Leadership
Gap Indicator

USER'S GUIDE

Center for Creative Leadership
www.ccl.org

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Introduction

A "leadership gap" is a shortfall between current and forecasted leadership capacity. Even though the term *leadership gap* has been part of the business vernacular for years, organizations continue to struggle with the critical challenge of identifying, selecting, and developing leadership talent. Data provided through LEADERSHIP GAP INDICATOR can help to solidify a call to action.

LEADERSHIP GAP INDICATOR is a tool for assessing managers' opinions about their development needs. Managers assess the relative importance of various leadership competencies for success *now* and in the *future* and then assess the ability of their peer group to perform them. The target audience is HR managers and executives, managers, supervisors, team leaders, and potential managers.

User's Guide Audience and Purpose

The user's guide is designed to be a resource for anyone for use with LEADERSHIP GAP INDICATOR. All the information and materials needed to administer and interpret the LEADERSHIP GAP INDICATOR report are provided.

Please consult the appendix for definitions of the terms used in this document. Additional LEADERSHIP GAP INDICATOR documentation can be found in the following locations:

- **Sample report** – www.ccl/leadershipgap
- **Technical Requirements** (document prepared for your IT department so that they are aware of this initiative and can limit firewall issues) – www.ccl/leadershipgap
- **FAQs document** – www.ccl/leadershipgap
- **CCL Policy on Privacy** (a document that describes CCL policy regarding data collection and privacy) – http://www.ccl.org/leadership/utilities/privacyData.aspx

Appropriate Use

LEADERSHIP GAP INDICATOR is designed to diagnose group training needs and is not designed for use in selection, compensation, or performance appraisal.

SURVEY MODELS

Standard Leadership Model

LEADERSHIP GAP INDICATOR was developed as part of a major Center for Creative Leadership (CCL) research initiative designed to determine whether the current level and type of leadership skills are sufficient to meet organizational needs. The model used in the research, the Standard Leadership Survey Model, consists of 20 leadership competencies and five derailment factors (see Tables 1 and 2). These competencies were selected because their source measurement and structural equivalence have been examined across a broad range of managerial levels, organizational settings, and cultures (Raju, Leslie, McDonald-Mann, & Craig, 1999; Lee & Ang, 2003; Braddy, 2007). Together they offer an opportunity to examine an organization's leadership effectiveness now and in the future.

Table 1
Standard Leadership Model Competencies and Definitions

Leading employees	Attracts, motivates, and develops employees.
Building collaborative relationships	Builds productive working relationships with co-workers and external parties.
Career management	Uses effective career management tactics, including mentoring, professional relationships, and feedback channels.
Change management	Uses effective strategies to facilitate organizational change initiatives and overcome resistance to change.
Compassion & sensitivity	Shows genuine interest in others and sensitivity to employees' needs.
Confronting problem employees	Acts decisively and with fairness when dealing with problem employees.
Decisiveness	Preferring doing or acting over thinking about the situation.
Respect for differences	Effectively working with and treating people of varying backgrounds (culture, gender, age, educational background) and perspectives fairly.
Taking initiative	Takes charge and capitalizes on opportunities.
Balancing personal life & work	Balances work priorities with personal life.
Participative management	Involves others, listens, and builds commitment.
Putting people at ease	Displays warmth and a good sense of humor.
Being a quick learner	Quickly masters new technical and business knowledge.

Strategic perspective	Understands the viewpoint of higher management and effectively analyzes complex problems.
Self-awareness	Has an accurate picture of strengths and weaknesses and is willing to improve.
Composure	Demonstrates self-control in difficult situations.
Employee development	Coaches and encourages employees to develop in their careers.
Strategic planning	Develops long-term objectives and strategies; translates vision into realistic business strategies.
Culturally adaptable	Adjusting to ethnic/regional expectations regarding Human Resource practices and effective team process.
Inspiring commitment	Motivates others to perform at their best.

Table 2
Standard Leadership Model Derailment Factors and Definitions

Difficulty building and leading a team	Difficulties in selecting, developing, and motivating a team.
Difficulty changing or adapting	Resistant to change, learning from mistakes, and developing.
Failure to meet business objectives	Difficulties in following up on promises and completing a job.
Problems with interpersonal relationships	Difficulties in developing good working relationships with others.
Too narrow functional orientation	Lacks depth to manage outside of one's current function.

Modifying Your Model

You may customize your LEADERSHIP GAP INDICATOR model by selecting up to 36 competencies from CCL's LEADERSHIP GAP LIBRARY. There is no single best way to select competencies; however, we have established steps, activities, and points to consider.

Selecting Competencies Based on Your Organization's Existing Model
The following planning guide outlines steps to help you match competencies from LEADERSHIP GAP LIBRARY with your competency model.

Planning Guide for Selecting Competencies Based on an Existing Competency Model

Step 1: Review and select competencies in LEADERSHIP GAP LIBRARY.	Step 2: Evaluate the selected competencies for possible overlap.	Step 3: Once the competencies are in place, administer the survey to assess potential gaps between the current and desired states of leadership capability.
Start by reviewing LEADERSHIP GAP LIBRARY on page 14. We recommend that you read the descriptions closely and track your decisions.	There is some overlap between competencies in the library because they originated from different research studies. Check your selection for this possibility.	Assess your organization's need for leadership development.
♦ Which competencies are clear matches to those in your model?	♦ Review competencies with similar wording. Think about the behaviors in your organization that make that competency effective. Is there one that focuses more with those behaviors?	♦ Are the leadership gaps more pronounced at a specific organization level?
♦ Are there competencies that can be eliminated?	♦ Does one competency seem more important for your target managers to master than another?	♦ Are there gaps in specific lines of business?
♦ Are there any competencies missing? If so, look again at the complete list of competencies for close candidates.	♦ Which of the similar competencies seem more critical for your organization to remain successful?	♦ Are the leadership gaps more evident in certain divisions?
♦ Have you covered key competencies in your model that you feel might point to managers' needed development?		♦ Are the gaps geographical?

