EVERYTHING DiSC 363® FOR LEADERS

Everything DiSC 363® for Leaders

Research Report

by Inscape Publishing

Introduction

Everything DiSC 363® for Leaders is a multi-rater assessment and profile that is designed to give participants feedback on their leadership performance. The figure below shows the Everything DiSC® Leadership model that is the foundation for *Everything DiSC 363 for Leaders.*

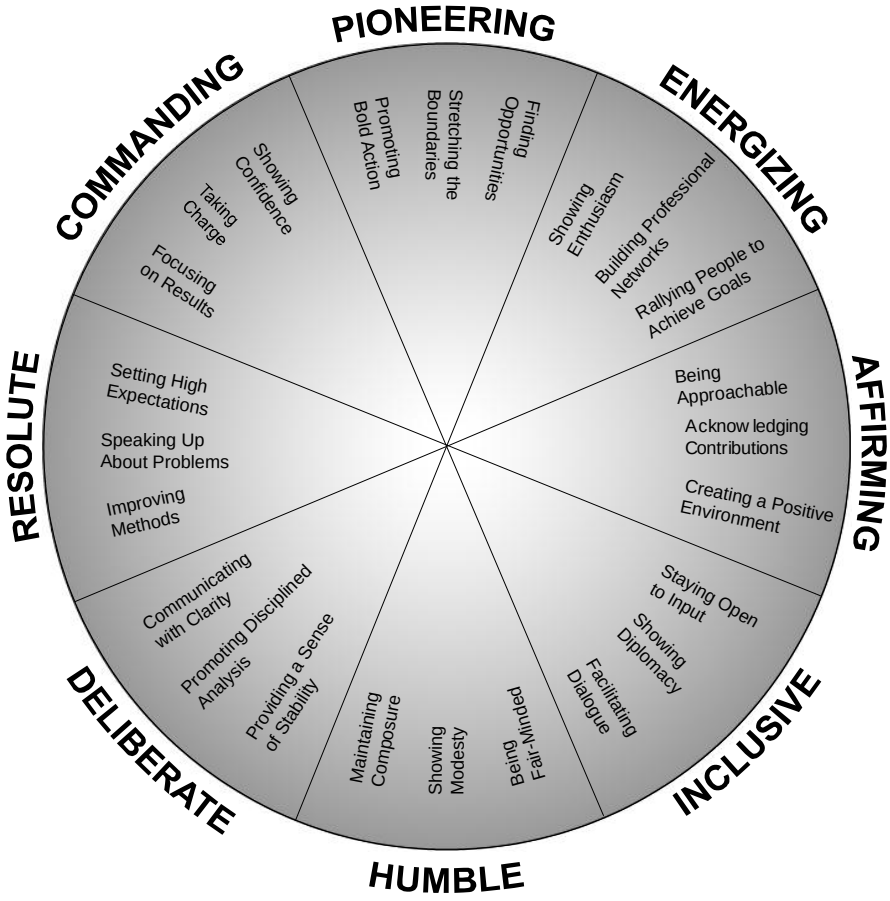

Figure 1. The Everything DiSC Leadership Model

The words around the circle represent eight leadership approaches. In the theoretical model, each approach is most correlated with adjacent approaches and least correlated with opposite approaches. Three leadership practices are assigned to each approach for a total of 24 practices, and these can be seen inside the circle. Again, these practices are theoretically most correlated with practices within the same approach, then most highly correlated with adjacent practices. Practices that sit opposite each other on the model are least correlated.

Completing the Assessment

An *Everything DiSC 363 for Leaders* report can only be generated if an assessment is completed by a leader and at least one rater. Although there is some overlap in the assessment experience for both of these participants, they

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are different.

The Leader Assessment Experience

1) Leaders complete an Everything DiSC® personality assessment, which uses adaptive testing technology to increase scoring certainty. Leaders respond to a series of statements (i.e., I am lively, I keep to myself) on a five-point ordered response scale, indicating how much they agree with each statement. If necessary, respondents are presented with additional items to attain a more accurate score. Results from this portion of the assessment are not directly communicated to leaders in the profile but are reflected in their narrative feedback. Information on the validation of this assessment is included in the Everything DiSC Application Library Research Report.

2) Leaders are presented with 72 leadership behavior statements (e.g., "I propose new directions for the group"). For each statement, they are asked to rate how often they demonstrate that behavior from 1 (never or almost never) to 7 (always or almost always). Results from this portion of the assessment are used to calculate self-assessed performance scores on each of the eight approaches and 24 practices. The rater also responds to these same statements.

The Rater Assessment Experience

1) Raters are presented with 72 leadership behavior statements with regard to the leader (e.g., "She proposes new directions for the group"). For each statement, they are asked to rate how often the leader demonstrates that behavior from 1 (never or almost never) to 7 (always or almost always). Results from this portion of the assessment are used to calculate rater-assessed performance scores on each of the eight approaches and 24 practices. Because the leader also responds to these same statements, it is possible to show comparisons between self-assessed and rater-assessed performance scores. This assessment is the main focus of this research report, and we will refer to it as the 363 for Leaders assessment.

2) Raters are presented with 24 leadership behaviors (corresponding to the 24 leadership practices) and asked if they would like to see the leader demonstrate these behaviors more often (e.g., "Do you think she needs to be more active about finding new opportunities for the group?"). Raters may respond "Yes, a lot more," "Yes, a little more," or "No." After responding to each statement, participants are given the option to select prewritten comments to give to the leader. Results from this portion of the assessment are presented to the leader throughout his or her report. More specifically, the leader can see the comments chosen by the raters, and the three behaviors that are requested most often are suggested as

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areas for development. Because this section is a straightforward survey and does not involve the development of scales, it is not the focus of this validation report.

Development of the 363 for Leaders Assessment

Alpha Phase

In the first development phase, a content analysis of contemporary leadership literature was conducted to identify leadership constructs that are relevant to the DiSC® model. Data on these concepts were then gathered by asking participants who had just completed an online personality assessment to volunteer for research on a leadership project. Participants were asked questions about their own leadership performance, as well as the performance of leaders in their previous or current organizations. These data were used to identify and build initial approach and practice scales, as well as to understand the psychometric relationships among these leadership constructs. More than 26,000 participants were included in this stage of the research.

