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About the RFI

The Resilience Factor Inventory®, or RFI, is a 60-item inventory that measures an individual's current level of resilience. The RFI taps 7 basic factors, or abilities, that have been established in more than 10 years of empirical research conducted at Adaptiv's research lab.

The Development of the RFI

Work on the RFI began early in 1997 in Adaptiv's research lab. The psychometric analyses, led by VP of Research & Development Dr. Andrew Shatté, followed the state-of-the-art procedure for developing an instrument.

Phase 1: Item assembly

- An exhaustive literature search was conducted on both the empirical and theoretical work on resilience.
- Three principle applications of resilience were identified in the literature . Overcoming major obstacles, Steering Through day-to-day adversities, and Bouncing Back from trauma. (This review was summarized in the book, "The Resilience Factor", Drs. Karen Reivich & Andrew Shatté, Random House, 2002.)
- 260 items were assembled that comprehensively tapped the construct of resilience, based on research application as well as dictionary and vernacular uses.
- Based on new research at the University of Pennsylvania into the non-remedial, positive aspects of resilience, 40 items were included that sampled ability to assess risk, take on challenges and opportunities, and develop strong relationships with others . the Reaching Out application of resilience.

Phase 2: Initial administration of the instrument

- Approximately 1,000 people were administered the 300-item inventory. This sample was derived from among Adaptiv's client list at the time, which included Nortel Networks, Ford Motor Company, Johnson & Johnson, Merrill Lynch, and Bethlehem Steel. The sample was designed to be diverse by race, gender, job description, level within organization, and industry.

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Phase 3: Exploratory, Principal Components Analysis

- Exploratory Factor Analyses were conducted to uncover the optimal solution for the data . that is, a solution which:
    - i) explained a significant portion of the variance in responses across the 300 items.
    - ii) did so with the minimal number of factors.
    - iii) uncovered factors where items tended to load solely on one factor.

- Orthogonal (varimax) rotation optimized iii) . a solution in which most items loaded only on one factor
- Both an eigenvalue test (eigenvalue >1) and a scree test were applied to determine the minimum number of factors which explained the maximum proportion of the variance
- Based on eigenvalue and scree tests, 7 factors emerged
- In order to create a workable inventory, the 60 items which loaded most strongly on the 7 factors were selected in for the final RFI
- This 60-item on 7-factor solution satisfied the variable-reduction mission of these exploratory analyses
- In spite of the significant streamlining of the instrument from 300 items, the 7-factor solution explained 41% of the variance in the original inventory

Phase 4: Confirmatory Factor Analyses

- A further 1,000 RFIs were collected and subjected to the analyses outlined above, as a confirmatory stage in the analyses
- The same 7 factors emerged as the optimal solution
- By both chi square & Goodness-of-Fit Index (GFI), the second factor analysis confirmed the factor structure of the first.

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Factor Structure

The 7 factors of the RFI are:

- Emotion Regulation

  The ability to control one's emotion in the face of adversity and to remain goal-focused

- Impulse Control

  The ability to control one's behavior in the face of adversity and remain goal-focused

- Causal Analysis

  The ability to accurately and comprehensively identify the causes of one's adversities and generate effective solutions

- Self-Efficacy

  One's sense of mastery over adversity, challenges, and opportunities

- Realistic Optimism

  A reality-based belief that the future is positive, due to one's causal analysis and self-efficacy skills

- Empathy

  The ability to read the verbal and non-verbal cues of others to estimate their mental state and emotion

- Reaching Out

  The ability to deepen relationships with others and to take on new challenges and opportunities

Reliability of the RFI

Test-retest Reliability:

The RFI is designed as a trait inventory. It has typically been used as a precursor to corporate training, either to alert participants to their resilience strengths and weaknesses, or to detect and target less resilient sections of an organization. We designed the RFI to be a long-term, training outcome measure, and therefore test-retest studies have not been relevant to our work.

Inter-item Reliability:

In constructing the RFI, our guiding principle was to create a construct and content valid instrument that could be completed quickly in line with today's corporate demands. For this reason, we designed items which tapped unique facets of the content space, with little item redundancy. The result is that inter-item correlations are

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modest. The following table displays average correlations between items which load on the factors listed:

Factor	Average Inter-item r's
Emotion Regulation	.35
Impulse Control	.16
Causal Analysis	.13
Self-Efficacy	.19
Optimism	.14
Empathy	.34
Reaching Out	.14

However, this decision was not made at the expense of the factor structure. It is clear that the factors within each item cohere, as the average item-factor correlations presented in the next table indicate:

Factor	Average Item-factor r's
Emotion Regulation	.62
Impulse Control	.45
Causal Analysis	.49
Self-Efficacy	.49
Optimism	.53
Empathy	.66
Reaching Out	.44

Criterion Validity of the RFI

Research has established that the RFI does measure what it purports to measure . the individuals resilience as it predicts performance. The *criterion validity* of the RFI has been demonstrated in two ways . in tests of the *concurrent validity* and *predictive validity* of the measure.

