

Swedish Validation Addendum

to Everything DiSC® Research Report for *Everything DiSC Work of Leaders*® Assessment

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Swedish Validation: Everything DiSC Work of Leaders®

The purpose of this *Addendum* is to expand the *Everything DiSC® Research Report for Adaptive Testing Assessment* by Wiley (2012) with validation results from research conducted on the Swedish *Everything DiSC Work of Leaders®* assessment including descriptions of the translation and validation of the Swedish *Work of Leaders* scale items. For information about the background and research on *Everything DiSC* and the circumplex representation of the DiSC® model, including information about the validation process, please consult the *Everything DiSC Research Report for Adaptive Testing Assessment*.

Description of the Swedish Validation of Work of Leaders

Sample

A total of 490 Swedish-speaking men (51.2%) and women (48.8%) responded to a total of 92 items. The majority of the participants are of European decent ($n=468$) and are college or university graduates ($n=367$). The demographics of the sample are shown in Table 1.

Table 1. Everything DiSC Assessment Development, Swedish Sample Demographics

| | | |
|------------------|-------------------------------|-------|
| Gender | Male | 51.2% |
| | Female | 48.8% |
| Age | 18–25 | 1.2% |
| | 26–30 | 8.2% |
| | 31–35 | 15.1% |
| | 36–40 | 17.3% |
| | 41–45 | 21.0% |
| | 46–50 | 16.5% |
| | 51–55 | 11.4% |
| | 56–60 | 7.6% |
| | 61+ | 1.6% |
| Education | University / college graduate | 74.9% |
| | Training at tertiary level | 14.1% |
| | Vocational / technical | 6.9% |
| | High school | 4.1% |

| | | |
|-------------------|--|-------|
| Employment | Middle management | 50.6% |
| | Workers (not in a managerial position) | 24.1% |
| | Manager at the highest level | 10.4% |
| | Self-employed | 10.4% |
| | Pupil / student / apprentice / trainee | 1.0% |
| | Other | 3.5% |
| Heritage | European | 95.5% |
| | Asian | 1.2% |
| | Mellanöstern | .8% |
| | Two or more regions | .8% |
| | Other | 1.6% |
| Industry | Manufacturing / production | 13.7% |
| | Education | 12.0% |
| | Finance / insurance / real estate | 10.8% |
| | Healthcare | 9.4% |
| | Business operations | 8.4% |
| | Public administration | 8.4% |
| | IT | 7.8% |
| | Transport / logistics | 6.1% |
| | Construction | 4.7% |
| | Wholesale / retail | 2.4% |
| | Other | 16.3% |

N=490

Translation of Items

The quality of the translation of the items was ensured through a six step process: (1) The items were translated by a professional translator from English (source language) to Swedish (target language). It was a requirement that the translator's native language was the target language. (2) A second professional translator, also a native speaker of the target language, was tasked with back-translating the items from target language to source language. (3) The original items and the back-translated items were reviewed by two bilingual subject-matter experts. (4) In situations where there were differences in meaning/connotations between the source and the back-translation, this was fed back to the first translator. (5) The translator assessed the differences and, when appropriate, stated why an item should remain the same or substituted it with a more suitable item to match the meaning of the original English item. (6) In situations where extra input was needed to aid the translation, the development team was contacted to establish the intended meaning/connotation of an item.

The Swedish Work of Leaders Assessment

The Swedish *Work of Leaders* assessment is composed of items consisting of two statements placed at opposite ends of a four-point continuum. Participants are instructed to choose the point on the continuum that best describes them. For instance, one continuum states, *When I present an idea, I speak spontaneously* on one end and *When I present an idea, I have my thoughts well prepared* on the other end.

Internal Reliability for Swedish Work of Leaders Scales

Analysis of internal consistency was performed on the Swedish *Work of Leaders* items. This analysis evaluates the degree of correlation among questions that profess to measure the same thing. That is, each of the 18 scales in the *Work of Leaders* is measured using a series of items. Researchers recognize that if all of the items on a given scale (e.g., Remaining Open scale) are in fact measuring the same thing (e.g., Openness), they should all correlate with each other to some degree. In other words, all of the items on a scale should be consistent with each other. This analysis was performed on the Swedish data to ensure that the construct developed and tested on a US population could be adapted to a Swedish population using the translated items.