Beta Phase 1 (Exploratory)

In the first beta phase, an initial 363 for Leaders assessment was constructed for both leaders and raters. Leaders from a wide range of industries completed their portion of the assessment. Raters for each leader were selected by either the leader's manager or an HR professional within the organization. After these data were collected, they were analyzed. Based on this analysis, the Everything DiSC® Leadership model and scales were refined.

Beta Phase 2 (Confirmatory)

In the second beta phase, the refined assessment was again completed by leaders and raters from a wide range of industries. Raters for each leader were selected by either the leader, the leader's manager, or an HR professional within the organization. Data from these participants were analyzed to evaluate the refined tool for reliability and validity.

The Validation Process

Psychological instruments are used to measure abstract characteristics like intelligence, extroversion, and honesty. So how do researchers evaluate these instruments? How do we know whether such tools provide accurate information or just generate haphazard feedback that sounds believable? Simply put, if an instrument is indeed useful and accurate, it should meet a variety of standards that have been established by the scientific community. Validation is the process researchers use to assess the quality of a psychological instrument by testing it against these standards. This paper is designed to help you understand these standards and see how Inscape's 363 for Leaders assessment performs under examination.

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Validation asks two fundamental questions:

1. **How reliable is the tool?** That is, researchers ask if an instrument measures in a way that is consistent and dependable. If the results from a tool contain a lot of random variation, it is less reliable.

2. **How valid is the tool?** That is, researchers ask if an instrument measures accurately. The more that a tool measures what it proposes to measure, the more valid the tool is.

Note that no psychometric tool is perfectly reliable or perfectly valid. All psychological instruments are subject to sources of error. Reliability and validity are seen as matters of degree on continuous scales, rather than reliable/unreliable and valid/invalid on dichotomous scales. Consequently, it is more appropriate to ask, "How much evidence is there for the reliability of this tool?" than, "Is this tool reliable?"

Sample

The results presented in this report are from a sample of 480 leaders. In all cases, leaders were rated by two or more raters, with a median of six raters per leader. The total number of raters was 3,043. Demographics for leaders in this sample are included in Appendix 1.

Scoring

Scores were calculated by averaging the total responses for all items on each scale. Since the responses range from 1 to 7, so do the resulting scale scores. Each of the 24 practices contains three items, and each approach contains three of those 24 practices. Therefore, each approach scale contains nine items. Means and standard deviations for all scales are shown in Table 1.

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Table 1. Scale Means and Standard Deviations

	Other-Rated		Self-Rated	
APPROACHES	**Mean**	**SD**	**Mean**	**SD**
Pioneering	5.49	.73	5.35	.94
Energizing	5.53	.80	5.65	.94
Affirming	5.79	.77	5.80	.76
Inclusive	5.72	.78	5.50	.75
Humble	5.53	.74	5.46	.77
Deliberate	5.64	.69	5.56	.82
Resolute	5.65	.64	5.72	.84
Commanding	5.83	.68	5.64	.87
PRACTICES				
Finding Opportunities	5.56	.75	5.63	.96
Stretching the Boundaries	5.56	.76	5.17	1.26
Promoting Bold Action	5.35	.80	5.29	1.07
Showing Enthusiasm	5.62	.84	5.78	1.05
Building Professional Networks	5.59	.79	5.82	1.00
Rallying People to Achieve Goals	5.45	.86	5.57	.99
Being Approachable	6.00	.78	5.97	.84
Acknowledging Contributions	5.70	.85	5.69	.94
Creating a Positive Environment	5.66	.81	5.73	.86
Staying Open to Input	5.74	.81	5.45	1.05
Showing Diplomacy	5.83	.84	5.60	.84
Facilitating Dialogue	5.59	.77	5.46	.84
Maintaining Composure	5.63	.87	5.36	.99
Showing Modesty	5.43	.84	5.36	.99
Being Fair-Minded	5.53	.75	5.67	.83
Communicating with Clarity	5.68	.75	5.38	1.02
Promoting Disciplined Analysis	5.60	.68	5.66	.93
Providing a Sense of Stability	5.64	.79	5.62	.92
Setting High Expectations	5.57	.74	5.67	.93
Speaking Up about Problems	5.78	.63	5.96	.93
Improving Methods	5.65	.76	5.66	1.05
Showing Confidence	5.93	.69	5.63	.98
Taking Charge	5.75	.77	5.56	.99
Focusing on Results	5.81	.74	5.74	.97

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Internal Reliability

Internal reliability evaluates the degree of correlation among questions that profess to measure the same thing. In other words, all of the items on a scale should be consistent with each other. A statistic called Cronbach's Alpha expresses the degree of correlation as a specific number, which typically varies between 0.0 and 1.0. If the value of Alpha is 0.0, then there is no relationship among the items/statements on a given scale. On the other hand, if all the statements in a questionnaire measure in an identical fashion, then the value of Alpha will be 1.0, which indicates absolute internal consistency.

Cronbach's Alpha is calculated separately for each of the tool's scales. Each approach in the 363 for Leaders assessment contains nine items, and each practice contains three items. 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.

The scales used in the Everything DiSC® Leadership model demonstrate good-to-excellent internal consistency, as shown by the Alpha values listed on Tables 2 and 3. For raters, all scales had an Alpha well above .80. Note that coefficients are shown for individual raters and aggregated raters (i.e., mean scores calculated across raters on each item before calculating Alpha). For leaders, three of the 32 scale Alphas fell below the preferred cutoff of .70. Given that the focus of the 363 profile is on rater feedback and that these scales are reflecting self-assessment, these less-than-desirable Alphas are within the tolerable range.

