Using tipping points of emotional intelligence and cognitive competencies to predict financial performance of leaders

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Competencies have been shown to differentiate outstanding managers and leaders from their less effective counterparts. Some of the competencies related to effectiveness reflect cognitive intelligence, but many of them are behavioral manifestations of emotional intelligence. Meanwhile, the performance measures used have often been an approximation of effectiveness. A study of leaders in a multi-national, consulting company shows that the frequency with which they demonstrate a variety of competencies, as seen by others, predicts financial performance in the seven quarters following the competency assessment. This, like other studies only clarify which competencies are *necessary* for outstanding performance. Borrowing from complexity theory, a tipping point analysis allows examination of *how much of the competency is sufficient* for outstanding performance. Using the tipping point analysis shows an even greater impact of competencies on the financial performance measures of the leaders in the study. The emotional intelligence competencies constituted most (i.e., 13/14) of the validated competencies predicting financial performance.

Análisis de los puntos críticos de inteligencia emocional y competencias cognitivas para predecir el rendimiento financiero de líderes. Las competencias han demostrado capacidad para diferenciar entre los dirigentes y líderes excepcionales y sus iguales menos efectivos. Algunas de las competencias relacionadas con la efectividad reflejan inteligencia cognitiva, pero muchas otras son manifestaciones comportamentales de inteligencia emocional. A su vez, las medidas de ejecución utilizadas constituyen frecuentemente una aproximación a la efectividad. El estudio de líderes en una compañía consultora multinacional indica que la frecuencia con la que los líderes muestran una variedad de competencias, tal como son percibidas por los compañeros, predice su rendimiento financiero en los siete trimestres siguientes a dicha evaluación. Esto, como en otros estudios, sólo clarifica qué competencias son necesarias para el rendimiento excepcional. Desde una teoría más compleja, el análisis de puntos críticos permite examinar *cuánto de una competencia es suficiente* para el rendimiento excepcional. En el estudio, utilizando el análisis de puntos críticos, se observa un impacto incluso mayor de las competencias sobre las medidas de rendimiento financiero de los líderes. Las competencias de inteligencia emocional constituyeron la mayoría (esto es, 13 de 14) de las competencias validadas para predecir el rendimiento financiero.

The assessment of emotional intelligence competencies began as curiosity about talent (McClelland, Baldwin, Bronfenbrenner, & Strodbeck, 1958). In the early 1970's, this line of research focused on competencies (McClelland, 1973). By the late 1970's, as the research was quickly adapted as creating useful insight within practitioner communities, the «competency» label spread. Competencies, in this line of research, were defined as «underlying characteristics of the person that led to or caused effective or superior performance» (Boyatzis, 1982).

Emotional intelligence (i.e., EI) is a convenient phrase with which to focus attention on the underlying emotional components of human talent. Early psychologists explored the concept of «social intelligence» (Thorndike in the 20's and 30's, cf. Goleman, 1995) as a single concept. Recent psychologists have described it in terms of multiple capabilities (Bar-On, 1992, 1997, 2006; Goleman, 1998; Saarni, 1988). Gardner (1983) conceptualized this arena as constituting intrapersonal and interpersonal intelligence- two of his seven intelligences; the others include bodily-kinesthetic, aesthetic, musical, logical-mathematical, and spatial. Salovey and Mayer (1990) first used the expression «emotional intelligence» in academic journals and described it in terms of four domains: knowing and handling one's own and others' emotions. Other conceptualizations have used labels such as «practical intelligence» and «successful intelligence» (Sternberg, 1996), which often blend the capabilities described by other psychologists with cognitive abilities and anchor the concepts around the consequence of the person's behavior, notably success or effectiveness.

To be considered an intelligence, EI should be: (1) related to differentiated neural circuitry and endocrine systems; (2) related to

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a set of alternate, behavioral manifestations (allowing different expression in different settings); (3) related to life and job outcomes; and (4) sufficiently different from other personality constructs that the concept adds value to understanding the human personality and behavior. Meanwhile, the measures of the concept, as a psychological construct, should satisfy the basic criteria for a sound measure, that is show convergent and discriminant validity (Campbell & Fiske, 1959). This set of criteria is different than the Mayer, Salovey and Caruso (1999) three standards for an intelligence (see also Brackett & Salovey, 2006). For a discussion of these differences, the reader is referred to Boyatzis and Sala (2004).