Creating a Competency Model Based on Your Organization's Strategy and Model of Effective Leadership

Remember that a competency is a characteristic or behavior related to successful performance. Competencies are not about skills needed for specific jobs, job descriptions, or specific positions within organizations. Rather, a competency model indicates which characteristics should be demonstrated by a successful performer. The planning guide and activities in this section can help you create a competency model for your organization.

Planning Guide for Creating a Competency Model

Step 1: Articulate your organization's strategy.	Step 2: Identify competencies that map to these strategies and your leadership model.	Step 3: Review and select competencies in LEADERSHIP GAP LIBRARY.	Step 4: Administer the survey to assess potential gaps between the current and desired states of leadership capability.
Answer the following questions to help you articulate the connection between strategy and leadership development.	Identify core competencies needed for successful execution of your organization's strategy.	Start by reviewing LEADERSHIP GAP LIBRARY on page 14. We recommend that you read the descriptions closely and track your decisions.	Assess your organization's need for leadership development.
♦ What are your organization's core purpose, goals, and objectives?	♦ What skills and competencies are needed to fulfill your organization's core purpose, goals, and objectives?	♦ Which competencies are clear matches to those in your model?	♦ Are the leadership gaps more pronounced at a specific organization level?
♦ What are your organization's present strengths and weaknesses? How will that change in five or more years?	♦ What skills and competencies must you have in place five years from now to be successful?	♦ Are there competencies that can be eliminated?	♦ Are there gaps in specific lines of business?
♦ What are your organization's future	♦ Which competencies are	♦ Are there any competencies	♦ Are the leadership

strengths, weaknesses, opportunities, and threats (SWOT)?	critical for your organization to remain successful?	missing? If so, look again at LEADERSHIP GAP LIBRARY for close candidates.	gaps more evident in certain divisions?
◆ What is your organization's competitive advantage? What is your position in the marketplace?	◆ Which competencies are critical for your organization to remain competitive?	◆ Have you covered key competencies in your model that you feel might point to managers' needed development?	◆ Are the gaps geographical?

Step 1: Articulate your organization's strategy.

Use the questions provided in the Planning Guide to begin to articulate the connection between strategy and leadership development.

Activity 1: Articulate your organization's strategy.

Directions: For each question in the left column, provide a response in the right column. Use additional paper or space as needed.

Questions	*Responses*
1. What are your organization's core purpose, goals, and objectives?	
2. What are your organization's present strengths and weaknesses? How will that change in five or more years?	
3. What are your organization's future strengths, weaknesses, opportunities, and threats (SWOT)?	
4. What is your organization's competitive advantage? What is your position in the marketplace?	

Step 2: Identify competencies that map to these strategies and your leadership model.

Identify core competencies needed for successful execution of your organization's strategy. Once you have identified the leadership competencies that will best serve your organization's strategy, turn to pages 14-19 to review the 56 competencies in LEADERSHIP GAP LIBRARY and make your selection.

Activity 2: Identify competencies that map to these strategies and your leadership model.

Directions: For each question in the left column, provide a response in the right column. Use additional paper or space as needed.

Questions	Responses
1. What skills and competencies are needed to fulfill your organization's core purpose, goals, and objectives?	
2. What skills and competencies must you have in place five years from now to be successful?	
3. Which competencies are critical for your organization to remain successful?	
4. Which competencies are critical for your organization to remain competitive?	

Additional Considerations When Building Your Customized Survey Model

The Length and Time to Complete

Lengthy surveys take more time to complete and can be a barrier to receiving a quality report. Some individuals may complete the instrument superficially just to finish it. Consider the length and time it will take your managers to complete the survey. As a guideline, 50 questions may take 20 to 30 minutes to complete, whereas a 100-item survey will take approximately 40 to 50 minutes to complete.

There is no absolute rule on how long or short a survey should be, but the preference is for shorter (around 50 items) and more focused surveys. If you feel that the survey may be too long, consider more thoroughly assessing a smaller number of competencies. In addition, you may want to avoid competencies that assess overlapping areas.

Narrowing Competencies Important to Your Organization

You have the option of selecting from similar competencies. For example, one key managerial area, building and maintaining relationships, has six competencies from which to choose (managing conflict, building collaborative relationships, putting people at ease, compassion and sensitivity, face saving, and engaged management). Answers to the following questions will help guide you in selecting the best competencies:

- Is one competency more important for your target managers to master in order to address your highest-priority leadership needs?

- How does choosing one competency over another influence the length of the survey?

- Are there any competencies that can be easily eliminated?

Timing

We recommend that you plan adequate time to select competencies for your survey models. The process you use, the number of people involved in the decision, and the level of debate and discussions expected will drive the amount of time you need.

Competency Library

The competencies in LEADERSHIP GAP LIBRARY are part of CCL's typology of leader competencies. All 56 were identified through multiple research studies aimed at understanding effective leadership. Through these studies, the competencies were shown to be enduring characteristics of managers, observable through behavior, and related to effective leadership performance.

Competencies in the Standard Leadership Model Survey (see chart below) are organized into three dimensions using the typology of leader attributes: *Leading the Organization, Leading Others,* and *Leading Yourself.*

Standard Leadership Model Competencies

Leading the Organization	Leading Others	Leading Yourself
• Being a quick learner • Decisiveness • Change management • Strategic perspective	• Building collaborative relationships • Compassion & sensitivity • Confronting problem employees • Culturally adaptable • Employee development • Inspiring commitment • Leading employees • Participative management • Putting people at ease • Respect for differences • Strategic planning	• Balancing personal life & work • Composure • Taking initiative • Career management • Self-awareness

LEADERSHIP GAP LIBRARY is organized around the same three dimensions: *Leading the Organization, Leading Others,* and *Leading Yourself.* We recommend you select a <u>maximum</u> of 12 competencies for each dimension (total maximum number of competencies = 36) in addition to the derailment factors. A survey of this size would require each rater to answer between 150-160 questions in a 60-70 minute timeframe. Lengthy surveys take more time to complete and can result in fatigue and results of less than optimal quality.