Table 2. Approach Scale Internal Reliabilities

	ALPHA		
APPROACHES	RATERS		LEADERS
	Individual	Aggregated	
Pioneering	.95	.98	.90
Energizing	.94	.96	.91
Affirming	.96	.97	.89
Inclusive	.96	.97	.83
Humble	.94	.96	.88
Deliberate	.95	.96	.89
Resolute	.93	.95	.90
Commanding	.94	.96	.93

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Table 3. Practice Scale Internal Reliabilities

	ALPHA		
	RATERS		LEADERS
PRACTICES	Individual	Aggregated	
Finding Opportunities	.87	.93	.79
Stretching the Boundaries	.87	.93	.80
Promoting Bold Action	.89	.90	.83
Showing Enthusiasm	.89	.92	.74
Building Professional Networks	.83	.88	.88
Rallying People to Achieve Goals	.92	.93	.84
Being Approachable	.89	.91	.76
Acknowledging Contributions	.94	.96	.69
Creating a Positive Environment	.91	.93	.76
Staying Open to Input	.91	.94	.83
Showing Diplomacy	.91	.92	.59
Facilitating Dialogue	.90	.92	.67
Maintaining Composure	.93	.95	.86
Showing Modesty	.83	.87	.64
Being Fair-Minded	.86	.93	.82
Communicating with Clarity	.90	.94	.81
Promoting Disciplined Analysis	.85	.88	.75
Providing a Sense of Stability	.90	.91	.78
Setting High Expectations	.85	.91	.77
Speaking Up about Problems	.84	.89	.84
Improving Methods	.87	.91	.82
Showing Confidence	.83	.89	.83
Taking Charge	.91	.93	.79
Focusing on Results	.88	.90	.81

The median Alpha on the approach scales was .95 for individual raters and .90 for leaders. The median reliability on the practice scales was .89 for individual raters and .80 for leaders. These results suggest that the rater-generated scales on the 363 for Leaders assessment demonstrate excellent reliability. As well, the leader-generated scales demonstrate satisfactory to excellent reliability, with a few exceptions.

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Inter-rater Reliability

Internal reliability evaluates the degree of agreement among raters. Interclass correlations were used to assess inter-rater reliability as described by Ebel (1951). Coefficients above .40 are considered to reflect moderate agreement. Those above .60 are considered to reflect substantial agreement. Those above .80 are considered to reflect outstanding agreement.

For this analysis, a special sample was used. Raters were all direct reports of the person being rated. The number of raters was 2,502, and the number of people being rated was 586. Reliability coefficients for the approach and practice scales can be seen in Tables 4 and 5, respectively. These coefficients suggest that the 363 for Leaders scales have substantial to outstanding inter-rater reliability. The median reliability for the approach and practice scales were .78 and .76, respectively.

Table 4. Approach Scale Inter-rater Reliabilities

Pioneering	.77
Energizing	.78
Affirming	.78
Inclusive	.76
Humble	.77
Deliberate	.79
Resolute	.81
Commanding	.76

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Table 5. Practice Scale Inter-rater Reliabilities

Finding Opportunities	.76
Stretching the Boundaries	.77
Promoting Bold Action	.73
Showing Enthusiasm	.77
Building Professional Networks	.74
Rallying People to Achieve Goals	.74
Being Approachable	.81
Acknowledging Contributions	.73
Creating a Positive Environment	.75
Staying Open to Input	.75
Showing Diplomacy	.76
Facilitating Dialogue	.74
Maintaining Composure	.77
Showing Modesty	.73
Being Fair-Minded	.74
Communicating with Clarity	.78
Promoting Disciplined Analysis	.77
Providing a Sense of Stability	.75
Setting High Expectations	.79
Speaking Up about Problems	.76
Improving Methods	.76
Showing Confidence	.86
Taking Charge	.79
Focusing on Results	.80

Validity

Multidimensional Scaling Analyses

The Everything DiSC® Leadership model specifies a very specific set of relationships among its scales: It predicts that the eight approach scales and 24 practice scales will form a circumplex. That is, they will be arranged in a circular format at equal intervals. A statistical technique called multidimensional scaling analysis (MDS) is a highly useful tool for examining the fit of the data to the conceptual model. First, this technique allows for a visual inspection of the relationships among the eight approach scales or the 24 practice scales. Second, this technique makes it possible to look at all of the scales simultaneously. In Figures 2 and 3, scales that are plotted closer together have a stronger positive relationship. Scales that are farther apart are more dissimilar.

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As can be seen in Figure 2, the approach scales are arranged in the order that is expected by the Everything DiSC® Leadership model. (Keep in mind that the original MDS rotation is presented below, and this rotation is arbitrary.) Although the eight scales do not form a perfectly equidistant circle (as predicted by the model), this theoretical ideal is nearly impossible to obtain with actual data. The actual distance between the scales, however, is roughly equal, providing strong support for the model and its assessment.