The integrated concept of emotional intelligence offers more than a convenient framework for describing human dispositions— it offers a theoretical structure for the organization of personality and linking it to a theory of action and job performance. Goleman (1998) defined an «emotional competence» as a «learned capability based on emotional intelligence which results in outstanding performance at work.» In other words, if a competency is an «underlying characteristic of the person that leads to or causes effective or superior performance» (Boyatzis, 1982), then an *emotional intelligence competency is an ability to recognize, understand, and use emotional information about oneself or others that leads to or causes effective or superior performance.*

A simpler definition of emotional intelligence may be that *emotional intelligence is the intelligent use of one's emotions.* This definition can be elaborated to be, «How people handle themselves and their relationships» (Goleman, Boyatzis, & McKee, 2002). The definition can be further expanded to say that emotional intelligence is a set of competencies, or abilities, in how a person: (a) is aware of himself/herself; (b) is able to manage his/her own emotions; (c) is aware of others and their emotions; and (d) is able to deal with and manage his/her relationships using emotional awareness.

Challenges of competency assessment

Competency assessment asks the basic question, «What are the behavioral characteristics or abilities that are needed for effectiveness in specific jobs, roles, or occupations?» Competency assessment and competency based systems have become standard practice in human resource management and development while being the focus of research for the past thirty-five years (McClelland, 1973; Boyatzis, 1982; Spencer & Spencer, 1993; Goleman, 1998; McClelland, 1998; Cherniss & Goleman, 2001; Goleman, Boyatzis, & McKee, 2002; Druskat, Mount, & Sala, 2005). Unfortunately, most competency research has not been published because companies did not want their findings made public, considering them a competitive advantage. Another reason for the lack of publication is the dynamics of incentives and work priorities in the consultancies or internal departments doing most of this work. This lack of published findings has been the major complaint of the detractors and critics of this work as competencies, in general (Barrett & Depinet, 1991), or specifically emotional intelligence (Landy, 2004).

When such studies have been published, there have been two major limitations to confidence in the results: (1) problems in assessment of the competencies (i.e., the measurement methods used); and (2) definition and measurement of performance. Often, the assessment of a competency came from attitude surveys, focus groups, or expert panels. These sources, while face valid, tend to generate lists of socially desired characteristics which may or may not have relevance to performance because they are embedded in the organizations' cultures (Boyatzis, 1982). Direct observation is costly and often interferes with the appearance, or not, of the competencies. Problems of reliability have plagued live observation of simulations in assessment centers. Attempts to record actual behavior through audiotapes and videotapes have helped allow researchers to examine the raw information repeatedly and with trained observers showing high inter-rater reliability. Audiotaping critical incident interviews became a useful way to capture a person's recall of actual actions and then make them available for reliable coding at a later time (Spencer & Spencer, 1993; Boyatzis, Cowen, & Kolb, 1995; Boyatzis, Stubbs, & Taylor, 2002).

The popularity of the 360^0 questionnaire assessment is, in part, due to the face valid way it collects views from many people. It collects the perspectives of those above, below, and at the side of the person being assessed. Research on 360 assessment, called multi-source, feedback assessment (MSFA) has focused on its internal reliability, variations among the sources of the views, or prediction of job outcomes. It is assumed to be a valid parameter for assessing the degree to which a person actually shows the desired behaviors (Taylor & Boyatzis, in review).

MSFA has become a credible form of recognition and validation of a person's behavioral habits or demonstrated skills and competencies because it has added a dimension to the traditional «boss» driven accolades and rewards. Peer assessment is important in many fields. For example, in professional journals, blind peer review is considered the most prestigious and rigorous form of review. Research on prediction of behavior, skills, and competencies, has long established the differential and greater validity of peer assessment over boss assessment and subordinate assessments, and all of them as greater than the validity of self-assessment (Lewin & Zwany, 1976). The acceptance of 360^0 assessment has also placed subordinate feedback and input to the review process as important. Full 360 assessment is still less popular in hierarchal cultures, such as Italian organizations. In such cultures, where power distance is great (Hofstede, 1980), managers are less likely to solicit subordinate feedback or even value it.

