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RESEARCH DESK

Flexibility and Trust Survey
Psychometric Evaluation

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INTRODUCTION

The Flexibility and Trust Survey (FTS) was first published by the Conscious Leadership Alliance (formerly known as Trust Within Assessments Leadership Institute) in January 2009 to provide organizations with a tool to assess their leaders' interpersonal flexibility and trust building ability.

There are two parts to the survey: Part 1 measures Interpersonal Flexibility (IF) and Part 2 measures trust building ability based on the Values that Build Trust (VBT) model.

PART 1. Interpersonal Flexibility (IF) Scale

The interpersonal flexibility scale was originally developed by Dr. Ralph Colby in 1973 as a means of providing individuals feedback on their level of flexibility as perceived by others. Colby defined flexibility as a measure of a person's ability to see other people's needs as at least as important as his or her own needs. The purpose of this study is therefore to explore the underlying structure and internal reliability of the interpersonal flexibility scale and to norm it to the 2018 US and Australian workforce population.

PART 2. Interpersonal Values that Build Trust (VBT) Scale

The interpersonal trust scale was originally developed by Dr. Ralph Colby in 1973 as a means of measuring trust between individuals. Colby suggested that four behaviors needed to be present in any relationship for trust to develop; they were acceptance, openness, congruence and reliability. Keith Ayers, further developed Colby's four behaviors that build trust by suggesting that each of the four behaviors were supported by two specific values which he called the values that build trust (VBT). He argued that an individual needs to believe in these values in order to put the effort into operating by the behaviors. Sixteen items had been devised by Ayers to measure the degree to which an individual operates by the values that build interpersonal trust.

SECTION 1 – THE INTERPERSONAL FLEXIBILITY (IF) SCALE

This report extends on previous FTS Reviews (2010 and 2011) and reviews interpersonal flexibility (IF) and Values that Build Trust (VBT). This report includes 536 respondents (66 leaders and 470 colleagues). The analyses were conducted using IBM's SPSS Statistics 24 and the AMOS Graphics add-on.

Previous reviews of data collected in 2010 and 2011 revealed that there were three subscales measuring different aspects of interpersonal flexibility. They were identified as Interpersonal Warmth, Interpersonal Understanding and Interpersonal Encouragement. The addition of these sub-scales has resulted in a more reliable measure of interpersonal flexibility and can provide fine-grained analysis of a leader's strengths and challenges.

This paper re-evaluates the study of earlier iterations, with refinements, with a new population sample from both Australia and the United States.

Assumption testing – Normality and Suitability

Prior to any analyses being conducted, required assumptions were tested. Namely, the data was tested for its suitability for usage in factor analysis, and that the data was considered normally distributed. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.96, and the Bartlett's test was significant ($p < 0.001$). Thus, the data was considered suitable.

SECTION 1 – THE INTERPERSONAL FLEXIBILITY (IF) SCALE

General Scoring

Using the summation of the IF scores, an overall picture of quartiles is presented between 15 and 90, as shown in Table 1. The score highlights overall performance of a leader. A more detailed presentation of the mean and standard deviations (SD) of each item is presented in Table 2.

Table 1. Performance scores for the IF.

	Total	Items	Warmth	Understanding	Encouragement
Mean (SD)	71.05 (0.62)	4.74 (0.95)	24.00 (4.95)	24.15 (4.90)	23.29 (5.55)
Top 25%	83.72	5.58	27.97	28.58	28.29
Middle 50%	72.54	4.84	24.19	24.93	24.10
Bottom 25%	60.04	4.00	19.86	20.49	19.54

Table 2. Mean and standard distributions for the IF.