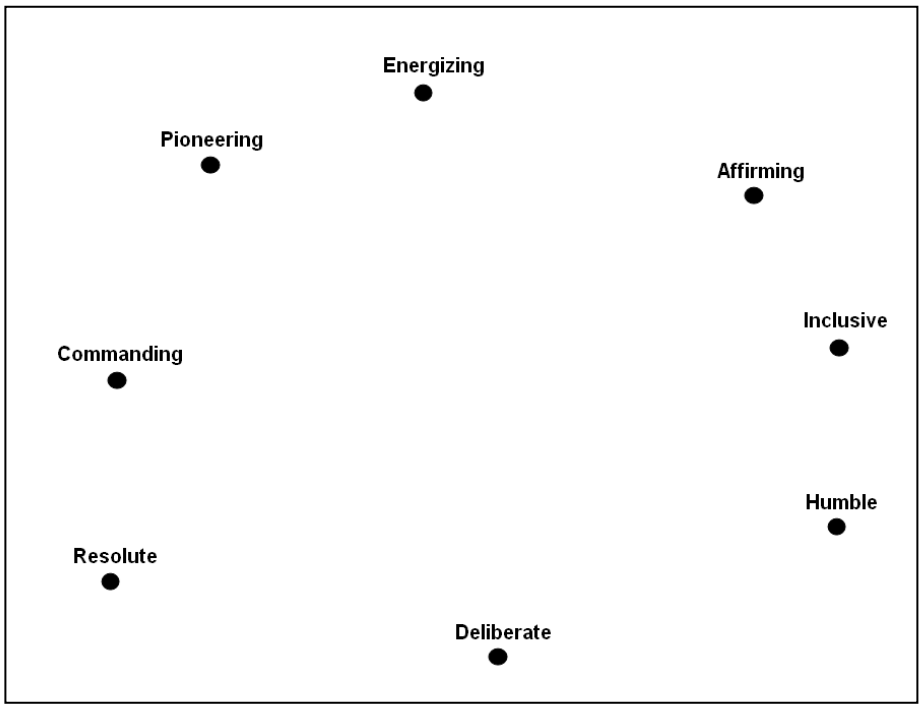

Figure 2. MDS Analysis for the Approach Scales

The MDS results for the practice scales are shown in Figure 3. Again, the original MDS rotation is presented below, and this rotation is arbitrary. Dashed lines have been added to help illustrate groups of scales that should theoretically cluster. This figure offers support for the Everything DiSC Leadership model in several ways. First, the scales are arranged in a circular fashion, and clusters of scales are ordered in the manner predicted by the model (although the rotation is presented in a counter-clockwise fashion in this representation). Second, scales that should theoretically cluster together in the model do cluster together. For example, the practice of Taking Charge is located close to the practice of Showing Confidence, as predicted by the model. Third, clusters are spaced at roughly equal distances around the circle, although not perfectly equidistant.

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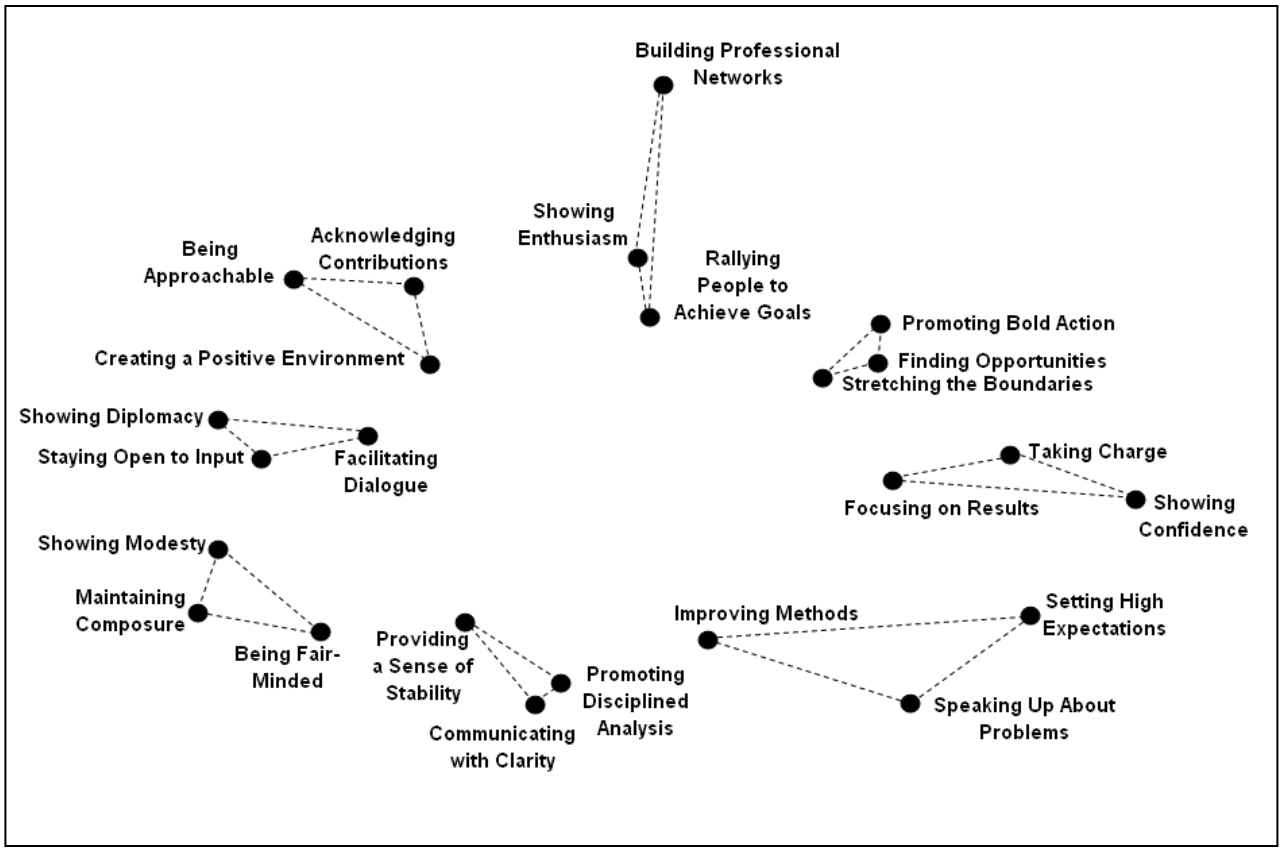

Figure 3. MDS Analysis for the Practice Scales

Additionally, the S-stress for the approach data and the practice data were .013 and .081, respectively. The RSQ values were .999 and .964, respectively. These values reflect the ability of a two-dimensional model to fit the data. Lower S-stress values are preferred (with a minimum of 0), whereas higher RSQ values are preferred (with a maximum of 1). S-stress values below .1 suggest an excellent fit of the data to a two-dimensional configuration. All of the S-stress and RSQ values reported here suggest that a third dimension is not needed to explain the relationship among these scales.