The question asked from analysis of such data has for decades been which competencies are necessary for effective or outstanding performance. But this gives us only one view of the link between competencies and performance. Applying a concept from complexity theory, that of tipping points, or trigger points allows the question of how much of the competency must be demonstrated to be sufficient for outstanding performance (Gladwell, 2000; McClelland, 1998). For example, a person may use Empathy once a week, once a month, or once a day with others around them. But how often should they use it to be outstanding? The tipping point is, in this case, related to the situations. The frequency of use of Empathy for a lathe operator in a large furniture company will be far less than for a salesperson or the leader of the company.

The second major limitation in published competency studies has been confusion about the dependent variable, effectiveness. Often researchers used promotion or performance appraisal ratings as a measure of performance (Howard & Bray, 1988). Luthans, Hodgetts and Rosenkrantz (1988) made a compelling case for how these are measures of success and are different than measures of effectiveness. That is, success is performance as viewed by upper

levels of management and within the narrow definitions of their purpose and scope. Effectiveness, in their view, is a measure of performance when more comprehensive views are taken into account. It could be said that a longer time perspective would help increase the validity of effectiveness measures over success measures. In some studies, like Boyatzis (1982), Williams (2004) and McClelland (1998), performance effectiveness has taken the form of nominations from bosses, peers and subordinates, or a set of nominations in concert with other output measures, such as ratings of climate, customer satisfaction, or output measures.

The ultimate consequence of effectiveness should be some form of observable output, like financial measures of revenue or profit. Output measures have been useful for individual contribution jobs, such as sales or general managers where profit and loss of their organizational unit can be used as the criterion variable. Again, there have been very few studies showing the direct link of competencies demonstrated and financial impact on the firm (McClelland, 1973, 1998).

To address some of these limitations, the present study was conceived. A human resource development project at a large, multi-national professional services and consulting firm presented the opportunity to examine the competencies and financial impact of senior partners, who were leaders of the firm. Financial performance of the client teams and units being led by senior partners could be assessed following a comprehensive assessment of the partners' competencies. It would allow a study of the impact of competencies on financial measures of these corporate leaders, and provide an opportunity to apply a tipping point analysis. The hypotheses were that: (1) demonstrated EI and cognitive competencies would predict financial performance of leaders in the company; and (2) a tipping point analysis would reveal a better prediction of financial performance than other ways of estimating the impact of the competencies.

Method

The design was a longitudinal study.

The sample

A sample was selected from the several thousand partners in the company. Only those were included who were: (a) in operating business units in the United States; and (b) who were not in the headquarters office; and (c) not in staff functions. Also excluded were the top seven partners in charge of the organization or one of its divisions. The subjects also had to be partners in the company for at least two years.

From this sample of about 1,300 partners, a sub-sample of 32 outstanding partners was identified using nominations from: (1) new partners (i.e., their subordinates' views); (2) other partners (i.e., their peers' views); and the office of the Chairman (i.e., their boss's views). The question asked was to identify on a blank sheet of paper those partners who had «distinguished themselves as exceptional in managing client and internal relationships, in growing business, and in managing a part of the practice or a business area». Those partners appearing on at least two of the following lists were identified as «superior or outstanding» partners: the responses from their boss's; multiple listing from subordinates' view; and multiple listing from peers' view.

To identify the sub-sample of average performing partners, the remaining partners who were not on any of the lists from any of the others (i.e., did not receive any nominations from the boss' nor subordinates views) and had no more than one nomination from their peers were identified. It was possible for people to nominate themselves in the peer data collection. Then a random sample of 32 was chosen from the approximately 800 or so possible partners remaining in the pool to provide a comparison sample of similar size.

The sample had been with the firm an average of 19 years, ten of which they were partners. This meant they were senior partners of the firm. There were 13% women or minorities in each sub-sample (i.e., both in the «superior» subsample and the «average» subsample). One division (or strategic business unit) was more represented in the sample than other divisions. It was the largest division in terms of numbers of partners as well as revenues, and was comparably represented in both samples. From the original sample, seven partners were unavailable for interviewing, two had left the firm by the time of scheduling the interviews, and two were dropped from the sample because their interviews were not usable due to technical difficulties.

Background to this study

In a previous study, critical incident interviews were conducted with these two samples. A sub-sample of four outstanding and four average partners' interviews were analyzed using thematic analysis (Boyatzis, 1998). The resulting competencies and their behavioral indicators formed the basis for the preliminary competency model of the population studied. The remaining interviews were randomly coded, blind to sub-sample, to test the initial validity of the competencies.