Organization of the Library (refer to pages 14-19)

- Reading across the table headings, the competencies are organized into three dimensions: *Leading the Organization, Leading Others*, and *Leading Yourself*.

- Reading down each dimension, the competencies are further grouped into key managerial areas. For example, the competency *Change management* is reflective of skill related to managing change in organizations.

- Finally, the columns labeled *Use* indicate whether the competency is already included in the Standard Leadership Model (labeled *Standard*) or is available to be used in a customized model of your choice (labeled *Optional*).

- Each competency is numbered to help you customize your survey model and complete the LEADERSHIP GAP INDICATOR order form. Use the chart below to keep track of the competency numbers and how many you have selected for each dimension.

Selected Leadership Model Competencies

Leading the Organization *Select up to 12.*	Leading Others *Select up to 12.*	Leading Yourself *Select up to 12.*

LEADERSHIP GAP LIBRARY

LEADING THE ORGANIZATION			LEADING OTHERS			LEADING YOURSELF		
Key Managerial Area	*Competencies*	*Use*	*Key Managerial Area*	*Competencies*	*Use*	*Key Managerial Area*	*Competencies*	*Use*
Managing Change	**1. Change management** – Uses effective strategies to facilitate organizational change initiatives and overcome resistance to change.	Standard	*Managing Effective Teams & Work Groups*	**21. Forging synergy -** Maintains smooth, effective working relationships; promotes effective teamwork.	Optional	*Developing Adaptability*	**40. Adaptability** – Adapts to changing business conditions and is open to new ideas and new methods.	Optional
Solving Problems & Making Decisions	**2. Getting information, Making sense of it; Problem identification -** Seeks information and can create order out of large quantities of information. Gets to the heart of a problem.	Optional	*Building & Maintaining Relationships*	**22. Managing conflict; Negotiation -** Negotiates adeptly with individuals and groups; effective at managing conflict and confrontations skillfully.	Optional		**41. Culturally adaptable -** Adjusts to ethnic/regional expectations regarding Human Resource practices and effective team process.	Standard
	3. Sound judgment – Makes timely decisions; readily understands complex issues; develops solutions that effectively address problems.	Optional		**23. Building collaborative relationships** - Builds productive working relationships with co-workers and external parties.	Standard		**42. Resiliency** – Has capacity to recover under adversity.	Optional
	4. Decisiveness - Prefers doing or acting over thinking about the situation.	Standard		**24. Putting people at ease** - Displays warmth and a good sense of humor.	Standard	*Increasing Self-Awareness*	**43. Self-awareness** – Has an accurate picture of strengths and weaknesses and is willing to improve.	Standard

LEADING THE ORGANIZATION			LEADING OTHERS			LEADING YOURSELF		
Key Managerial Area	*Competencies*	*Use*	*Key Managerial Area*	*Competencies*	*Use*	*Key Managerial Area*	*Competencies*	*Use*
	5. Strategic perspective - Understands the viewpoint of higher management and effectively analyzes complex problems.	Standard		**25. Compassion & sensitivity** - Shows genuine interest in others and sensitivity to employees' needs.	Standard		**44. Seeks and uses feedback** – Pursues, responds to and uses feedback.	Optional
Managing Politics & Influencing Others	**6. Influencing, Leadership, Power** – Good at inspiring and promoting a vision; able to persuade and motivate others; skilled at influencing superiors; delegates effectively.	Optional		**26. Face saving** - Maintains harmony and good relationships with others by indirect communication, avoiding negatives, or being secretive about potentially disturbing information.	Optional		**45. Open to criticism** - Handles criticism effectively; does not act threatened or get overly defensive when others (especially superiors) are critical.	Optional
	7. Political skill - Influences by effectively understanding others and using that knowledge to attain goals.	Optional		**27. Engaged management** - Creates positive attitudes among employees; promotes commitment to the organization and its values; motivates people to higher performance.	Optional	*Managing Yourself*	**46. Career management** - Uses effective career management tactics, including mentoring, professional relationships, and feedback channels.	Standard
Taking Risks & Innovating	**8. Risk-taking, Innovation** - Seizes new opportunities and consistently generates	Optional	*Valuing Diversity & Difference*	**28. Respect for differences** - Effectively working with and	Standard		**47. Balancing personal life & work** – Balances work	Standard

LEADING THE ORGANIZATION			LEADING OTHERS			LEADING YOURSELF		
Key Managerial Area	Competencies	Use	Key Managerial Area	Competencies	Use	Key Managerial Area	Competencies	Use
	new ideas; introduces and creates needed change even in the face of opposition; visionary.			treating people of varying backgrounds (culture, gender, age, educational background) and perspectives fairly.			priorities with personal life.	
Setting Vision & Strategy	**9. Strategic planning -** Develops long-term objectives and strategies; translates vision into realistic business strategies.	Standard		**29. Global awareness -** Leads the organization in understanding international issues; tracks global trends and world events.	Optional		**48. Coping with pressure and adversity; Integrity –** Capable in high-pressure situations; resilient, optimistic, trustworthy.	Optional
Managing the Work	**10.Administrative/ Organizational ability - O**rganizes and manages projects and people well; can easily handle situations where there is no prescribed method of proceeding.	Optional	*Developing Others*	**30. Confronting problem employees** - Acts decisively and with fairness when dealing with problem employees.	Standard		**49. Composure -** Demonstrates self-control in difficult situations.	Standard
	11. Being a quick learner - Quickly masters new technical and business knowledge.	Standard		**31. Leading employees** - Attracts, motivates, and develops employees.	Standard	*Increasing Your Capacity to Learn*	**50. Seeks opportunities to learn–** Seeks out experiences that may change perspective or provide an opportunity to learn new things.	Optional

