Part 2	0,84	0,82	0,83	0,80
Global				
2013	**0,84**	**0,82**	**0,84**	**0,78**
2011	**0,84**	**0,82**	**0,84**	**0,78**
2009	**0,84**	**0,82**	**0,85**	**0,79**
2008	**0,84**	**0,82**	**0,84**	**0,79**
2007	**0,84**	**0,82**	**0,84**	**0,79**

Extended DISC Personal Analysis is designed to be used for adult population. The respondents need to respond to a questionnaire in their native language. The DISC Theory was originally described to illustrate the behavior of "normal" people (William Moulton-Marston: Emotions of normal People, 1927). There is no study to support the use of the instrument among mentally underdeveloped individuals.

Inventories are not expected to yield equivalent mean scores across population groups. To do so would inappropriately assume that all groups have had the same educational and cultural experiences. Rather, inventories should yield the same scores and predict the same likelihood of success for individual test-takers of the same ability, regardless of group membership. All the studies show that Extended DISC Personal Analysis works equally well for all (studied) races, all age groups and both genders.

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14 Our Ethics

Every person involved with administering Extended DISC Personal Analysis, whether administering the data collection, data processing, data delivering or providing application support, needs to be trained and certified by a qualified and certified Extended DISC trainer.

Special attention is always to be paid on local legislation and the ways it requires the data collection, data storing and data sharing processes to be handled.

Extended DISC International is a provider of high-class validated instruments. All people representing Extended DISC must follow the ethics generally accepted in their line of business. We fully follow the Code of Fair Testing Practices.

14.1 Code of Fair Testing Practices

Citation from:
Dr. William J. Russell
Executive Officer
National Council on Measurement in Education

Since the Code provides a frame of reference for the evaluation of the appropriateness of behavior, NCME recognizes that the Code may be used in legal or other similar proceedings.

14.1.1 Section 1: Responsibilities of Those Who Develop Assessment Products and Services

Those who develop assessment products and services, such as classroom teachers and other assessment specialists, have a professional responsibility to strive to produce assessments that are of the highest quality. Persons who develop assessments have a professional responsibility to:

1.1 Ensure that assessment products and services are developed to meet applicable professional, technical, and legal standards.

1.2 Develop assessment products and services that are as free as possible from bias due to characteristics irrelevant to the construct being measured, such as gender, ethnicity, race, socioeconomic status, disability, religion, age, or national origin.

1.3 Plan accommodations for groups of test takers with disabilities and other special needs when developing assessments.

1.4 Disclose to appropriate parties any actual or potential conflicts of interest that might influence the developers' judgment or performance.

1.5 Use copyrighted materials in assessment products and services in accordance *with local legislation.*

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1.6 Make information available to appropriate persons about the steps taken to develop and score the assessment, including up-to-date information used to support the reliability, validity, scoring and reporting processes, and other relevant characteristics of the assessment.

1.7 Protect the rights to privacy of those who are assessed as part of the assessment development process.

1.8 Caution users, in clear and prominent language, against the most likely misinterpretations and misuses of data that arise out of the assessment development process.

1.9 Avoid false or unsubstantiated claims in test preparation and program support materials and services about an assessment or its use and interpretation.

1.10 Correct any substantive inaccuracies in assessments or their support materials as soon as feasible.

1.11 Develop score reports and support materials that promote the understanding of assessment results.

14.1.2 Section 2: Responsibilities of Those Who Market and Sell Assessment Products and Services

The marketing of assessment products and services, such as tests and other instruments, scoring services, test preparation services, consulting, and test interpretive services, should be based on information that is accurate, complete, and relevant to those considering their use. Persons who market and sell assessment products and services have a professional responsibility to:

2.1 Provide accurate information to potential purchasers about assessment products and services and their recommended uses and limitations.

2.2 Not knowingly withhold relevant information about assessment products and services that might affect an appropriate selection decision.

2.3 Base all claims about assessment products and services on valid interpretations of publicly available information.

2.4 Allow qualified users equal opportunity to purchase assessment products and services.

2.5 Establish reasonable fees for assessment products and services.

2.6 Communicate to potential users, in advance of any purchase or use, all applicable fees associated with assessment products and services.

2.7 Strive to ensure that no individuals are denied access to opportunities because of their inability to pay the fees for assessment products and services.