At the same time, a survey of desired competencies of partners was compiled from focus groups and interviews. The objective of this component was to determine the cultural perceptions as to what competencies were important to performance. The survey was sent to 204 partners, with 133 returning the survey indicating which of the competencies on the list were necessary for effective performance and which distinguished those who were superior performers.

The results of both studies were integrated into a competency model. A 360 questionnaire was developed, pilot tested, and then sent to the original sample of fifty-three partners, their boss's, five each of their subordinates, and five each of their peers. Although this questionnaire went through rigorous assessment as a test in several large samples, the company considered the specific test their intellectual property. As a result, they were not wiling to divulge any of the psychometric properties or item wording to the public. For comparison, it can be said that the test items and reliabilities were consistent with many such 360^0 competency assessment questionnaires (see Boyatzis, Goleman, & Rhee, 2000; or Boyatzis & Sala, 2004, for illustrations of reliabilities and validity of similar questionnaires). Forty-three of these partners (i.e., 81%) completed the questionnaires and had sufficient «others» complete them to be included in this analysis. Each competency scale had two to six items reflecting the different behavioral manifestations of the competencies as appearing in the interviews. Scale scores were calculated as average item responses. Respondents were asked to describe themselves or another in terms of each behavior (i.e., each item) as demonstrated: frequently and consistently, occasionally, or seldom/never. It was, therefore, a three point scale. The respondent also had the choice of marking the item «n» indicating that the

respondent did not know or had never had the opportunity to observe the person in appropriate situations. Such item responses were not incorporated into the scale score.

The sample for this study consisted of forty three partners: twenty-two originally identified as superior or outstanding and twenty-one originally identified as average. Four of the «average» partners had retired by the time of data collection, and three partners from each group did not provide a complete set of questionnaires. A competency score, called «Others' Views», was calculated as the average scale score from each available «other» source; in other words, it was the average of the boss's views, the average of the subordinates' views, and the average of the peers' views.

The following competencies were theoretically grouped into the following clusters:

(1) Self-motivation cluster: Initiative, Planning, Achievement Orientation, Self-confidence;

(2) Self-regulation cluster: Taking a Risky Stand, Self-control, Adaptability, Conscientiousness, Values Learning;

(3) People Management cluster: Oral Presentations, Networking, Leadership, Coaching, Empathy, Influence, Facilitates Learning, and Distinguishes the Firm's Reputation and Resources; and

(4) Cognitive Cluster: Pattern Recognition, Systems Thinking, and Knowledge. The first three clusters listed can be considered components of Emotional Intelligence (i.e., EI) competencies. Additional detail on the behavioral indicators and alternate manifestations of each of these competencies, including the cognitive ones can be found in Boyatzis (1982), Spencer and Spencer (1993), Goleman (1998), Boyatzis, Goleman and Rhee (2000) and Goleman, Boyatzis and McKee (2002), as well as documentation on their relationship to performance.

The financial impact measure

To ascertain the financial impact of these senior partners on the firm, two financial measures were used: revenue from their clients (i.e., amount invoiced to clients less travel and related expenses) and gross margin (contribution to the firm not including cost of services delivered nor a full overhead allocation). Since each account is the responsibility of a specific senior partner as account manager, the tracking was possible through their management information system. An account manager is the partner managing the relationship to the client and the firm's resources to develop new business, deliver business, insure quality, while managing people and resources of the firm. The financial data was recorded by quarter.

For those senior partners in the sample, the financial measures were collected on each client for seven quarters following the 360 competency assessment. The revenue was summed across clients of each senior partner for each quarter. The gross margins were averaged. Each of the performance measures were recalculated to reflect annualized performance taking into account the quarters in which they worked or in which they worked for 2/3rds of more of the quarter.

The average annualized revenue for a senior partner in the sample was $2,438,000 and the average gross margin was 57%. These two measures were significantly correlated (r= .421, p<.05, n= 43).

Results

Two competencies were significantly correlated with the financial performance measure of Account Revenue: Facilitates Learning and Values Learning. Ten competencies were significantly correlated with Account Gross Margin: Taking a Risky Stand, Planning, Self-confidence, Leadership, Coaching, Facilitates Learning, Systems Thinking, Empathy, Adaptability, and Values Learning. This is shown in table 1. From this approach to testing the validity of the competencies, we see that ten of the twenty could be considered valid.