Scale Intercorrelations

By examining the intercorrelations among scales, we can measure with more precision how well the data fits the Everything DiSC® Leadership model. The model proposes that adjacent scales (e.g., Commanding and Pioneering) will have stronger positive correlations than opposite scales (e.g., Commanding and Inclusive). Further, if the data are controlled for overall leadership ability, opposite scales are expected to have negative correlations. For example, among leaders at the same skill level, leaders who are more Commanding than others are expected to be less Inclusive. To control for overall leadership ability, scale scores were ipsatized for each leader. That is, each

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leader's total average rating was calculated along with his or her total standard deviation across all items. The total mean was subtracted from individual item means, and then this number was divided by the total standard deviation. Ipsatized scale means were then calculated by summing ipsatized item scores for each scale. As a result, each leader's mean ipsatized scale score across all scales was zero. Ipsatized scale scores, then, represent relative strengths for the individual. Table 6 shows the ipsatized and non-ipsatized correlations among the approach scales.

Table 6. Approach Scale Intercorrelations

	Pioneering	Energizing	Affirming	Inclusive	Humble	Deliberate	Resolute	Commanding
Pioneering		.85	.69	.62	.56	.65	.76	.81
Energizing	.26		.85	.74	.63	.65	.65	.70
Affirming	-.37	.34		.91	.81	.69	.52	.47
Inclusive	-.53	-.13	.56		.89	.76	.52	.40
Humble	-.57	-.52	.14	.52		.80	.55	.39
Deliberate	-.43	-.57	-.34	.01	.29		.78	.63
Resolute	.17	-.34	-.68	-.59	-.23	.26		.83
Commanding	.42	.03	-.65	-.79	-.59	-.06	.56	

Note: Ipsatized scales are shown below the diagonal and non-ipsatized scales are shown

above the diagonal.

Because the Everything DiSC® Leadership model proposes that the eight approach scales are arranged as a circumplex, an even more strict set of statistical assumptions are required of the data. The pattern of correlations for a given scale are expected to be arranged in a particular order. As seen in Table 7 below, the strongest theoretical correlation for two given scales is labeled r_1. The second strongest is labeled r_2, and so on. In this case, r_4 represents the correlation between two theoretically opposite scales. Consequently, r_4 should be a reasonably

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strong negative correlation. For each scale, we should observe the following relationship if the scales do, in fact, support a circumplex structure: $r_1 > r_2 > r_3 > r_4$.

Table 7. Expected Scale Intercorrelations.

	Pioneering	Energizing	Affirming	Inclusive	Humble	Deliberate	Resolute	Commanding
Pioneering	1							
Energizing	r_1	1						
Affirming	r_2	r_1	1					
Inclusive	r_3	r_2	r_1	1				
Humble	r_4	r_3	r_2	r_1	1			
Deliberate	r_3	r_4	r_3	r_2	r_1	1		
Resolute	r_2	r_3	r_4	r_3	r_2	r_1	1	
Commanding	r_1	r_2	r_3	r_4	r_3	r_2	r_1	1

Looking at Table 6, we do, in fact, observe a $r_1 > r_2 > r_3 > r_4$ pattern for each scale. In addition, we can examine the magnitude of these correlations in comparison to the theoretically expected magnitudes. The predicted magnitudes of r_1 , r_2 , r_3 , r_4 under a circumplex structure are listed in Table 8, as described by Wiggins (1995). The "actual" r_x values are the median correlations for a given r_x. Although the actual and predicted values are not exactly the same (a near impossible standard for practical purposes), the magnitude of the (ipsatized) actual and predicted correlation values is quite similar, thus providing additional support for the Everything DiSC® Leadership model and the 363 for Leaders assessment.

Table 8. Actual and Predicted Scale Relationships

r_1	>	r_2	>	r_3	>	r_4	
.84	>	.71	>	.58	>	.53	Actual (non-ipsatized average)
.40	>	-.05	>	-.50	>	-.65	Actual (ipsatized average)
.42	>	.03	>	-.36	>	-.73	Predicted

Additionally, intercorrelations for the practice scales are shown in Table 9. Of the 24 practices, 21 demonstrated their highest correlation with one of the other two practices assigned to the same approach.

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Table 9. Practice Scale Intercorrelations

Practices	Finding Opportunities	Stretching the Boundaries	Promoting Bold Action	Showing Enthusiasm	Building Professional Networks	Rallying People to Achieve Goals	Being Approachable	Acknowledging Contributions	Creating a Positive Environment	Staying Open to Input	Showing Diplomacy	Facilitating Dialogue
Finding Opportunities		.87	.85	.75	.68	.85	.56	.64	.69	.58	.51	.67
Stretching the Boundaries	.51		.86	.77	.72	.85	.57	.65	.73	.59	.54	.67
Promoting Bold Action	.50	.55		.75	.71	.83	.53	.58	.66	.54	.44	.61
Showing Enthusiasm	.07	.12	.17		.78	.90	.72	.80	.84	.67	.66	.74
Building Professional	.06	.06	.16	.28		.78	.69	.75	.73	.56	.58	.62
Rallying People to Achieve	.28	.31	.36	.62	.22		.70	.79	.85	.69	.67	.77
Being Approachable	-.29	-.32	-.20	.22	.28	.01		.80	.84	.79	.86	.79
Acknowledging	-.23	-.23	-.22	.33	.18	.23	.37		.89	.79	.83	.82
Creating a Positive	-.28	-.21	-.19	.37	.08	.33	.43	.53		.83	.87	.87
Staying Open to Input	-.35	-.40	-.30	-.09	-.12	-.19	.36	.28	.27		.87	.92
Showing Diplomacy	-.43	-.48	-.48	-.03	-.06	-.10	.57	.45	.50	.53		.86
Facilitating Dialogue	-.25	-.32	-.27	-.03	-.12	-.05	.27	.28	.32	.68	.48	
Maintaining Composure	-.24	-.32	-.33	-.32	-.23	-.36	.22	-.03	.13	.21	.44	.14
Showing Modesty	-.34	-.38	-.38	-.30	-.16	-.34	.12	.12	.08	.43	.40	.29
Being Fair-Minded	-.39	-.43	-.47	-.40	-.34	-.48	.07	-.03	.04	.38	.34	.30
Communicating with	-.19	-.21	-.22	-.28	-.31	-.28	-.20	-.14	-.23	-.01	.05	-.02
Promoting Disciplined	-.11	-.16	-.29	-.58	-.39	-.49	-.36	-.33	-.36	-.06	-.12	-.02
Providing a Sense of	-.44	-.36	-.49	-.23	-.37	-.31	-.16	-.04	.01	.08	.12	.06
Setting High Expectations	.19	.27	.08	-.21	-.10	-.14	-.48	-.34	-.50	-.46	-.54	-.46
Speaking Up about	.09	.17	.14	-.38	-.16	-.43	-.45	-.50	-.60	-.36	-.56	-.36
Improving Methods	.04	.02	-.07	-.25	-.43	-.29	-.35	-.30	-.33	-.19	-.27	-.21
Showing Confidence	.26	.38	.37	-.05	.06	-.06	-.41	-.46	-.53	-.54	-.70	-.52
Taking Charge	.18	.30	.33	.02	.04	.06	-.42	-.41	-.40	-.52	-.65	-.50
Focusing on Results	.30	.28	.18	.05	-.09	.14	-.44	-.37	-.41	-.50	-.56	-.45