2.8 Establish criteria for the sale of assessment products and services, such as limiting the sale of assessment products and services to those individuals who are qualified for recommended uses and from whom proper uses and interpretations are anticipated.

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2.9 Inform potential users of known inappropriate uses of assessment products and services and provide recommendations about how to avoid such misuses.

2.10 Maintain a current understanding about assessment products and services and their appropriate uses in education.

2.11 Release information implying endorsement by users of assessment products and services only with the users' permission.

2.12 Avoid making claims that assessment products and services have been endorsed by another organization unless an official endorsement has been obtained.

2.13 Avoid marketing test preparation products and services that may cause individuals to receive scores that misrepresent their actual levels of attainment.

14.1.3 Section 3: Responsibilities of Those Who Select Assessment Products and Services

Those who select assessment products and services, or help others do so, have important professional responsibilities to make sure that the assessments are appropriate for their intended use. Persons who select assessment products and services have a professional responsibility to:

3.1 Conduct a thorough review and evaluation of available assessment strategies and instruments that might be valid for the intended uses.

3.2 Recommend and/or select assessments based on publicly available documented evidence of their technical quality and utility rather than on unsubstantiated claims or statements.

3.3 Disclose any associations or affiliations that they have with the authors, test publishers, or others involved with the assessments under consideration for purchase and refrain from participation if such associations might affect the objectivity of the selection process.

3.4 Inform decision makers and prospective users of the appropriateness of the assessment for the intended uses, likely consequences of use, protection of examinee rights, relative costs, materials and services needed to conduct or use the assessment, and known limitations of the assessment, including potential misuses and misinterpretations of assessment information.

3.5 Recommend against the use of any prospective assessment that is likely to be administered, scored, and used in an invalid manner for members of various groups in our society for reasons of race, ethnicity, gender, age, disability, language background, socioeconomic status, religion, or national origin.

3.6 Comply with all security precautions that may accompany assessments being reviewed.

3.7 Immediately disclose any attempts by others to exert undue influence on the assessment selection process.

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3.8 Avoid recommending, purchasing, or using test preparation products and services that may cause individuals to receive scores that misrepresent their actual levels of attainment.

14.1.4 Section 4: Responsibilities of Those Who Administer Assessments

Those who prepare individuals to take assessments and those who are directly or indirectly involved in the administration of assessments as part of the process, including *consultants, trainers,* administrators, and assessment personnel, have an important role in making sure that the assessments are administered in a fair and accurate manner. Persons who prepare others for, and those who administer, assessments have a professional responsibility to:

4.1 Inform the examinees about the assessment prior to its administration, including its purposes, uses, and consequences; how the assessment information will be judged or scored; how the results will be kept on file; who will have access to the results; how the results will be distributed; and examinees' rights before, during, and after the assessment.

4.2 Administer only those assessments for which they are qualified by education, training, licensure, or certification.

4.3 Take appropriate security precautions before, during, and after the administration of the assessment.

4.4 Understand the procedures needed to administer the assessment prior to administration.

4.5 Administer standardized assessments according to prescribed procedures and conditions and notify appropriate persons if any nonstandard or delimiting conditions occur.

4.6 Avoid any conditions in the conduct of the assessment that might invalidate the results.

4.7 Provide for and document all reasonable and allowable accommodations for the administration of the assessment to persons with disabilities or special needs.

4.10 Provide reasonable opportunities for individuals to ask questions about the assessment procedures or directions prior to and at prescribed times during the administration of the assessment.

4.11 Protect the rights to privacy and due process of those who are assessed.

4.12 Avoid actions or conditions that would permit or encourage individuals or groups to receive scores that misrepresent their actual levels of attainment.

14.1.5 Section 5: Responsibilities of Those Who Score Assessments

The scoring of assessments should be conducted properly and efficiently so that the results are reported accurately and in a timely manner. Persons who score and prepare reports of assessments have a professional responsibility to:

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5.1 Provide complete and accurate information to users about how the assessment is scored, such as the reporting schedule, scoring process to be used, rationale for the scoring approach, technical characteristics, quality control procedures, reporting formats, and the fees, if any, for these services.

5.2 Ensure the accuracy of the assessment results by conducting reasonable quality control procedures before, during, and after scoring.