Tipping point analysis

To further test the sufficiency of competencies for outstanding financial performance, a tipping point analysis was employed. First suggested by McClelland (1998), it requires a visual examination of the distribution of the data. Such an examination typically reveals break points in the data. Upon analyzing each competency score (i.e., others' views from the averaging of the 360^0 results), four break points were most often visible in the competency data, so the values of the competencies were assigned respective values of 1-4, to reflect the clusters of scores. The distribution of scores for the Average and Superior performers (identified in this study through separate nominations procedures) and to examine where the distribution lines cross, is shown in Figure 1 for two of the competencies. A tipping point was identified for each competency and used in the tipping point

Table 1		
Correlation of competencies shown, as seen by others and financial performance		
Competency	**Account Mgr. Revenue***	**Account Mgr. Gross Margin**
Initiative	.192	.145
Planning	.206	.385*
Achievement orientation	.103	.079
Self-confidence	.087	.310*
Taking a Risky stand	.238	.359*
Self-control	.188	.172
Adaptability	.050	.318*
Conscientiousness	.192	.145
Values learning	.324*	.273*
Oral presentations	-.011	.140
Networking	.164	.127
Leadership	.191	.408*
Coaching	.091	.370*
Empathy	.249	.383*
Influence	-.075	.059
Facilitates learning	.337*	.494*
Distinguishing the firm's reputation	.095	.102
Pattern recognition	-.087	.128
Systems thinking	.189	.345*
Knowledge	.207	.111

* Spearman's rho correlations are reported with 1-tailed levels of significance: * p<.05; ** p<.01;***p<.001; n= 43.

analyses. They were restated in terms of the original scale scores for convenience of the reader and are shown in table 2.
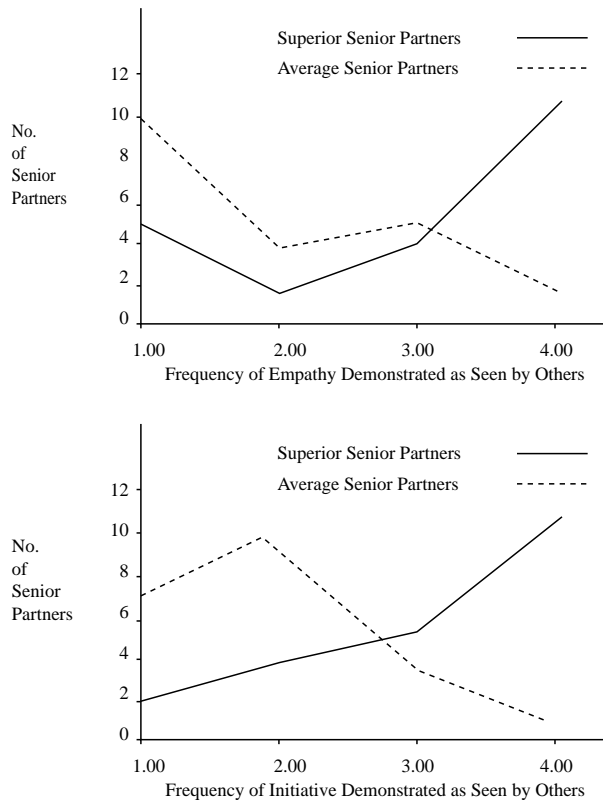

Figure 1. *Two illustrations of graphically determining the tipping point*

Financial performance of senior partners above and below the tipping point is shown in tables 3 and 4. The tipping point distinguished significantly or near significantly higher account revenue for eight of the competencies, as shown in table 3. They were: Taking a Risky Stand, Planning, Self-control, Coaching, Facilitates Learning, Achievement Orientation, Conscientiousness and Values learning. The tipping point distinguished significantly or near significantly greater account gross margin for eleven competencies, as shown in table 4. They were: Planning, Networking, Self-Confidence, Leadership, Coaching, Facilitates Learning, System thinking, Empathy, Achievement Orientation, Adaptability and Values Learning. From this approach to testing the validity of the competencies, we see that fourteen of the twenty could be considered valid.