Note: Ipsatized scales are shown below the diagonal and non-ipsatized scales are shown above the diagonal

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Table 9. Practice Scale Intercorrelations (continued)

	Maintaining Composure	Showing Modesty	Being Fair-Minded	Communicating with Clarity	Promoting Disciplined Analysis	Providing a Sense of Stability	Setting High Expectations	Speaking Up About Problems	Improving Methods	Showing Confidence	Taking Charge	Focusing on Results
Finding Opportunities	.48	.46	.55	.58	.61	.59	.65	.71	.68	.62	.70	.79
Stretching the Boundaries	.48	.51	.58	.60	.64	.64	.67	.75	.70	.65	.74	.80
Promoting Bold Action	.42	.41	.48	.53	.51	.52	.55	.70	.61	.65	.74	.72
Showing Enthusiasm	.50	.55	.59	.57	.50	.66	.48	.55	.61	.49	.62	.69
Building Professional	.45	.51	.50	.51	.50	.54	.52	.50	.55	.52	.62	.65
Rallying People to Achieve	.53	.57	.62	.61	.59	.68	.57	.60	.64	.53	.67	.77
Being Approachable	.68	.65	.72	.52	.49	.62	.23	.42	.49	.21	.34	.45
Acknowledging	.60	.68	.71	.58	.56	.68	.38	.49	.55	.27	.42	.53
Creating a Positive	.72	.72	.79	.65	.64	.76	.39	.52	.63	.32	.49	.60
Staying Open to Input	.69	.77	.84	.64	.63	.73	.30	.49	.58	.22	.35	.48
Showing Diplomacy	.78	.78	.82	.63	.61	.72	.24	.38	.53	.11	.28	.43
Facilitating Dialogue	.70	.76	.83	.69	.69	.76	.37	.55	.63	.29	.44	.56
Maintaining Composure		.65	.78	.56	.59	.66	.24	.39	.53	.14	.28	.40
Showing Modesty	.29		.75	.64	.66	.72	.28	.48	.58	.13	.31	.43
Being Fair-Minded	.42	.35		.68	.76	.82	.40	.57	.67	.27	.42	.55
Communicating with	.04	.13	.11		.81	.82	.49	.68	.72	.44	.54	.59
Promoting Disciplined	.09	.21	.32	.40		.81	.58	.77	.76	.48	.58	.65
Providing a Sense of	.13	.25	.34	.41	.30		.53	.65	.78	.41	.54	.66
Setting High Expectations	-.26	-.20	-.16	-.03	.22	-.04		.77	.60	.66	.67	.79
Speaking Up about	-.28	-.20	-.08	.10	.42	-.03	.47		.81	.79	.79	.78
Improving Methods	-.06	.03	.08	.20	.29	.28	.20	.48		.54	.66	.72
Showing Confidence	-.38	-.44	-.34	-.03	.09	-.19	.47	.58	.13		.81	.70
Taking Charge	-.42	-.38	-.35	-.06	.04	-.12	.36	.49	.20	.67		.80
Focusing on Results	-.36	-.35	-.29	-.07	.02	-.04	.53	.29	.24	.43	.51	

Note: Ipsatized scales are shown below the diagonal and non-ipsatized scales are shown above the diagonal.

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With both ipsatized and non-ipsatized scales, the average correlations among scales in the same approach was higher than the average correlation of individual scales with scales in adjacent approaches. As with the approach scales, we do observe a $r_1 > r_2 > r_3 > r_4$ pattern for each cluster of practice scales.

Comparing Self and Other Ratings

The correlations among the self-rated scale scores and the other-rated scale scores are shown in Table 10.

Table 10. Correlation Between Self and Other Ratings

	Self/Other Correlations
Approach Scales	
Pioneering	.36
Energizing	.50
Affirming	.41
Inclusive	.30
Humble	.16
Deliberate	.26
Resolute	.34
Commanding	.46
Practice Scales	
Finding Opportunities	.31
Stretching the Boundaries	.21
Promoting Bold Action	.40
Showing Enthusiasm	.48
Building Professional Networks	.46
Rallying People to Achieve Goals	.41
Being Approachable	.35
Acknowledging Contributions	.35
Creating a Positive Environment	.35
Staying Open to Input	.25
Showing Diplomacy	.27
Facilitating Dialogue	.19
Maintaining Composure	.20
Showing Modesty	.11
Being Fair-Minded	.16
Communicating with Clarity	.21
Promoting Disciplined Analysis	.22
Providing a Sense of Stability	.26
Setting High Expectations	.34
Speaking Up about Problems	.33
Improving Methods	.21
Showing Confidence	.50
Taking Charge	.38
Focusing on Results	.37

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These correlations show greater consensus on some scales than on others. Scales that measure outwardly assertive behavior (e.g., Energizing and Commanding) demonstrate the highest correlations. Scales that measure more subtle, perhaps inward behaviors, (e.g., Humble, Deliberate) show smaller correlations.

Analyses were also performed to examine the relationship between overall leadership ability and self-other agreement. For each leader, an overall average rating was computed. Leaders were then divided into three categories: the bottom 25%, the middle 50%, and the top 25%. Table 11 shows the correlations between self and other ratings for each of the approach scales by overall leadership ability.