LEADING THE ORGANIZATION			LEADING OTHERS			LEADING YOURSELF		
Key Managerial Area	Competencies	Use	Key Managerial Area	Competencies	Use	Key Managerial Area	Competencies	Use
	12. Results orientation - Aligns resources to accomplish key objectives; assigns clear accountability for important objectives.	Optional		**32. Inspiring commitment -** Motivates others to perform at their best.	Standard		**51. Learning through others –** Values other people's perspectives and input and recognizes limits of own point of view.	Optional
	13. Business perspective - Understands the perspectives of different functional areas in the organization; has a firm grasp of external conditions affecting the organization.	Optional		**33. Employee development -** Coaches and encourages employees to develop in their careers.	Standard	*Exhibiting Leadership Stature*	**52. Leadership stature -** Provides good role model for employees and keeps a positive attitude.	Optional
	14. International business - Knows how to conduct business throughout the world.	Optional		**34. Selecting, Developing, Accepting people -** Sizes up people well; tolerant of idiosyncrasies and patient with others; good counselor and mentor; brings out the best in people; offers others appropriately challenging assignments and the opportunity to grow.	Optional	*Displaying Drive & Purpose*	**53. Energy, Drive, Ambition –** Has good initiative; high energy level; goal-directed; driven to achieve objectives.	Optional

LEADING THE ORGANIZATION			LEADING OTHERS			LEADING YOURSELF		
Key Managerial Area	*Competencies*	*Use*	*Key Managerial Area*	*Competencies*	*Use*	*Key Managerial Area*	*Competencies*	*Use*
Enhancing Business Skills & Knowledge	**15. Customer/Vendor relations -** Builds and maintains strong relationships with key contacts outside of the organization.	Optional		**35. Developing & empowering –** Offers constructive feedback and encouragement; delegates work and encourages individual initiative.	Optional		**54. Committed to making a difference -** Demonstrates a strong commitment to the success of the organization and is willing to make personal sacrifices to contribute to that success.	Optional
	16. Financial management - Has the skills necessary to manage budget and capital responsibilities.	Optional		**36. Delegating -** Effectively delegates responsibility and allows employees the freedom to learn through their experiences.	Optional		**55. Taking initiative -** Takes charge and capitalizes on opportunities.	Standard
	17. Marketing - Understands marketing strategy, research, and planning.	Optional		**37. Career mentoring -** Uses effective strategies to aid in the career advancement of others.	Optional	*Demonstrating Ethics & Integrity*	**56. Credibility –** Acts in accordance with stated values; follows through on promises; uses ethical considerations to guide decisions and actions.	Optional
	18. Human resources - Hires qualified people, tracks their progress, gives corrective	Optional	*Communicating Effectively*	**38. Communicating information, Ideas -** Effectively	Optional			

LEADING THE ORGANIZATION			LEADING OTHERS			LEADING YOURSELF		
Key Managerial Area	*Competencies*	*Use*	*Key Managerial Area*	*Competencies*	*Use*	*Key Managerial Area*	*Competencies*	*Use*
	action when necessary.			communicates organization goals and is able to inspire through presentation of information.				
	19. Sales - Maintains necessary client and customer relations and is good at selling organization's products/services.	Optional		**39. Participative management** - Involves others, listens, and builds commitment.	Standard			
Understanding & Navigating the Organization	**20. Acting systemically** - Understands the political nature of the organization and works appropriately within it; effectively establishes collaborative relationships and alliances throughout the organization.	Optional						

Response Scale

Section 1

Respondents rate each of the leadership competencies
1. according to the amount of skill people at their level and in their present job are currently demonstrating.
2. according to the amount of skill people at their level and in their present job need to demonstrate to be maximally effective.

Each competency is assessed using the following response scale:

1	2	3	4	5	6	7
Extremely Small Amount		Moderate Amount			Extremely Large Amount	

Section 2

Respondents rate each of the five derailment areas
1. according to the amount to which each is problematic for people at their company in their level.

Each derailment area is assessed using the following response scale:

1	2	3	4	5	6	7
Extremely Small Amount		Moderate Amount			Extremely Large Amount	

Section 3

Respondents rate each of the leadership competencies on
1. how important each skill and perspective is for success in their organization.
2. how important each skill will become in the next five years for their organization to remain successful.

Each competency is assessed using the following response scale:

1	2	3	4	5	6	7
Not at All Important		Moderately Important			Critically Important	

Sample Survey Questions

Survey for Leadership Gap Standard Survey

In this section of the survey, rate the importance of the skills for implementing your organization's strategy as well as what is generally important within the organization.

Please do not rate all items a "7". Do your best to distinguish which skills are more important and which skills are less important. A response to each question is required. If you believe you cannot answer both questions, choose Not Applicable (NA).

1	2	3	4	5	6	7
Not at all important			Moderately important			Critically important

	NA	How important is each skill for success in your organization right now?							How important will each skill become for success over the next five years?						
1. **Being a quick learner** - Quickly masters new technical and business knowledge.	☐ N/A	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7
2. **Change management** - Uses effective strategies to facilitate organizational change initiatives and overcome resistance to change.	☐ N/A	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7
3. **Decisiveness** - Prefers doing or acting over thinking about the situation.	☐ N/A	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7
4. **Strategic perspective** - Understands the viewpoint of higher management and effectively analyzes complex problems.	☐ N/A	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7
5. **Strategic planning** - Develops long-term objectives and strategies; translates vision into realistic business strategies.	☐ N/A	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7
6. **Building collaborative relationships** - Builds productive working relationships with co-workers and external parties.	☐ N/A	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7
7. **Compassion & sensitivity** - Shows genuine interest in others and sensitivity to employees' needs.	☐ N/A	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7
8. **Confronting problem employees** - Acts decisively and with fairness when dealing with problem employees.	☐ N/A	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7
9. **Employee development** - Coaches and encourages employees to develop in their careers.	☐ N/A	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7
10. **Inspiring commitment** - Motivates others to perform at their best.	☐ N/A	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7	○ 1	○ 2	○ 3	○ 4	○ 5	○ 6	○ 7

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Survey for Leadership Gap Standard Survey

Use the response options below to indicate the amount of skill that <u>managers at your level</u> in your organization are demonstrating <u>in their current jobs</u>. A response to each question is required. If you believe you cannot answer both questions, please choose Not Applicable (NA).