IF Items (N = 536)	Mean (SD)
Approachable	5.02 (1.07)
Cooperative	4.83 (1.08)
Tolerant	4.60 (1.16)
Adaptable	4.55 (1.14)
Flexible	4.60 (1.13)
Easy to understand	4.72 (1.11)
Behaves appropriately	4.99 (1.09)
Understands others	4.70 (1.14)
Believable	4.91 (1.10)
Gives helpful advice	4.83 (1.16)
Appreciates others	4.88 (1.12)
Comforting	4.52 (1.28)
Rewarding	4.51 (1.19)
Encouraging	4.74 (1.19)
Gives praise	4.55 (1.22)

SECTION 1 – THE INTERPERSONAL FLEXIBILITY (IF) SCALE

Model Testing

Model Specification

The IF is a first-order reflective construct with three reflective dimensions. These dimensions (warmth, understanding, and encouragement) include five items each based on fifteen behaviors that represent flexibility. Table 3 highlights this with more depth, including their item number in brackets.

Table 3. Behaviors that make up flexibility.

Warmth	Understanding	Encouragement
Tolerant (3)	Easy to understand (6)	Gives praise (15)
Cooperative (2)	Believable (9)	Rewarding (13)
Adaptable (4)	Understands others (8)	Encouraging (14)
Approachable (1)	Gives helpful advice (10)	Comforting (12)
Flexible (5)	Appropriate (7)	Appreciates others (11)

Confirmatory Factor Analysis (CFA)

As the scale was theory generated, structural equation modelling (SEM) techniques were used to evaluate the strength of the model; specifically using Confirmatory Factor Analysis. The evaluation adopted a maximum likelihood CFA on various models using the Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Standardised Root Mean Square Residual (SRMR), and Root Mean Square Error of Approximation (RMSEA) as key model fit indicators. The general rule of ensuring two of three indicator fit was applied[1].

The strongest model fit was found in the pre-specified theory-driven model. When the variables were considered independent, poorer model fit indices were identified. Likewise, the deletion of any one item did not enhance model fit. Table 4 provides an outline of individual item loading of the preferred model. The generally accepted loading is above 0.7, and all items demonstrated strong model fit.

[1]Bentler, P. M. (1990). Comparative fit indexes in structural models. Structural Equation Modeling, 7, 82-91.

SECTION 1 – THE INTERPERSONAL FLEXIBILITY (IF) SCALE

Table 4. Individual item loading of the IF.

Dimensions	Items	Loading
Warmth CR = 0.96 AVE = 0.82	Approachable	0.79
	Cooperative	0.91
	Tolerant	0.86
	Adaptable	0.84
	Flexible	0.86
Understanding CR = 0.93 AVE = 0.73	Easy to understand	0.79
	Behaves appropriately	0.80
	Understands others	0.91
	Believable	0.88
	Gives helpful advice	0.84
Encouragement CR = 0.93 AVE = 0.71	Appreciates others	0.90
	Comforting	0.88
	Rewarding	0.92
	Encouraging	0.94
	Gives praise	0.91

Composite reliability (CR), average variance explained (AVE)

SECTION 1 – THE INTERPERSONAL FLEXIBILITY (IF) SCALE

Reliability and Aggregation

Composite reliability (CR) of the recommended model is presented in Table 4 (above), along with the average variance explained (AVE). The cut-off for AVE > 0.5, and CR is 0.7. The three dimensions demonstrate strong internal reliability alongside variance in the individual responses that each dimension explains.

Table 5. IRR and IRA of the IF.

Interpersonal Flexibility	IRR	IRA
Encouragement	0.96	0.95
Warmth	0.92	0.92
Understanding	0.93	0.93
Interpersonal Flexibility	0.97	0.97

To assess the aggregation of items at the team level, inter-rater reliability (IRR) and inter-rater agreement (IRA) are calculated, using a two-way mixed method. All IF Scores achieved significance ($p < 0.001$). All of these indicate an almost perfect (> 0.80) level of agreement. Thus, all items may be aggregated to individual-level dimensions and also to a higher-order team level IF. Important to note is that data is considered more reliable at the team level, rather than the individual dimension level.