5.3 Minimize the effect on scoring of factors irrelevant to the purposes of the assessment.

5.4 Inform users promptly of any deviation in the planned scoring and reporting service or schedule and negotiate a solution with users.

5.5 Provide corrected score results to the examinee or the client as quickly as practicable should errors be found that may affect the inferences made on the basis of the scores.

5.6 Protect the confidentiality of information that identifies individuals as prescribed by *local legislation*.

5.7 Release summary results of the assessment only to those persons entitled to such information by *local legislation* or those who are designated by the party contracting for the scoring services.

5.8 Establish, where feasible, a fair and reasonable process for appeal and rescoring the assessment.

14.1.6 Section 6: Responsibilities of Those Who Interpret, Use, and Communicate Assessment Results

The interpretation, use, and communication of assessment results should promote valid inferences and minimize invalid ones. Persons who interpret, use, and communicate assessment results have a professional responsibility to:

6.1 Conduct these activities in an informed, objective, and fair manner within the context of the assessment's limitations and with an understanding of the potential consequences of use.

6.2 Provide to those who receive assessment results information about the assessment, its purposes, its limitations, and its uses necessary for the proper interpretation of the results.

6.3 Provide to those who receive score reports an understandable written description of all reported scores, including proper interpretations and likely misinterpretations.

6.4 Communicate to appropriate audiences the results of the assessment in an understandable and timely manner, including proper interpretations and likely misinterpretations.

6.5 Evaluate and communicate the adequacy and appropriateness of any norms or standards used in the interpretation of assessment results.

6.6 Inform parties involved in the assessment process how assessment results may affect them.

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6.7 Use multiple sources and types of relevant information about persons or *organizations* whenever possible in making decisions.

6.8 Avoid making, and actively discourage others from making, inaccurate reports, unsubstantiated claims, inappropriate interpretations, or otherwise false and misleading statements about assessment results.

6.9 Disclose to examinees and others whether and how long the results of the assessment will be kept on file, procedures for appeal and rescoring, rights examinees and others have to the assessment information, and how those rights may be exercised.

6.10 Report any apparent misuses of assessment information to those responsible for the assessment process.

6.11 Protect the rights to privacy of individuals and *organizations* involved in the assessment process.

14.1.7 Section 7: Responsibilities of Those Who Educate Others About Assessments

The process of educating others about assessments, whether as part of *certification training, organizational or personal* development, or *on-the*-job training, should prepare individuals to understand and engage in sound measurement practice and to become discerning users of tests and test results. Persons who educate or inform others about assessment have a professional responsibility to:

7.1 Remain competent and current in the areas in which they teach and reflect that in their instruction.

7.2 Provide fair and balanced perspectives when teaching about assessment.

7.3 Differentiate clearly between expressions of opinion and substantiated knowledge when educating others about any specific assessment method, product, or service.

7.4 Disclose any financial interests that might be perceived to influence the evaluation of a particular assessment product or service that is the subject of instruction.

7.5 Protect all secure assessments and materials used in the instructional process.

7.6 Model responsible assessment practice and help those receiving instruction to learn about their professional responsibilities in *behavioral* measurement.

7.7 Provide fair and balanced perspectives on assessment issues.

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15 Support Material

Extended DISC System Manual, Extended DISC International, 2005

Extended DISC Personal Analysis Manual, Extended DISC International, 2005

Extended DISC Team Analysis Manual, Extended DISC International, 2005

Extended DISC Work Pair Analysis Manual, Extended DISC International, 2007

Extended DISC Job Analysis Manual, Extended DISC International, 2005

Extended DISC Personal Analysis 360 Manual, Extended DISC International, 2005

Extended DISC Student Research, Extended DISC International, 1994

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16 Frequently Asked Questions

16.1 Extended DISC Theory related questions

"What is the theory behind the assumption that Least answers produce the unconscious self and Most answers the conscious self?"

The interpretation of the Profiles is based on the original DISC Theories and the Extended DISC Theory. To understand fully the role of the different questions in forming the profiles would require understanding of the calculation rules for the Profiles.

Although it is important to minimize the response time, the responses given are still mostly based on conscious thinking and analysis. It is clearly easier with the Most responses for a person to adjust the responses in a direction he/she wants to adjust them as it is with the Least responses. Having this assumption makes the Profile I, which is mostly based on the Most responses, not a valid measure of one's unconscious self but a measure of one's conscious self - or to be more precise, one's conscious adjustment of the unconscious self.