Concurrent Validity of the RFI

The psychometricians who designed the RFI have had many years experience in the training, coaching, and consulting industries. Their experience within the sales arena clearly indicated the following hypotheses:

i. Resilience is a critical competency for frontline salespeople.

ii. For cold-calling sales, the resilience factor of Empathy, which is important in functions with long-term relationship will be less focal.

iii. The resilience factors of Emotion Regulation and Impulse Control will be essential to successfully negotiate the cold call or cold visit.

iv. The resilience factor of Causal Analysis will be core to correct interpretation of feedback from potential clients, in order to adjust their pitch . delineating those aspects of their performance over which they can exert control.

v. Self Efficacy and Optimism will be important to remain perseverant through the inevitable rejection of the sales environment.

vi. Since sales managers are typically chosen from among the best salespeople, within any organization at any one time, their sales managers will show higher levels of resilience than the salespeople they manage on the 6 of the 7 factors specified above.

Case Study – Verizon sales

This study in the concurrent validity of the RFI was conducted with a Verizon Information Services yellow pages advertising sales group. The RFI was administered to a team of frontline salespeople and the managers to whom they reported. The scores on each factor as well as an average across all 7 factors (RQ) are provided in the figure below.
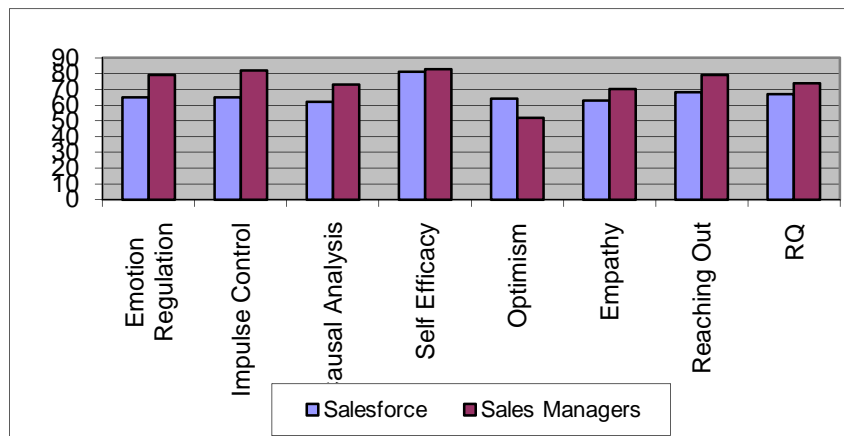
The most stringent test of the statistical significance of these group differences is through Multivariate Analysis of Variance (MANOVA), an inferential statistic designed to handle multiple dependant variables (multiple t-tests could be run to assess the

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differences between the groups on each factor but this would inflate experiment-wise error rate).

Results of MANOVA analyses are as follows:

Emotion Regulation: Sales managers are significantly higher than salespeople on this factor

$$F_{(1,25)} = 7.14, p=.013.$$

Impulse Control :   Sales managers are significantly higher than salespeople on this factor

$$F_{(1,25)} = 12.17, p=.002$$

Causal Analysis: Sales managers are significantly higher than salespeople on this factor

$$F_{(1,25)} = 12.17, p=.002$$

Self Efficacy: No statistically significant difference

Optimism: No statistically significant difference

Empathy: No statistically significant difference

Reaching Out: Sales managers are significantly higher than salespeople on this factor

$$F_{(1,25)} = 13.39, p=.001$$

RQ: Sales managers are significantly higher than salespeople on this factor

$$F_{(1,25)} = 7.17, p=.013$$

This study demonstrates the Criterion Validity of the RFI . that the RFI can delineate two samples that, *a priori*, are hypothesized to differ on the factors, or abilities of resilience.

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Predictive Validity of the RFI

In this test of predictive validity, 270 new hires to a financial services company (the client wishes to remain anonymous) with more than 7,000 investment representatives and offices throughout North America, were administered the RFI. It was an optimal test of the predictive validity of the instrument, since the subjects were new to sales, new to the investment industry, and were starting up new branches on their own (that is, not inheriting an existing book of business).

Their performance was monitored across the first 4 months on the job.

The hypotheses were:

i. The more resilient the salesperson at Time 1, the more customers they would generate through cold calling and/or cold door knocking after 4 months.

ii. The more resilient the salesperson at Time 1, the more $ sales they would make by the 4-month mark.

Tests of the hypotheses:

i. Their Resilience Quotient (RQ), an average score across the 7 Factors, predicted the number of customers they generated:
($r = .43$, significant at $p=.041$)

ii. Resilience Quotient predicted the dollars in revenue they generated: ($r = .44$, significant at $p=.033$)

Additional analyses:

Median splits were formed on the RQ score. By the 4-month point, the following results were found for the mean dollar value of the book of business the agents had generated:

Below the median on RQ: $ 1,301,781
Above the median on RQ: $ 1,663,364
% advantage: 27.78%

Further, the top quartile on the RQ accounted for 42% of the assets under management.

T-test analysis of the performance of the top quartile relative to the other agents revealed significantly more assets under management ($p=.02$)