Interestingly, those leaders who received the lowest ratings show the highest correlations between self and other ratings. Conversely, those with the highest ratings show the lowest correlations. It is possible that poorly-rated leaders have more pronounced strengths and challenges and thus show more agreement (between self and other ratings) in the relative magnitude of their leadership abilities.

Table 11. Correlation Between Self and Other Ratings by Overall Leadership Ability

	Self/Other Correlation		
Scale	**Bottom**	**Middle**	**Top**
Pioneering	.52	.33	.09
Energizing	.55	.44	.11
Affirming	.53	.35	.03
Inclusive	.45	.17	.14
Humble	.37	.07	.15
Deliberate	.46	.21	.20
Resolute	.52	.37	.19
Commanding	.64	.35	.33
Median	**.52**	**.28**	**.15**

As shown in Table 12, further analyses suggest that lower-rated leaders overestimate their scores and higher-rated leaders underestimate their scores, even though higher-rated leaders still rated themselves higher (mean self-rating = 5.77) than lower-rated leaders (mean self-rating = 5.41). This difference of .36 in self-ratings, however, is dwarfed by the difference between these same two groups in their ratings by others (1.49). These findings suggest that leaders' self-ratings improve slightly as their ability level increases, but not nearly at the same rate as their ratings by others.

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Table 12. Overall Mean Ratings by Leadership Ability

Overall Rating	Mean Rating		
	Other Rating	Self Rating	Difference
Bottom 25%	4.85	5.41	-0.56
Middle 50%	5.71	5.59	0.12
Top 25%	6.34	5.77	0.57

Correlations with Ratings of Leadership Effectiveness

Raters were asked to rate leaders on three global leadership effectiveness variables. The raters were asked to rate the degree to which they agreed or disagreed with each of these three statements: "[This person] is a good leader," "[This person] is respected in the organization as a good leader," and "I enjoy working with [this person]." Each leader's ratings on these questions were then correlated with his or her scores on the approach scales and are included in Table 13.

Table 13. Correlation between Approach Scales and Overall Effectiveness

	Outcome Variables		
Approach	**Good Leader**	**Respected as Good Leader**	**Enjoy Working With**
Pioneering	.70	.66	.51
Energizing	.72	.69	.57
Affirming	.66	.65	.63
Inclusive	.63	.64	.65
Humble	.57	.61	.56
Deliberate	.66	.69	.58
Resolute	.60	.58	.42
Commanding	.61	.58	.35

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All of the approach scales show sizable correlations with the first two effectiveness variables (i.e., 'Good Leader' and 'Respected as a Good Leader') and at least moderate correlations with the third variable (i.e., 'Enjoy Working With'). These findings suggest that the approaches do, in fact, have a strong relationship with perceived leadership ability. It is not surprising that some approaches, like Commanding and Resolute, are less correlated with relationship enjoyment, as these approaches are often correlated with personal attributes such as aggressiveness and stubbornness.

Correlations with the DiSC® Scales

The Everything DiSC® assessment includes eight scales that each measure a personal disposition, as shown in Table 14. In the Everything DiSC Leadership model, each of the eight approaches corresponds to one of the eight DiSC® scales.

Table 14. The Eight DiSC Scales

DiSC Scale	Description	Corresponding Leadership Approach
Di	active, fast-paced disposition	Pioneering
i	interactive, lively disposition	Energizing
iS	agreeable, warm disposition	Affirming
S	accommodating, patient disposition	Inclusive
SC	moderate-paced, cautious disposition	Humble
C	private, analytical disposition	Deliberate
CD	questioning, skeptical disposition	Resolute
D	direct, dominant disposition	Commanding

Analyses were performed to determine if the approach scales demonstrate the predicted relationships with the Everything DiSC scales. The eight ipsatized other-rated approach scales and the eight DiSC scales were submitted to an MDS analysis. The results, as shown in Figure 4, suggest that the approach scales do, in fact, conform to the theoretical model. All approach scales are located closest to their corresponding DiSC scale. Further, all scales are in the order predicted by the model, and the spacing between each approach/DiSC scale pair is roughly equidistant. The S-stress value and RSQ value for this solution were .083 and .956, respectively. This suggests that two dimensions are sufficient to account for the relationships among these scales. Correlations among the Everything DiSC scales and the approach scales are also shown in Table 15.