However, since interpretation of Profile II is not based on the responses given but the responses not given, and since the calculation logic of the profile is turned around, and since the Least responses are more difficult to consciously rationalize, it has been found in empirical studies that the interpretation of the Profile II is closest to the unconscious self (some call it natural or pressure behavior).

"Why is Extended DISC Personal Analysis measuring more unconscious behavior than other DISC based tools?"

Unconscious behavior describes the most natural style for a person to behave. It requires least energy, is least stressful and allows to person to behave most effectively in a longer period of time.

Measuring unconscious behavior is more difficult than conscious behavior. It may also require a person more time to work with the results. The techniques used to achieve this relate to the number of choices in each question, the choice of words and their inter-relationship in each choice and the calculation logic behind the questionnaire.

"How can you be sure that the behaviors that are analyzed from the questionnaires are accurately determined? Since the research findings are from European and American subjects, how can they represent Asians?"

The process for using the Extended DISC Personal Analysis is divided in steps. Step 1 is the theoretical framework behind the system. This requires deep understanding of the theory and logics how the system works. Being aware of the theory is important for the end user also to be able to understand what the tool can do and what it can not do. Understanding the

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technical logic behind the tool is not necessary. Step 2 is the process of collecting the information and creating the Profiles and the report. This is purely statistical and mathematical and is totally culture-free. Step 3 is the application of the information in some environment. This part requires the understanding of the tool theory and especially the understanding of the context where the information is to be applied. This part is totally culture bound and requires understanding of the culture.

In simple words, you need to understand where the tool is based on but not how it produces the results. Again, you need to understand the environment where the results are to be applied. If someone gets a D profile, it means that the person prefers a D response/behavior. But what does it mean in Thailand? This is something the tool doesn't know; it only knows that compared to other Thai people this person is more D. It is then up to those who understand the culture to know what does D exactly mean in Thailand.

The key is that in the questionnaire we can find those stimuli (words) that cause the desired type of person to respond in a desired way. The purpose of the questionnaire is find out how this person is compared to other people within the same culture. Translating the questionnaire is therefore the key issue; it can not always be a direct translation of another language. The validation study is a process where we check if the tool can identify within this culture the different behavioral traits.

“Extended DISC Personal Analysis should not be used in recruitment since it is not measuring a person's whole personality?”

First of all, I need to align with your statement that Extended DISC Personal Analysis does not measure an individual's whole personality; that is not even its intention. When measuring the whole personality we need to incorporate several instruments (you can find most of them within the Extended DISC System) together with interviews and background information, at minimum.

Extended DISC Personal Analysis measures an important part of our personality; our natural way of responding to external stimuli, i.e., how we show our feelings and emotions to outer world. In every day language that is usually described as our natural behavioral style. The reason Extended DISC Personal Analysis is useful in recruitments is manifold. It helps the interviewer to get into deeper level much faster than without it. It works as a shortcut to understanding the individual. In the recruitment decision itself it helps us in identifying what are the potential areas where the person will feel more and less comfortable with. And in after-recruitment phase it gives us supporting information on how we could best manage the person to keep both his motivation and performance levels at maximum.

Extended DISC Personal Analysis should never be the sole criterion in decision making when recruiting a person. But, in our opinion, the recruitment process would be clearly less efficient without it. In designing assessment tools, the key is not the collection of the information; there are statistically proven methods available for that. The key is really how to identify if the result is valid or not. The Extended DISC System has, as far as we know, the most strict control system for identifying invalid results. We also are the only company in the business actually doing annual validity check-up for all the languages of regions where we operate.

There is, however, always the area where the results are questionable and it remains up to the

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consultant within the interview to exercise caution when applying the results. There are instructions for consultants available on how to identify these results with less validity than what should be expected.

"What theory is the Extended DISC System based on?"

Extended DISC System is not based on one theory alone, but the original Jungian theory on human behavior forms the bases to the DISC theory and all instruments based on it. In addition, when developing the system several other models and theories, like the Katzenbach & Smith concept of high-perfoming team, the wave-curve model (Sappinen) on cultural adaptation and the Hofstede model of cultural dimensions, have been utilized.