Be as honest as possible in your assessment of skill among the managers at your level. Use the highest rating only in cases where the group as a whole shows the highest amount of skill. Also note that in some cases managers may actually need to demonstrate *less* of a particular skill to be *more* effective. Remember to assess the skill of <u>managers at your level in their current jobs.</u>

1	2	3	4	5	6	7
Extremely Small Amount			Moderate Amount			Extremely Large Amount

What is the overall amount of skill that managers at my level:	NA	Are currently demonstrating?							Need to demonstrate to be maximally effective?						
1. **Being a quick learner** - Quickly masters new technical and business knowledge.	☐ N/A	○1	○2	○3	○4	○5	○6	○7	○1	○2	○3	○4	○5	○6	○7
2. **Change management** - Uses effective strategies to facilitate organizational change initiatives and overcome resistance to change.	☐ N/A	○1	○2	○3	○4	○5	○6	○7	○1	○2	○3	○4	○5	○6	○7
3. **Decisiveness** - Prefers doing or acting over thinking about the situation.	☐ N/A	○1	○2	○3	○4	○5	○6	○7	○1	○2	○3	○4	○5	○6	○7
4. **Strategic perspective** - Understands the viewpoint of higher management and effectively analyzes complex problems.	☐ N/A	○1	○2	○3	○4	○5	○6	○7	○1	○2	○3	○4	○5	○6	○7
5. **Strategic planning** - Develops long-term objectives and strategies; translates vision into realistic business strategies.	☐ N/A	○1	○2	○3	○4	○5	○6	○7	○1	○2	○3	○4	○5	○6	○7
6. **Building collaborative relationships** - Builds productive working relationships with co-workers and external parties.	☐ N/A	○1	○2	○3	○4	○5	○6	○7	○1	○2	○3	○4	○5	○6	○7
7. **Compassion & sensitivity** - Shows genuine interest in others and sensitivity to employees' needs.	☐ N/A	○1	○2	○3	○4	○5	○6	○7	○1	○2	○3	○4	○5	○6	○7
8. **Confronting problem employees** - Acts decisively and with fairness when dealing with problem employees.	☐ N/A	○1	○2	○3	○4	○5	○6	○7	○1	○2	○3	○4	○5	○6	○7
9. **Employee development** - Coaches and encourages employees to develop in their careers.	☐ N/A	○1	○2	○3	○4	○5	○6	○7	○1	○2	○3	○4	○5	○6	○7
10. **Inspiring commitment** - Motivates others to perform at their best.	☐ N/A	○1	○2	○3	○4	○5	○6	○7	○1	○2	○3	○4	○5	○6	○7

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Survey for ABC Company (Standard Survey)

The factors listed below can inhibit leadership effectiveness. Please indicate the amount to which each of the following factors is a problem for <u>managers at your organization and level</u>. Note, a lower rating indicates this particular area is *not a problem*.

1	2	3	4	5	6	7
Extremely Small Amount			Moderate Amount			Extremely Large Amount

How much trouble is each of the following factors for managers at my level?	Extremely Small Amount			Moderate Amount			Extremely Large Amount
1. **Difficulty building and leading a team** - Difficulties in selecting, developing, and motivating a team.	○1	○2	○3	○4	○5	○6	○7
2. **Difficulty changing or adapting** - Resistant to change, learning from mistakes, and developing.	○1	○2	○3	○4	○5	○6	○7
3. **Failure to meet business objectives** - Difficulties in following up on promises and completing a job.	○1	○2	○3	○4	○5	○6	○7
4. **Problems with interpersonal relationships** - Difficulties in developing good working relationships with others.	○1	○2	○3	○4	○5	○6	○7
5. **Too narrow functional orientation** - Lacks depth to manage outside of one's current function.	○1	○2	○3	○4	○5	○6	○7

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REPORT CHARACTERISTICS

This section of the user's guide explains how to read and interpret the LEADERSHIP GAP INDICATOR report. Please note the images presented here are from the Standard Leadership Survey Model. Your report may not look exactly like the one shown here, and the page numbers may be different.

How to Read and Interpret

The LEADERSHIP GAP INDICATOR report provides data organized around questions which address perceptions of leadership effectiveness. The report begins with an overview of the competencies managers consider to be of greatest importance. Then the report presents data reflecting managers' perceptions of their peers' preparedness for leadership. The leadership gap section of the report compares required leadership capacity with forecasted leadership capacity. Finally, the report concludes with recommended strategies to close the leadership gap.

Cover Page
The cover includes your organization's name as it was provided in the LEADERSHIP GAP INDICATOR participant form. Also shown is the date the report was generated (dd mm yyyy).

Table of Contents

The LEADERSHIP GAP INDICATOR report is organized under the following sections.

1. Purpose and Overview
2. Respondent Profile
3. Success Profile
4. Leadership Profile
5. Leadership Gap Profile
6. Leadership Attention Index (LAI)
7. *Potential Challenges (optional)*
8. Developmental Planning
9. Additional Tables

TABLE OF CONTENTS

Note: The Potential Challenges section of the report is optional. To account for this type of customization, the page numbers are dynamic so they can shift from one organizational report to another.

Purpose and Overview

The information in this section provides a standard introduction to the survey, the guiding questions designed to help explore your organization's present state of leadership, and the list of selected competencies organized into three dimensions according to the typology of leader attributes (*Leading the Organization, Leading Others, and Leading Yourself*).