SECTION 2 THE VALUES THAT BUILD TRUST

The 16 items designed to measure interpersonal trust were closely examined to determine the underlying structure of these trust-building values. The items had been originally conceived as a single scale, comprised of four key value domains (each with two facets), Acceptance (respect and recognition), Openness (receptivity and disclosure), Congruence (honesty and straightforwardness) and Reliability (keeps commitments and seeks excellence).

An initial factor analysis showed that the set of 16 items unequivocally reflected two distinct constructs, Consistency and Communication. All Acceptance and Openness items loaded on the Communication factor; while all Congruence and Reliability items loaded on the Consistency factor. It was therefore decided to treat the eight Acceptance and Openness items as a Communication Scale, while the eight items of Congruence and Reliability were treated as a separate Consistency Scale.

Assumption testing – normality and suitability

Prior to any analyses being conducted, required assumptions were tested. Namely, the data was tested for its suitability for usage in factor analysis, and that the data was considered normally distributed. The Kaiser-Meyer-Olkin measure of sampling adequacy was 0.959, and the Bartlett's test was significant ($p < 0.001$). Thus, the data was considered suitable. Skewness (S) and Kurtosis (K) indicators highlighted that all items were normally distributed (see Table 8). Both S and K should be between -2 and +2 to demonstrate normality. All items passed the test.

General scoring

Using the summation of the VBT, an overall picture of quartiles is presented between 16 and 96, as shown in Table 6. A more detailed presentation of the mean and standard deviations (SD) of each item is presented in Table 7.

SECTION 2 THE VALUES THAT BUILD TRUST

Table 6. Performance scores for the VBT.

	Total	Items	Communication	Consistency
Mean (SD)	77.55 (15.06)	4.85 (0.94)	37.57 (8.16)	39.98 (7.59)
Upper Quartile	90.25	5.64	44.36	46.48
Middle Quartile	79.86	4.99	39.00	41.58
Lower Quartile	67.55	4.22	31.68	35.63

Table 7. Means and standard deviations for VBT.

Values that Build Trust n = 536	Mean (SD)
Shows that he or she cares about the other team members	4.83 (1.18)
Gives as much value to the other's skill as to his or her own	4.74 (1.39)
Is free with praise of other team members	4.68 (1.24)
Encourages others	4.75 (1.17)
Gives new ideas a fair hearing	4.73 (1.10)
Is willing to change opinion in the face of new evidence	4.63 (1.17)
Communicates openly with others	4.69 (1.19)
Keeps others appropriately informed	4.52 (1.24)
Confronts challenging situations when they arise	4.85 (1.19)
Is direct when communicating with others	4.76 (1.16)
Acts with integrity	5.22 (0.98)
Practices what they preach	4.94 (1.10)
Performs his or her responsibilities conscientiously	5.14 (1.06)
Stays with the job until it is done	5.04 (1.11)
Seeks excellence in his or her responsibilities	5.14 (1.06)
Makes an observable effort to improve his or her skills	4.89 (1.15)

SECTION 2 THE VALUES THAT BUILD TRUST

Model Specification

The VBT is a first-order reflective construct with two underlying reflective subscales (communication and consistency).

Confirmatory Factor Analysis (CFA)

As the scale was theory generated, structural equation modelling (SEM) techniques were used to evaluate the strength of the model; specifically using CFA. The evaluation adopted a maximum likelihood CFA on various models using the Comparative Fit Index (CFI), Tucker Lewis Index (TLI), Standardised Root Mean Square Residual (SRMR), and Root Mean Square Error of Approximation (RMSEA) as key model fit indicators. These four represent common methods for incremental and approximate fit. The general rule of ensuring two of three indicator fit was applied[2], in this case three of four is suitable.

The strongest model fit was found in the pre-specified theory-driven model. When the variables were considered independent, poorer model fit indices were identified. Likewise, the deletion of any one item did not enhance model fit. Table 8 provides an outline of individual item loading of the preferred model. The generally accepted loading is above 0.7, and all items demonstrated reasonably strong loadings.