To determine if a less elaborate analysis would yield comparable results to the tipping point analysis, a median split was made on each competency. Financial performance of senior partners above and below the median is shown in tables 5 and 6. The median distinguished significantly or near significantly higher account revenue for four of the competencies, as shown in Table 5. They were: Taking a Risky Stand, Facilitates Learning, Conscientiousness, and Values learning. The median distinguished significantly or near significantly greater account gross margin for ten competencies, as shown in table 6. They were: Taking a Risky Stand, Planning, Self-Confidence, Leadership, Coaching, Facilitates Learning, System Thinking, Empathy, Adaptability and Values Learning. From this approach to testing the validity of the competencies, we see that eleven of the twenty could be considered valid.

Table 2
Tipping points by competency

Competency	Tipping point*
Initiative	2.44
Planning	2.50
Achievement orientation	2.72
Self-confidence	2.50
Taking a Risky stand	2.89
Self-control	2.75
Adaptability	2.81
Conscientiousness	2.73
Values learning	2.85
Oral presentations	2.78
Networking	2.65
Leadership	2.70
Coaching	2.22
Empathy	2.78
Influence	2.41
Facilitates learning	2.83
Dist. firm's reputation	2.71
Pattern recognition	2.50
Systems thinking	2.83
Knowledge	2.82

* On a scale of 1-3: 3= consistently and frequently; 2= occasionally; 1= rarely or never.

Table 3
Account revenue above and below the tipping point by competency

| Competency | Below TP | | Above TP | | |
	n	Revenue	n	Revenue	z
Initiative	23	$2,164,174	20	$2,753,850	-.58
Planning	16	1,840,375	27	2,792,852	-1.38+
Achievement orientation	10	1,522,900	33	2,715,879	-1.47+
Self-confidence	19	2,034,368	24	2,758,333	-.61
Taking a Risky stand	21	2,101,571	22	2,760,000	-1.46+
Self-control	12	1,506,833	31	2,799,065	-2.49**
Adaptability	23	2,491,826	20	2,377,050	-.20
Conscientiousness	16	1,833,813	27	2,797,000	-2.01*
Values learning	24	2,064,208	19	2,911,158	-1.64*
Oral pesentations	25	2,588,200	18	2,230,444	-.69
Networking	19	2,092,053	24	2,712,667	-.76
Leadership	21	1,981,762	22	2,874,364	-.95
Coaching	12	1,933,333	31	2,633,968	-1.30+
Empathy	30	2,376,867	13	2,580,539	-.69
Influence	10	2,841,000	33	2,316,454	-.69
Facilitates learning	25	1,772,280	18	3,364,667	-1.95*
Dist. firm's reputation	17	2,067,824	26	2,680,769	-.47
Pattern recognition	26	2,469,962	17	2,390,235	-.05
Systems thinking	27	2,310,185	16	2,654,875	-.98
Knowledge	19	2,126,632	24	2,685,292	-1.08

One-tailed Significance levels: + p<.10; * p<.05; ** p<.01; *** p<.001

Table 4
Account gross margin above and below the tipping point by competency

		Below TP		Above TP	
Competency	n	Margin	n	Margin	z
Initiative	23	53%	20	61%	-.96
Planning	16	48%	27	62%	-2.68**
Achievement orientation	10	47%	33	60%	-1.28+
Self-confidence	19	54%	24	59%	-1.34+
Taking a Risky stand	21	52%	22	61%	-1.17
Self-control	12	49%	31	60%	-.80
Adaptability	23	52%	20	63%	-1.98*
Conscientiousness	16	53%	27	59%	-1.22
Values learning	24	52%	19	62%	-1.63*
Oral presentations	25	55%	18	60%	-.28
Networking	19	50%	24	62%	-1.27+
Leadership	21	52%	22	62%	-1.85*
Coaching	12	41%	31	63%	-2.58**
Empathy	30	54%	13	63%	-1.55+
Influence	10	50%	33	59%	-.53
Facilitates learning	25	51%	18	65%	-3.46***
Dist. Firm's reputation	17	52%	26	60%	-.98
Pattern recognition	26	54%	17	61%	-.82
Systems thinking	27	52%	16	64%	-2.59**
Knowledge	19	54%	24	59%	-.49