Purpose and Overview

The Leadership Gap Indicator is a tool for assessing managers' views about their leadership development needs. Managers assess the relative importance of select leadership competencies for success *now* and in the *future* and rate their ability to perform on these competencies. Gaps are exposed when these data reveal a deficit between managers' current and desired state of leadership capability.

To better understand managers' perceptions of their development needs, the Leadership Gap Indicator report presents answers to key questions about your organization's present state of leadership.

Success Profile	Which leadership competencies are critical for success in your organization?
Leadership Profile	How strong are your managers in these critical competencies?
Leadership Gap Profile	How aligned are your managers' strengths with what is considered important?
Leadership Attention Index	Where should your organization focus its leadership development efforts?
Potential Challenges	What factors may lead to the derailment of leaders in your organization?

The data in this report can be used to

- Identify leadership strengths and development needs in your organization
- Begin discussions about the impact of these strengths and development needs on the organization
- Rank the importance of leadership competencies within the organization
- Inform training and development plans.

Note: The leadership competencies and definition tables are listed in alphabetical order. These tables are dynamic and change based upon the competencies selected by the client.

Respondent Profile

Pie charts on this page report the distribution of people who completed the survey (in percentages) for the categories below. The sample size is the total number of people who completed the survey.

- Level: % Top, % Executive, % Upper Middle, % Middle.
- Age: % Below 45, % 45–54, % 55 and Above.

- Gender: % Male, % Female.
- Years experience: % Up to 5 years, % 6–10 years, % 11 years or more.

Respondent Profile

Who completed the survey?

This report is based on the analysis of 12 responses. Below are demographics about the managers who responded to the survey. Due to rounding, totals may not equal 100%.

Age

50.0%
12.5%
37.5%

■ Below 45   ■ 45 - 54   ■ 55 and Above

Gender

50.0%
50.0%

■ Male   ■ Female

Years of Service

25.0%   25.0%
50.0%

■ Up to 5 years   ■ 6-10 years   ■ 11 years or more

Level

12.5% 12.5% 12.5%
25.0%
37.5%

■ Top   ■ Executive   ■ Upper Middle   ■ Middle   ■ Other

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Note: Percentages may not total 100 because of rounding.

Success Profile

The graphs shown in this section are based on responses to how important each competency is for success in your organization (a) now and (b) in the next five years. Please turn to page 21 of this guide to see the exact wording of these questions and page 20 for the response scale options.

The four-quadrant graph (or 2 x 2 matrix) maps the importance placed on the competencies at two different points in time: *now* and in the *future*. Every competency

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falls into one of four categories within the 2 x 2 matrix (beginning in the top right corner and going counterclockwise):

1. Important *Now* and Important in the *Future*
2. Important *Now* and <u>Less</u> Important in the *Future*
3. <u>Less</u> Important *Now* and <u>Less</u> Important in the *Future*
4. <u>Less</u> Important *Now* and Important in the *Future*

Success Profile

Which leadership competencies are critical for success in your organization?

Managers rated how important each skill is for success in your organization right now and how important each skill will become for success over the next five years. Combining these perspectives provides a comprehensive picture of the leadership competencies managers consider to be of greatest importance. In the graph below, leadership competencies that fall in the upper right quadrant are considered by managers to be important both *now* and in the *future*.

	Leading the Organization
A	Acting systemically
B	Administrative / Organizational ability
C	Being a quick learner
D	Business perspective
	Leading Others
E	Building collaborative relationships
F	Career mentoring
G	Communicating information, ideas
H	Compassion & sensitivity
	Leading Yourself
I	Adaptability
J	Balancing personal life & work
K	Career management
L	Committed to making a difference

Note: Scores in this graph are calculated and plotted as follows:
- *Means are generated for each competency.*
- *Important in the Future and Important Now means are ranked. The lowest mean equals 1, and the highest mean equals the number of competencies selected by the client.*
- *The ranks for Important in the Future and Important Now become the X and Y coordinates respectively and are plotted on the four-quadrant graph.*

The line graph is also based on responses to the two importance questions. The plots are ordered from high to low based on the mean values raters provided for the importance of the competencies in the future. Data in this graph reflect the change in success factors over time.

Success Profile

This graph, also based on the answers to the importance questions, shows the pattern of ratings for each competency over time. Each plot is based on the average score for the group of managers who responded. The competencies are listed in descending order of their importance in the future. The range of possible ratings is from 1 (not at all important) to 7 (critically important).

	● Important Now	▲ Important in the Future

Note: Mean scores for Important Now and Important in the Future are plotted in this graph.

Competencies (descending order of future importance):
- Communicating information, ideas
- Being a quick learner
- Business perspective
- Career management
- Career mentoring
- Acting systemically
- Adaptability
- Administrative / Organizational ability
- Compassion & sensitivity
- Balancing personal life & work
- Committed to making a difference
- Building collaborative relationships

Reflection Questions

- How well do the importance ratings align with your organization's strategic direction? What is driving the importance of these ratings?
- What might account for some competencies becoming more or less important in the future? For example, are these changes related to changes in your organization's strategy, your industry, or the economy?
- How might changes in the importance of particular competencies impact your leader selection and development practices?

Interpretation of the Success Profile Section

The four-quadrant graph is a plot of the importance score ranks. A "Less Important" rank implies that in comparison to the other competencies rated, the particular competency is perceived to be less important for success in the organization. A "Less Important" rank does not necessarily suggest that the competency is not related to success in the organization.

Studying the competencies falling in each of the four quadrants can determine alignment with the talent development processes in place at the organization. Some patterns that can occur in these data are the following:

- Relatively stable rankings: The same competencies are rated high or low in importance both now and in the future. This may indicate the environment in the organization is perceived as rather stable with no major need to learn new skills.
- Leading the Organization competencies vs. Leading Others competencies: Competencies related to leading the organization are emphasized in contrast to competencies related to leading others or leading yourself. This pattern indicates a focus on task-oriented leadership in contrast to a relationship-oriented leadership.