A statistic called Cronbach's alpha is usually regarded as the best method for evaluating internal consistency. Cronbach's alpha expresses the degree of consistency as a specific number, which typically varies between 0 and 1. If the value of alpha is 0, then there is no relationship among the items/statements that have been grouped as a scale. On the other hand, if all the statements in an assessment measure in an identical fashion, then the value of alpha will be 1, which indicates absolute internal consistency. Cronbach's alpha is calculated separately for each of the 18 scales on the *Work of Leaders* assessment.

The following guidelines are frequently used to evaluate the quality of a scale's internal reliability: alpha values above .70 are generally considered acceptable and satisfactory. Alpha values above .80 are usually considered quite good, and values above .90 are considered to reflect exceptional internal consistency. In fact, alpha values that are too high may indicate that the items on a scale are redundant or too similar, suggesting that the respondent is asked to respond to the same thing many times repeatedly, not providing any new information about the respondent.

Alpha coefficients were calculated for the Swedish sample ($N=490$). The Swedish *Work of Leaders* assessment demonstrates satisfactory to good internal consistency, as shown by the alpha values listed in Table 2. All reliabilities are above .70, with a median of .780. These results suggest that the items selected for each of the 18 Swedish *Work of Leaders* scales are appropriate to use for measuring a unified construct.

Table 2. Internal Reliability for Swedish Work of Leaders

| WOL Scale | Cronbach's Alpha | Number of Items |
|------------------------------|------------------|-----------------|
| Remaining Open | .87 | 15 |
| Prioritizing the Big Picture | .73 | 8 |
| Being Adventurous | .90 | 11 |
| Speaking Out | .81 | 13 |
| Seeking Counsel | .73 | 5 |
| Exploring Implications | .77 | 4 |
| Explaining Rationale | .81 | 4 |
| Structuring Messages | .79 | 4 |
| Exchanging Perspectives | .75 | 8 |
| Being Receptive | .74 | 9 |
| Being Expressive | .84 | 9 |
| Being Encouraging | .79 | 8 |
| Being Driven | .77 | 9 |
| Initiating Action | .83 | 8 |
| Providing a Plan | .85 | 10 |
| Analyzing In-Depth | .71 | 6 |
| Addressing Problems | .71 | 13 |
| Offering Praise | .76 | 11 |

Construct Validity: Scale Intercorrelations for Swedish Work of Leaders

As part of examining the construct validity of the *Work of Leaders*, intercorrelations among the 18 scales were performed to test if hypothesized relationships between the scales were supported by Swedish data (see Table 3). Coefficients for the 18 scales range from -.84 to .87, and many of the stronger correlations are the result of overlapping items among the scale. For instance, the Seeking Counsel scale, which measures a tendency to consult with others when making decisions, has many items in common with the Exchanging Perspectives scale, which measures a tendency to discuss with others before making decisions, and these two scales are therefore expected to be somewhat correlated with each other ($r = .63$). Overall, correlations are as expected. For instance, we would expect a high positive correlation between the Speaking Out scale and the Addressing Problems scale, and a high negative correlation between the Providing a Plan scale and the Remaining Open scale. As you can see in Table 3, these patterns are supported by the Swedish data.