One-tailed Significance levels: + p<.10; * p<.05; ** p<.01; *** p<.001

Table 6
Account gross margin above and below the median by competency

		Below median		Above median	
Competency	n	Margin	n	Margin	z
Initiative	20	53%	20	61%	-.99
Planning	22	53%	18	59%	-1.65*
Achievement orientation	18	56%	22	59%	-.15
Self-confidence	19	54%	18	60%	-1.09+
Taking a Risky stand	20	51%	23	62%	-1.57+
Self-control	22	53%	20	61%	-1.05
Adaptability	21	52%	20	63%	-1.65*
Conscientiousness	16	53%	22	59%	-1.23
Values learning	18	49%	22	62%	-2.07*
Oral presentations	21	51%	22	62%	-1.25
Networking	20	51%	21	61%	-.77
Leadership	19	51%	22	61%	-1.77*
Coaching	20	50%	21	621%	-2.05*
Empathy	20	51%	22	62%	-2.00*
Influence	20	53%	14	60%	-.54
Facilitates learning	20	49%	21	64%	-3.23***
Dist. Firm's reputation	22	54%	20	60%	-.67
Pattern recognition	20	53%	21	58%	-.39
Systems thinking	21	49%	21	64%	-2.19**
Knowledge	20	55%	22	58%	-.43

One-tailed Significance levels: + p<.10; * p<.05; ** p<.01; *** p<.001

Table 5
Account revenue above and below the median point by competency

		Below median		Above median	
Competency	n	Revenue	n	Revenue	z
Initiative	20	$2,206,900	20	$2,753,850	-.57
Planning	22	2,078,182	18	3,046,667	-.98
Achievement orientation	18	2,035,111	22	2,547,636	-.71
Self-confidence	19	2,034,368	18	2,584,222	-.03
Taking a Risky stand	20	2,065,150	23	2,763,913	-1.63*
Self-control	22	2,511,909	20	2,460,950	-.50
Adaptability	21	2,562,762	20	2,377,050	-.29
Conscientiousness	16	1,833,813	22	2,657,909	-1.74*
Values learning	18	1,818,556	22	2,533,546	-2.07*
Oral presentations	21	2,725,095	22	2,164,818	-.83
Networking	20	2,429,600	21	2,531,000	-.43
Leadership	19	1,818,579	22	2,874,364	-1.23
Coaching	20	2,225,500	21	2,293,000	-.16
Empathy	20	2,230,600	22	2,641,409	-1.10
Influence	20	2,437,600	14	2,486,500	-.07
Facilitates learning	20	1,668,550	21	3,224,095	-3.23***
Dist. Firm's reputation	22	2,120,318	20	2,857,850	-.50
Pattern recognition	20	2,795,600	21	2,190,952	-.78
Systems thinking	21	2,336,619	21	2,442,524	-.84
Knowledge	20	2,329,050	22	2,536,500	-.55

One-tailed Significance levels: + p<.10; * p<.05; ** p<.01; *** p<.001

To carry the tipping analysis to another level, the number of competencies sufficient to tip someone into being outstanding was determined by cluster using the same approach to the analysis as done with each of the competencies separately. It was determined that the tipping point for the clusters were: three of the four competencies in the Self-management cluster; two of the five competencies in the Self-regulation cluster; four of the eight competencies in the People management cluster; and two of the three competencies in the Cognitive cluster.

As shown in table 7, when senior partners showed the number of competencies above the tipping point, account revenue was significantly or near significantly higher for the Self-regulation and People Management clusters of competencies. As shown in table 8, when senior partners showed the number of competencies above the tipping point, account gross margin was significantly higher for each of the four clusters. The two financial performance

Table 7
Account revenue above and below the tipping point by cluster

		Below TP		Above TP	
Cluster	n	Revenue	n	Revenue	z
Self-motivation	19	$1,802,737	24	$2,941,708	-1.13
Self-regulation	11	895,546	32	2,968,813	-3.29***
People management	16	1,796,688	27	2,818,741	-1.46+
Cognitive	12	2,163,917	31	2,544,710	-.79

One-tailed Significance levels: + p<.10; * p<.05; ** p<.01; *** p<.001

measures were combined to generate a visual representation of these differences, as shown in figure 2.

To create a visual comparison of these results for those above and below the tipping points, the differences in account gross profit (i.e., the product of account revenue and gross margin) were calculated. Annualized profit contributed by senior partners above and below the tipping points of competencies and within clusters is shown in figure 2.