The boxed area at the bottom of this section provides questions to help you begin interpreting and working with the data/results contained in this section.

Leadership Profile

The graphs shown in this section are based on responses to (a) the level of skill managers are *currently* demonstrating and (b) what they *need* to be maximally effective. Please turn to page 22 of this guide to see the exact wording of these questions and page 20 for the response scale options. The purpose of these skill level ratings is to provide a profile of the current leadership bench strength and the needed leadership bench strength.

The first graph in this section, a bar graph, presents the difference between current skill level and needed skill level. If the difference is 0.50 or greater the number will be displayed within the bar. Smaller differences will not appear in the bar because of limited space. The competencies are listed in descending order of skill gap magnitude. The average skill gap is presented as a benchmark at the top of the graph.

Note: Scores in this graph are calculated and plotted as follows:

- *The difference in current skill and needed skill (Current Skill – Needed Skill) are calculated. The range of possible values is from -6 to +6, but in practice it is rare to see values exceed -3 to +3.*
- *The differences from high to low are plotted.*
- *The average (mean) difference across all the competencies is provided at the top of the graph.*

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The line graph plots the average ratings that raters provided for each competency. The plots are ordered from high to low based on the mean values raters provided for the amount of skill needed to be maximally effective. Data in this graph reflect managers' perceptions of their needed skill development.

Leadership Profile

This graph, also based on the answers to current and needed skill questions, shows the pattern of ratings for each competency. Each plot is based on the average rating for the group of managers who responded. The competencies are listed in descending order of their needed skill level. The range of possible ratings is from 1 (extremely small amount) to 7 (extremely large amount).

	● Current Skill Level	▲ Needed Skill Level				
	1	2	3	4	5	6	7
Career mentoring				●	▲		
Adaptability			●		▲		
Communicating information, ideas				●	▲		
Compassion & sensitivity			●		▲		
Being a quick learner			●		▲		
Building collaborative relationships			●		▲		
Business perspective				●	▲		
Acting systemically			●		▲		
Administrative / Organizational ability			●		▲		
Balancing personal life & work			●		▲		
Career management			●		▲		
Committed to making a difference				●	▲		

Note: In this display, the pattern of ratings for each competency is clearly visible.

Reflection Questions

- As a group, what do managers need to improve?
- For each area in need of development, describe specific behaviors that would indicate competence or effectiveness in that area.
- What specific behaviors describe ineffective leaders in these areas?

Interpretation of the Leadership Profile Section

This survey is designed to capture changes in managers' perceptions of their skills over time. It is possible that less skill is needed in the future to be effective. It may be the case that managers recognize that overused strengths can become weaknesses. Mergers, acquisitions, and downsizing may also account for the apparent lack of competencies needed in the future. Remember that these are perceptions. The next step is to discuss what these results mean with your managers.

Positive values indicate that needed skill is greater than current skill. Negative values indicate that current skill is greater than needed skill. In other words, less skill is needed in the future to be effective. A value of 0 indicates no changes in the perception of that competency over time. A high average skill gap (presented as a benchmark at the top of the graph) is indicative of the need to increase the skill strength of leadership as a whole.
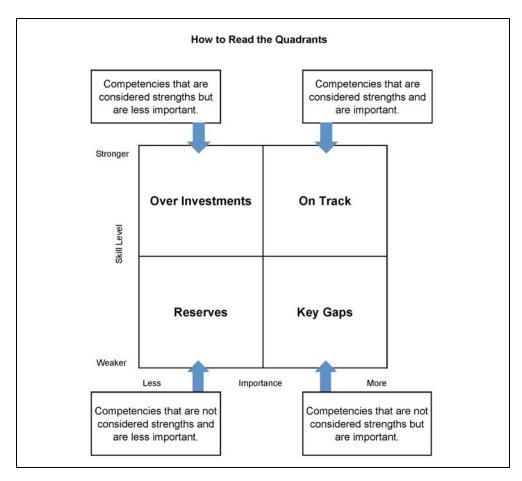
The boxed area at the bottom of this section provides questions to help you begin interpreting and working with the data/results contained in this section.

Leadership Gap Profile

In this section, two leadership gap profiles are presented: a *leadership gap profile of your current situation* and a *leadership gap profile of your future*. The four-quadrant graph (or 2 x 2 matrix) is used for both displays.

The horizontal axis indicates increasing levels of importance while the vertical axis indicates increasing levels of skill. These axes form four quadrants:

 (1) On Track: On the top right corner is the quadrant marked On Track. The competencies that fall in this quadrant are strengths and are more important. This is essentially good news for the organization.

 (2) Key Gaps: The quadrant labeled Key Gaps is on the bottom right. Skills that fall in this quadrant are important to success, but are not strengths. The competencies identified here likely offer the most return on investments in leadership development.

 (3) Reserves: The Reserves quadrant on the bottom left indicates competencies that are not very important and are not strengths. Raters indicate they have a low to medium skill level on it. Note that these competencies are seen as *less important in comparison* with the other skills, but *not absolutely unimportant* for success.

 (4) Over investments: The top left quadrant labeled Over investments points out competencies that are strengths and of relatively less importance. Competencies appearing in the Over investments quadrant provide a checkpoint for earlier leadership development efforts and strike a cautionary note for future initiatives.

How to Read the Quadrants

Competencies that are considered strengths but are less important.	Competencies that are considered strengths and are important.

Over Investments | **On Track**

Reserves | **Key Gaps**

Stronger — Weaker (Skill Level)

Less — Importance — More

Competencies that are not considered strengths and are less important.	Competencies that are not considered strengths but are important.

Note: The mean ratings that managers gave on the leadership competencies are transformed into ranks and are plotted onto these two axes.