Table 3. Intercorrelations for Swedish Work of Leaders

| | Remaining Open | Prioritizing the Big Picture | Being Adventurous | Speaking Out | Seeking Counsel | Exploring Implications | Explaining Rationale | Structuring Messages | Exchanging Perspectives | Being Receptive | Being Expressive | Being Encouraging | Being Driven | Initiating Action | Providing a Plan | Analyzing In-Depth | Addressing Problems | Offering Praise |
|------------------------------|----------------|------------------------------|-------------------|--------------|-----------------|------------------------|----------------------|----------------------|-------------------------|-----------------|------------------|-------------------|--------------|-------------------|------------------|--------------------|---------------------|-----------------|
| Remaining Open | | | | | | | | | | | | | | | | | | |
| Prioritizing the Big Picture | .73 | | | | | | | | | | | | | | | | | |
| Being Adventurous | .57 | .51 | | | | | | | | | | | | | | | | |
| Speaking Out | .33 | .35 | .58 | | | | | | | | | | | | | | | |
| Seeking Counsel | -.20 | -.16 | -.22 | -.08 | | | | | | | | | | | | | | |
| Exploring Implications | -.54 | -.63 | -.54 | -.44 | .19 | | | | | | | | | | | | | |
| Explaining Rationale | -.40 | -.33 | -.22 | -.23 | -.08 | .38 | | | | | | | | | | | | |
| Structuring Messages | -.58 | -.50 | -.42 | -.39 | .19 | .59 | .33 | | | | | | | | | | | |
| Exchanging Perspectives | -.15 | -.09 | -.24 | -.27 | .63 | .21 | -.12 | .22 | | | | | | | | | | |
| Being Receptive | .03 | -.01 | -.14 | -.24 | .26 | .10 | -.26 | .10 | .49 | | | | | | | | | |
| Being Expressive | .40 | .36 | .59 | .87 | .00 | -.44 | -.33 | -.42 | -.15 | -.08 | | | | | | | | |
| Being Encouraging | .20 | .18 | .22 | .13 | .16 | -.16 | -.31 | -.07 | .29 | .61 | .30 | | | | | | | |
| Being Driven | .27 | .31 | .71 | .70 | -.27 | -.41 | -.08 | -.27 | -.35 | -.35 | .56 | .06 | | | | | | |
| Initiating Action | .47 | .42 | .86 | .36 | -.14 | -.43 | -.15 | -.34 | -.12 | -.05 | .44 | .27 | .51 | | | | | |
| Providing a Plan | -.84 | -.64 | -.46 | -.36 | .16 | 0.62 | .41 | .60 | .15 | -.01 | -.38 | -.16 | -.24 | -.35 | | | | |
| Analyzing In-Depth | -.42 | -.34 | -.38 | -.30 | .10 | 0.68 | .60 | .49 | .07 | -.06 | -.35 | -.22 | -.23 | -.30 | .49 | | | |
| Addressing Problems | .21 | .21 | .46 | .57 | -.26 | -.31 | .03 | -.26 | -.44 | -.64 | .44 | -.16 | .63 | .33 | -.19 | -.12 | | |
| Offering Praise | .17 | .16 | .10 | .06 | .29 | -.12 | -.43 | -.05 | .44 | .73 | .22 | .68 | -.10 | .12 | -.17 | -.26 | -.42 | |

Work of Leaders Priorities

The Swedish *Work of Leaders* assessment demonstrates satisfactory to good internal consistency of the 8 leadership priority scales, as shown by the alpha values listed in Table 4. The median alpha is .81 and the values range from .74 to .89.

Table 4. Internal Reliability of the Work of Leaders Priority Scales

| Priority | Cronbach's Alpha | Number of Items |
|------------|------------------|-----------------|
| Pioneering | .89 | 10 |
| Energizing | .86 | 11 |
| Affirming | .75 | 11 |
| Inclusive | .81 | 5 |
| Humble | .74 | 6 |
| Deliberate | .88 | 14 |
| Resolute | .81 | 8 |
| Commanding | .80 | 13 |

N = 490

Summary

Analysis of data collected on the Swedish version of the *Everything DiSC Work of Leaders* assessment using Swedish participants indicates that the development and translation of the assessment was successful. The Swedish assessment shows acceptable to high reliability on each of the 18 scales and correlations between the scales showing similar patterns as those found in the English version of *Work of Leaders*.

- The reliability of the instrument on the 18 scales of the *Work of Leaders* demonstrates satisfactory to good internal consistency. All reliabilities are above .70, with a median of .78.
- The internal structure among the 18 scales of the *Work of Leaders* is as expected, indicated by intercorrelations that range from -.84 to .87, supports the hypothesized relationships.
- The reliability of the instrument on the 8 priority scales of the *Work of Leaders* demonstrates good internal consistency. All reliabilities are above .70, with a median of .81.