Discussion

Competencies predicted financial performance of leaders in this large, consulting company. This study fills two gaps previously noted in published competency research. First, a longitudinal study was used with direct, financial performances measures as the dependent variable. Second, the measurement of the competencies were made through the view of others as assessed through a 360⁰ assessment.

In particular, the competencies that resulted in greater account revenue and/or account gross margin were, organized within their clusters:

(1) Self-motivation cluster: Planning, Achievement Orientation, Self-confidence;
(2) Self-regulation cluster: Taking a Risky Stand, Self-control, Adaptability, Conscientiousness, Values Learning;
(3) People management cluster: Networking, Leadership, Coaching, Empathy, Facilitates Learning; and
(4) Cognitive cluster: Systems Thinking.

Moving beyond the basic validation study, the tipping point analysis produced better prediction of financial performance than correlations, or a mere median split. This suggests that contextual understanding in the frequency of use of competencies becomes an important addition to the research on what produces effectiveness.

The tipping points have been applied to analyzing behavior of groups, in the stock market or in social movements and riots, sometimes without actually using the term but using the concept (Hatfield et al., 1994). This was the second attempt to use it to understand behavior of an individual, following McClelland's 1998 study. In this sense, it is a replication of the utility of this concept in predicting performance.

It is also important to note that *both* cognitive and emotional intelligence competencies predicted performance. Of course, it is also important to note that 93% (i.e., 13/14) of the competencies predicting performance were from the emotional intelligence clusters.

Limitations of the study

The largest limitation of the study was the small sample size. This precludes multivariate analyses and structural equation modeling that would help to account for inter-correlation among the competencies, as well as the measures of financial performance. Future research should be designed to include larger sample sizes.

A second limitation of the study is that the sample was not selected as a normal distribution of financial performance. It was disproportionately selected from outstanding performers. Of the approximately 3,000 partners of this firm worldwide, only about 1,300 were in the United States and not involved in staff, support, headquarters, or the very top management functions. Of the approximately 1,300 eligible partners, only 32 were identified as outstanding using the multiple nomination criteria (i.e., about 2.5%). Then the average partner sample was selected randomly from the 800 or so partners who were not nominated by anyone (i.e., a 4% sample). Future research should incorporate a normal distribution of financial performance.

Concluding thought

Competency research will drive new insights into performance of leaders and how to develop it. By using advances in complexity theory, the tipping point analysis makes the results both more contextually sensitive and more predictive at the same time. This will aid in generating new insights into leadership effectiveness, but also help in the sensitive application of such knowledge to the selection, development, retention, and motivation of leaders for the future.

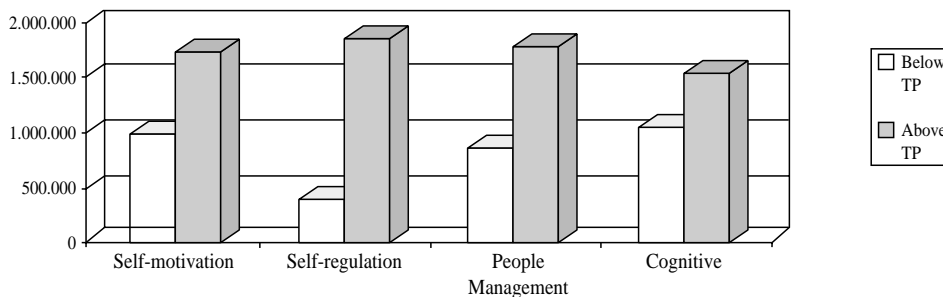|					
		Table 8			
	Account gross margin above and below the tipping point by cluster				
	BTP	**Below TP**	**ATP**	**Above TP**	
Cluster	**n**	**Margin**	**n**	**Margin**	**z**
Self-motivation	19	54%	24	59%	-1.74*
Self-regulation	11	42%	32	62%	-2.96***
People management	16	47%	27	63%	-2.14*
Cognitive	12	47%	31	60%	-1.86*
One-tailed Significance levels: + p<.10; * p<.05; ** p<.01; *** p<.001					

Figure 2. Annualized gross profit for senior partners above and below the tipping point of competencies and the number of competencies within cluster

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