16.2 Extended DISC Personal Analysis Questionnaire related questions

"What is the grade reading level our questionnaire is designed for?"

Its probably very much culture and society related. Assuming a person has had a normal proper schooling, he/she should be able to cope with the questionnaire at the age of 14-15 (it's been done successfully at the age of 9).

However, the more important aspect is the formation of one's personality and self-identity, which definitely pushes the age up to around 18. Therefore, we don't recommend the questionnaire for people younger than 18.

"Questionnaire respondents sometime find the word pairing contradictory. One of the words may describe them most, but then the second word describes them least. Hence, they are unsure how to select. How should we best instruct the respondents how to go about answering the questionnaire?"

The purpose of the questionnaire is not to make it easy for the people to respond to it. The only advice we can give is that it is supposed to be difficult and you just have to select the row that describes you best and the row that describes you least. Anything else would make us part of the answering process, which should not be the case. The key is that they compare the rows, not the words. If the questions were easy (like most Disc based tools have), it would be easy to adjust your answers to the direction you want and you couldn't anymore measure the subconscious behavior.

"When answering the questions, why do we have to imagine ourselves at work? Actually, we don't show our true selves at work because we need to conform to the work environment. In order to get the correct analysis, shouldn't we imagine ourselves outside work?"

We are asked to imagine ourselves at work because it is important that we concentrate on something when answering. The worst option is that we start thinking of ourselves at work in question 1, at home in Q2, with friends in Q3 etc. This will definitely ruin our possibility of establishing a systematic answering pattern. The other issue is that we do not control our behavior fully in the work environment (as we do in our home environment). This contrast forces us to think and analyze ourselves more and makes it, therefore, easier for us to establish the answering pattern.

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“Regarding the questionnaire, how can only 24 items generate so much contents for the Personal Analysis report?”

The 24 questions don't create the content of the report; they only create the Profiles. The content of the report is then based on the Profiles. Since we have learned that people's behavior is predictable, once we identify the type we can predict the person's behavior in different situations.

“How can you be so sure that these 24 items will generate the accurate information needed for the analysis?”

The 24 questions (actually 48 questions) don't always create accurate result (Profile). The key is to have a system that identifies when the results are accurate and when not. The method is purely statistical; we have actually one question (including two sub questions) that is then repeated 24 times. The key is to identify if the person has managed to establish a certain answering pattern, which is the same in both the sub questions and which he/she has been able to follow throughout the questionnaire. The result you can see in the shapes, size and position of the two Profiles.

“How accurate are Personal Analysis results if a person completes the questionnaire again after a few months?”

If the person's life environment has remained much the same without any major crises, the forecast is that the results will not change much.

However, if the environment has changed or if the person has undergone major personal stress, there is a good chance that the Profile has changed.

We need to remember that the idea is not the Profile has to stay the same in time; people need to have skill to adjust to the environment and, within time, this adjustment is certainly reflected in the Profile as a shift to some direction.

Another issue is to make a difference between change in the Profile and a temporary adjustment. A rule of thumb could be that if the basic shape of the Profile changes from one of the 6 main profile types to another, the Profile has changed.

“Why do two people get the same (or almost the same report) although they have answered differently in the questionnaire?”

In the questionnaire, there are 12 possible combinations in each question. Since there are 24 questions (with 12 possible combinations in each) the total number of possible ways to answer the questionnaire is 79 496 847 203 390 800 000 000 000! Managing that many different combinations would be both totally impossible and meaningless. Hence, the number of combinations has been reduced into combinations that internal resemblance is greater than external (they resemble themselves more combinations outside the group). More on that little later.

Note! There is no interpretational information in the individual answers. The answer can only be used for the next step in the process. Answers of two or more individuals can not be compared to one another.

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Calculating the Profiles and the Diamond

The process for calculating the Profiles is a combination of straight-forward mathematical equations that reduce the number of combinations to 11 753 582 400. Managing that many different Profiles would still be impossible and the differences in the Profiles would not represent significant differences in the individuals' actual behavior. To help the Extended DISC user to use the Profiles a classification system with different levels of deepness has been created:

Level	**Differentiating feature**	**Number of combinations**
1	Dominant character (example: I)	4
2	Letter combinations (example: ISC)	40
3	Upper Percentages (example: 0-50-30-20)	800
4	Lower Percentages (example: 100-0-0-0)	n/a

The different levels are used for different purposes. In general training to the system, Level 1 is often deep enough. In applied training (like sales training) Level 2 is often appropriate. In that case every 40th person on average get the same result (Profile combination).