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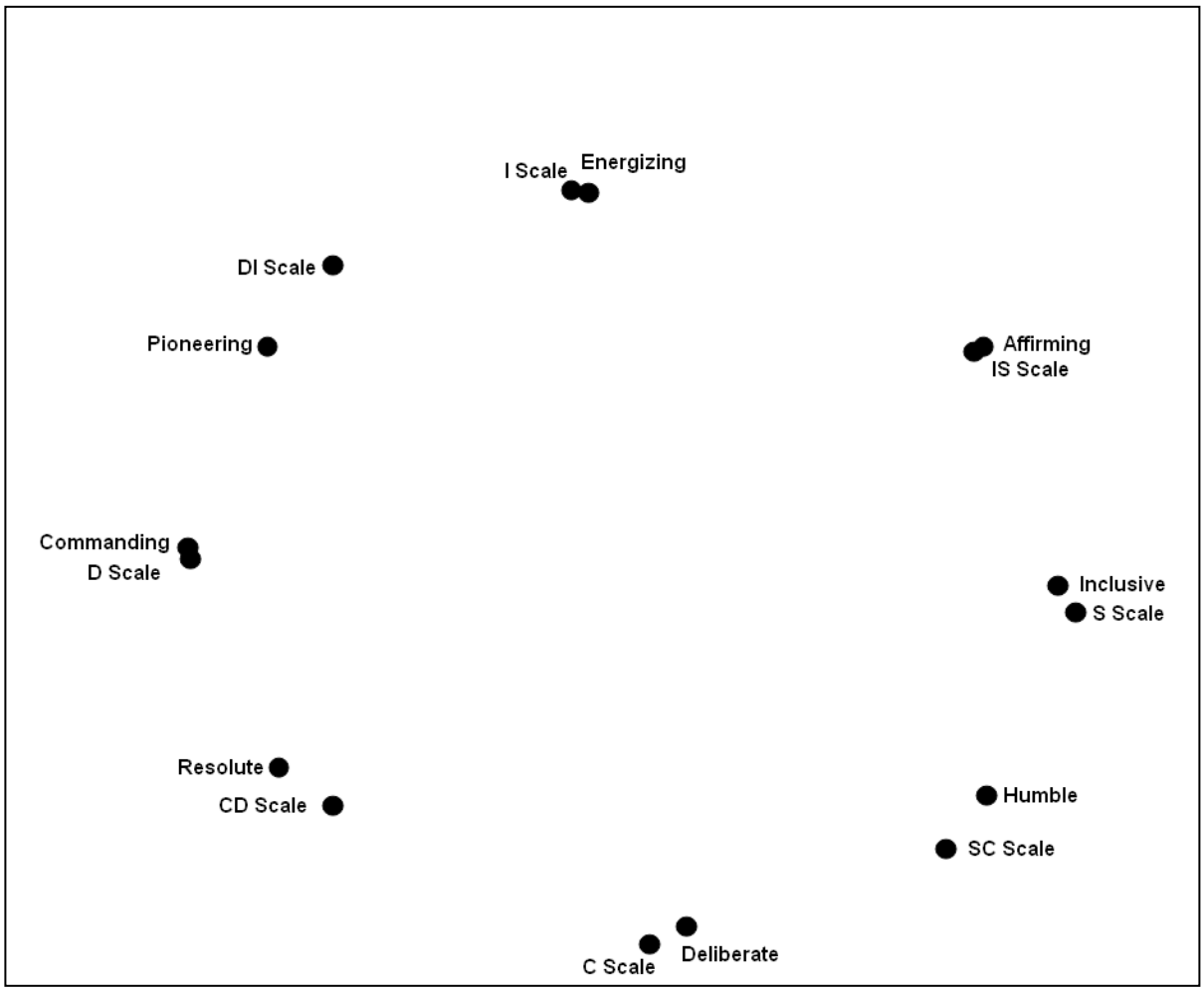

Figure 4. MDS Results for Approach Scales and Everything DiSC® Scales.

Table 15. Correlations among Everything DiSC Scales and Approach Scales

	DI scale	I scale	IS scale	S scale	SC scale	C scale	CD scale	D scale
Pioneering	.41	.18	-.13	-.25	-.40	-.18	.05	.27
Energizing	.44	.58	.30	-.11	-.41	-.52	-.31	.00
Affirming	-.03	.31	.52	.34	.06	-.32	-.40	-.42
Inclusive	-.29	-.10	.40	.49	.35	.01	-.23	-.52
Humble	-.44	-.37	.11	.42	.49	.27	-.05	-.35
Deliberate	-.41	-.50	-.24	.11	.37	.50	.22	-.04
Resolute	-.01	-.21	-.49	-.41	-.06	.29	.38	.43
Commanding	.29	.10	-.44	-.56	-.39	-.03	.33	.59

Note: Approach scales are ipsatized.

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Differences Based on Demographics

A series of ANOVAs were conducted to examine the degree to which scale scores were related to gender and ethnicity. A special sample was used for this analysis, which included 594 men and 540 women. Total sample size was 1134. Sample sizes for different ethnic groups were as follows: Asian American = 28, African American = 60, Caucasian = 1009, Hispanic = 37.

With regard to gender, analyses showed that women received higher scores on all eight approach scales and all 24 practice scales. Differences, though statistically significant, were not large on a practical level. The median difference for the approach scales was 0.20, and the median difference on the practice scales was 0.23. Across all scales, differences ranged from 0.07 to 0.31.

With regard to ethnicity, statistically significant differences ($p<=.05$) were found on one of the approach scales (i.e., Commanding ($p=.03$) and three of the practice scales (i.e., Speaking up about Problems ($p=.006$), Showing Confidence ($p=.03$), and Taking Charge ($p=.02$)). On the Commanding scale, lower scores were achieved by Asian Americans and higher scores were achieved by Hispanics. The difference between the highest and lowest mean scores was 0.45. This pattern of differences was repeated for each of the three practice scales mentioned above. Although this may reflect real population differences, it is also entirely possible that these observed differences were related to small sample sizes of Asian Americans and Hispanics.

Summary

Analyses support the reliability of the 363 for Leaders assessment. The reliabilities for all eight approach scales show excellent reliabilities for both the rater and leader groups. The practice scales show excellent reliability for the rater groups and decent to good reliability for the leader group. Analyses also support the validity of the Everything DiSC® Leadership model and the ability of the 363 for Leaders assessment to measure the scale in that model. Multidimensional scaling results demonstrate that the approach and practice scales are arranged in a manner consistent with the model. The proposed correlations among scales were also supported by scale intercorrelations. In addition, the correlation among the approach scales and the eight DiSC® scales conforms to the Everything DiSC Leadership model.

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Appendix 1. Validation Sample Demographics

Gender		%
	Female	47
	Male	53
Age		
	18 - 25	2
	26 - 35	16
	36 - 45	32
	46 - 55	33
	56 or older	18
Education		
	College Graduate	47
	Graduate/Professional Degree	33
	High School Graduate	5
	Some College	12
	Some High School	1
	Technical/Trade school	3
Ethnicity		
	African American	5
	Asian American	1
	Caucasian	87
	Hispanic	2
	Native American	1
	Other	4
Employment		
	Executive	27
	Mid-level Management	31
	Professional	18
	Supervisory	6
	Other	17
Industrial		
	Business Services	14
	Construction	4
	Educational Services	8
	Finance/Insurance/Real	12
	Health Services	19
	Hospitality	3
	Manufacturing	14
	Public Administration	3
	Transportation/Utilities	2
	Wholesale/Retail Trade	6
	Other	16

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Appendix 2. References

Wiggins, J. S. (1995). *Interpersonal adjective scales: Professional manual*. Odessa, FL:

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