[2]Bentler, P. M. (1990). Comparative fit indexes in structural models. Structural Equation Modeling, 7, 82-91.

SECTION 2 THE VALUES THAT BUILD TRUST

Table 8. Individual item loading of"Vj g"XDV0

Values that Build Trust n = 536	F1*	F2*
Shows that he or she cares about the other team members	0.83	
Gives as much value to the other's skill as to his or her own	0.86	
Is free with praise of other team members	0.80	
Encourages others	0.84	
Gives new ideas a fair hearing	0.82	
Is willing to change opinion in the face of new evidence	0.81	
Communicates openly with others	0.83	
Keeps others appropriately informed	0.80	
Confronts challenging situations when they arise		0.77
Is direct when communicating with others		0.74
Acts with integrity		0.82
Practices what they preach		0.87
Performs his or her responsibilities conscientiously		0.90
Stays with the job until it is done		0.88
Seeks excellence in his or her responsibilities		0.88
Makes an observable effort to improve his or her skills		0.85

*F1 (Communication), *F2 (Consistency)

Reliability

Composite reliability (CR) of the recommended model is 0.95 (communication) and 0.95 (consistency). The recommended cut-off for CR is 0.7. Thus, the model demonstrates very strong internal reliability. The Average Variance Extracted (AVE) of the recommended model is 0.68 (communication) and 0.71 (consistency). The cut-off is > 0.5, and as such the model demonstrates satisfactory theoretical coverage.

SECTION 3 THE RELATIONSHIPS BETWEEN VARIABLES

Inter-scale Correlations

In order to explore the relationships between subscales presented in the FTS, correlation statistics were calculated, and are presented in Table 9. To identify the best method for analysis, a Kolmogorov-Smirnov test was used to test for normality. Pearson's correlation coefficient was used to calculate correlations, considering the data was normally distributed.

Table 9. Inter-scale Correlations

	3	4	5	6	7	8	9
IF	1						
VBT	.903**	1					
Encouragement	.921**	.821**	1				
Warmth	.927**	.810**	.767**	1			
Understanding	.928**	.877**	.770**	.817**	1		
Communication	.929**	.960**	.878**	.839**	.858**	1	
Consistency	.794**	.954**	.686**	.706**	.818**	.831**	1

*** p < 0.001**

There is a very strong relationship between interpersonal flexibility (IF) and the values that build trust (VBT). Likewise, there are also considerable relationships between each of the sub-scales of interpersonal flexibility and the values that build trust. This means that when a person increases their interpersonal flexibility, their trust-building ability will also increase.

It also means that a person who focuses on more effective use of the behaviors that build trust, will increase his or her level of flexibility as perceived by others.

SECTION 3 THE RELATIONSHIPS BETWEEN VARIABLES

Discriminant Function Analysis

To further investigate the link between trust building ability and interpersonal flexibility, we examined the differences between ratings for the two highest levels of flexibility – Levels 3 and 4.

In the sample, there was a reasonably even spread of participants in all four levels of interpersonal flexibility (See Table 10). A discriminant function analysis was conducted to determine the values that build trust behaviors that best predict membership to Level 4, compared to Level 3.

Table 10. Distribution of participants by interpersonal flexibility

LEVEL	PERCENTAGE
Level 1	26.10
Level 2	24.30
Level 3	23.90
Level 4	25.70

An examination of the four levels of interpersonal flexibility indicated that 25.70 percent of employees in the data set (n = 536) were placed in the fourth level. 23.90 percent were classified as a level three. For individuals who were Level 4, this section asks whether particular scale items are able to predict group membership. In simpler terms, whether particular activities conducted by an individual have the propensity to increase observers' ratings of their leader's flexibility. Level 3 and 4 cut-off points were established in Table 2.