The Diamond is similarly divided in levels:

Level	Differentiating feature	Number of combinations
1	Dominant character (example: I)	4
2	Characters above the Middle Line (different layers in the Diamond)	4
3	Letter combinations (example: ISC)	40
4	Advanced Letter Combinations	160

Generating the report

To generate the different pages of the report, different combinations are used. Text Page uses the Level 4 in the Diamond to classify the results. For each combination there is a separate text bank from which the actual report is generated. The text bank enables 228 383 696 totally different Text Pages to be generated. (Note! Our competition at best can create about 200 different texts). It is possible for two people belonging to the same Diamond Level 4 class to have partly the same text but unlikely to have exactly the same text, unless they belong to a very rare class where the text bank for that class is smaller. Motivators Page is also based on the Diamond Level 4 classification. The Graphical Page and the Additional Pages are based on the Profiles Level 3 classification. The Flexibility Zones is based on the Diamond Level 4

Profiles II and I

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Since Profile II measures more closely the individual's natural self (unconscious behavior) and Profile I the response to the impulses from the environment, it is natural that the report is generated based on Profile II. Differences in Profile I do not reflect differences in the individuals' natural behavior but in the relationship to their current environments. The Advanced Mode options allows for printing some information about Profile I (Present Situation).

"How does one answer in the questionnaire influence the bars in graphical and Additional Page?"

One answer does not directly influence anything but the Profiles. The Profiles are the first and primary result of the calculation formula behind the questionnaire. All the rest of the report is based on the shape, size and position of the two Profiles.

The shape of the Profile defines the place in the Diamond and the Percentages. Those are used for selecting the text and calculating the bars on different pages.

The important feature behind the reliability of the Extended DISC Personal Analysis is that it is not possible to influence the results by changing one single answer, the respondent needs to change the complete answering pattern to have any major influence on the results on different pages of the report.

16.3 Extended DISC Profile and Diamond related questions

"Do you have any experience why a person would get a Mirror Profile twice?"

Basically, if someone does it twice, I have not heard of any extra reason it might be caused for. Things that I could think of (as possible causes) are..

- person has a totally wrong perception of oneself
- person is trying to (consciously or unconsciously) cheat the system
- person has a strong belief and understanding of what is required from him (by the current environment), and feels it being totally opposite to what he is (in this case, Profile II would be valid)
- person is currently undergoing a stage in his life that makes it not possible to have a stable self image
- person has somehow misunderstood the instructions

"What's the main advantage of the Diamond?"

The Diamond is an excellent platform to view the results of several (even thousands) of individuals at one glance. It also provides us with an easy way to compare individuals (like within a team) and to identify where our strengths as a team lie. It also works as a quick overview for the team itself to know who is where. It is easy to teach, giving us the possibility to use it in presentations that don't allow time to go through the theory in more detail. It also operates as a connecting link between different tools; it is a platform that can be used on individual, team, department, organizational and even national level. It can be used to

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describe the unconscious and conscious behavior of an individual. Just to name some of the advantages...

“Is it possible to say anything about a person's energy level in an Extended DISC Profile?”

A person's energy level is more dependent on his/her physical condition, motivation and attitude than behavioral style.

Naturally, D and I, being more extroverted styles, show their energy level more visibly to other people. They are said to be more energetic.

There might be a correlation between the size of Profiles and the person's energy level. If both Profiles are tight (or tightesh), it is often a sign of frustration - which typically decreases a person's energy level.

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[1] Extended DISC Diamond is based on the Extended DISC Theory. An explanation of the construct of the Diamond can be found in Extended DISC System Manual.
[2] Extended DISC Personal Analysis measures the natural response preference to an external stimuli.
[3] Profile Point is an indication of the position of the particular DISC trait in the Profile template. More information about Profile Points in the Extended DISC System Manual.
[4] Invalid Profile is a result of the respondent not being able to establish an answering pattern and following it up throughout the answering. More information about Invalid Profiles in Extended DISC Personal Analysis Manual.

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