In order to test equal variance among the groups, the Box's M was used. Box's M (1166.92, $p < 0.001$) assumption was met, and equal variance is assumed. As such, the data was suitable for a discriminant function analysis. The Wilks' Lambda test (0.527, $p < 0.001$) was significant and as such, the predictor values will make predictions that are statistically significant in their accuracy. The cross-validated classification results demonstrate that the model accurately predicts those participants who sit within Level 3 and Level 4, 78.50 and 87.70 percent of the time, respectively.

SECTION 3 THE RELATIONSHIPS BETWEEN VARIABLES

Table 11. Discriminant Function Analysis of Level 3 and 4 Interpersonal Flexibility ratings.

Predictor Variable	Correlations of Predictors with Discriminant Function	Level 3 (n = 128) Mean (SD)	Level 4 (n = 138) Mean (SD)
Shows that he or she cares about the other team members	0.103*	5.41 (0.66)	5.87 (0.34)
Gives as much value to the other's skill as to his or her own	0.044	5.24 (0.72)	5.85 (0.38)
Is free with praise of other team members	0.109*	5.20 (0.75)	5.83 (0.39)
Encourages others	0.446**	5.25 (0.61)	5.89 (0.38)
Gives new ideas a fair hearing	0.183*	5.08 (0.68)	5.77 (0.53)
Is willing to change opinion in the face of new evidence	0.188*	5.04 (0.71)	5.67 (0.57)
Communicates openly with others	0.092	5.09 (0.80)	5.75 (0.54)
Keeps others appropriately informed	0.251**	4.88 (0.88)	5.68 (0.58)
Confronts challenging situations when they arise	0.010	5.13 (1.03)	5.73 (0.59)
Is direct when communicating with others	-0.075	5.00 (0.94)	5.65 (0.65)
Acts with integrity	0.212**	5.64 (0.53)	5.98 (0.15)
Practices what they preach	0.144*	5.27 (0.77)	5.84 (0.41)
Performs his or her responsibilities conscientiously	0.109*	5.58 (0.76)	5.93 (0.30)
Stays with the job until it is done	-0.108	5.38 (0.84)	5.84 (0.44)
Seeks excellence in his or her responsibilities	-0.213	5.45 (0.78)	5.89 (0.38)
Makes an observable effort to improve his or her skills	0.208**	5.23 (0.84)	5.88 (0.41)

***** Primary predictor | * Secondary predictor***

SUMMARY

This report was developed to re-examine the psychometric properties of the Flexibility and Trust Survey (FTS) along with its two scales: the Interpersonal Flexibility (IF) Scale and Values that Build Trust (VBT) Scale. IF has three subscales: warmth, understanding, and encouragement. VBT has two subscales: communication and consistency.

A variety of statistical analysis techniques were employed to test the underlying structure and internal consistency of the models on which this survey is based. Each model demonstrated a strong underlying structure, and all subscales demonstrated strong internal reliability.

Further analyses were conducted to examine inter-scale correlation. There were strong correlations between all the subscales demonstrating that as an individual's interpersonal flexibility increases, so too does their colleagues' perceived trust of them.

In order to better understand this relationship, a discriminant function analysis was conducted. The analysis demonstrated a number of trust-building behaviors that positively predict if an individual will be considered a level three (high-moderate endorsement) or a level four (broad endorsement) on the IF scale.

The primary predictors of Level 4 membership are: encouraging others, keeping other members of their team appropriately informed, acting with integrity and making an observable effort to improve their skills.

Of these, encouraging others was by far the strongest predictor which means that the best thing leaders can do to improve their interpersonal flexibility and trust building ability is to look for every opportunity they can find to encourage other team members.

In addition to this significant benefit of increased leadership effectiveness, there is also a payoff for the organization. We know from the research we have done into employee passion using the Employee Passion Survey, that the strongest predictor of an employee being passionate about both the work they do and the organization they work for, is to ensure that they get the recognition they deserve.

Encouraging employees and giving them recognition is a very simple thing to do, and it doesn't have to cost anything. Yet our research clearly shows that by ensuring your leaders do this, the payoff for the organization is more effective leaders and increased employee passion and engagement.

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