Comparing the Leadership Gap Profiles

In comparing the current and future leadership gap profiles, it is useful to note the movement of the competencies between the four quadrants. Of particular importance are the following:

a. *Reserves* to *Key Gaps*: Competencies that move from being reserves to being key gaps indicate the need to prepare the leadership on these skills for success in five years' time.

b. *On Track* to *Over investments*: Competencies that move from being on track to being over investments indicate areas where returns on investments in training are likely to decrease.

Interpretation of the Leadership Gap Profiles Section

An important aspect of the leadership gap profiles is that if a skill is rated lower in importance, it does not mean that this skill is not vital to success. Rather, since these rankings are relative to one another, it is important to interpret this as follows: "*Given the current circumstances, managers indicate that it would be best to prioritize training on the skills*

identified under key gaps, rather than those identified as reserves." This distinction is very important since there is a fine line between prioritizing a competency for development and totally dismissing another as unnecessary.

The boxed area at the bottom of this section provides questions to help you begin interpreting and working with the data/results contained in this section.

Leadership Attention Index (LAI)

The index is designed to help you set priorities for leadership development initiatives. The LAI is best interpreted as a relative measure of priority among the skills identified as leadership gaps. Scores on the LAI can range from -50 to +50, but in practice it is rare to see values exceed -30 to +30.

Leadership Attention Index

Where should your organization focus its leadership development efforts?

The Leadership Attention Index (LAI) helps answer this question. For each competency, the LAI reflects the amount of skill managers say they currently demonstrate, the amount of skill they say they need to be effective, and their perception of the future importance of that skill. Scores on the LAI can range from -50 to +50, but in practice it is rare to see values exceed -30 to +30. The LAI is best interpreted as a relative measure of priority among the skills identified as leadership gaps. A lower index score on a particular skill means that a small skill gap was found and that the skill is not rated as important for the future. A higher index score means that the particular skill requires more urgent attention since the skill was found to have a larger skill gap and was rated as more important for the future.

	Score	-30	-20	-10	0	10	20	30
Adaptability	11.35							
Compassion & sensitivity	9.46							
Building collaborative relationships	9.10							
Acting systemically	8.83							
Administrative / Organizational ability	8.83							
Communicating information, ideas	8.51							
Being a quick learner	8.35							
Career mentoring	8.35							
Business perspective	7.07							
Balancing personal life & work	6.81							
Career management	6.43							
Committed to making a difference	3.71							

Note: The Leadership Attention Index (LAI) is a quantitative composite measure of the leadership gap.
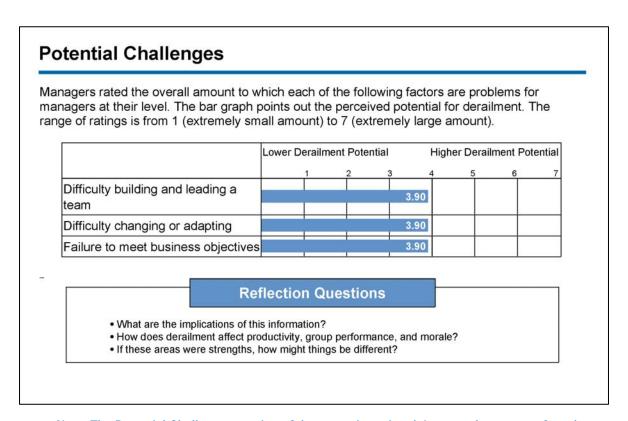
*LAI Value = (((Mean needed strength – Mean current strength) * mean of future importance) * 1.1904)*

Interpretation of the Leadership Attention Index Section

Higher positive scores for a competency reflect the need for higher priority to address the skill level in leadership development initiatives. A lower index score on a particular

competency means that a small skill gap was found and that the competency is not rated as important for the future. A negative score indicates potential areas of overinvestment.

Potential Challenges

All raters were asked to rate the extent to which each of the derailment factors was problematic for people in their organization at their level. The bar graph in this section indicates the extent to which each of the derailment factors is a cause for concern.

Potential Challenges

Managers rated the overall amount to which each of the following factors are problems for managers at their level. The bar graph points out the perceived potential for derailment. The range of ratings is from 1 (extremely small amount) to 7 (extremely large amount).

	Lower Derailment Potential			Higher Derailment Potential			
	1	2	3	4	5	6	7
Difficulty building and leading a team			3.90				
Difficulty changing or adapting			3.90				
Failure to meet business objectives			3.90				

Reflection Questions

- What are the implications of this information?
- How does derailment affect productivity, group performance, and morale?
- If these areas were strengths, how might things be different?

Note: The Potential Challenges section of the report is optional. Lower values are preferred.

Interpretation of the Potential Challenges Section

Lower values are preferred, as executive derailment is a major cause of concern in the process of talent management and has implications in the talent development strategies of companies.

The boxed area at the bottom of this section provides questions to help you begin interpreting and working with the data/results contained in this section.

Developmental Planning

This section of the report is targeted toward executives tasked with the responsibility for training and development in their organization. It offers suggestions to close the top five leadership gaps identified by the LAI.

Developmental Planning

The Next Steps

How prepared are managers at ABC Sample Company? Below are suggestions to close the leadership gaps identified by the Leadership Attention Index. Competencies with a highest index score are stated followed by three types of suggestions to: **sensitize** managers to the importance of the leadership competency, **enable** the development of the skills, and **support** efforts towards skill development.

Adaptability

This skill has a high LAI value.

This skill involves adapting to changing business conditions and being open to new ideas and methods. Managers who do this well -
- Adapt to changing conditions.
- Anticipate problems and take preventive action.
- Handle multiple priorities/tasks well.
- Are open to new ideas and trying new methods.
- See the value in others' unique differences.

To improve:

Sensitize
- Educate managers about common reactions to change.
- Identify on-the-job experiences that force managers out of their routine and/or force them to see new perspectives.

Enable
- Encourage managers to invite and listen to the viewpoints of others who are different from themselves.
- Encourage managers to take part of a colleague's job while they are on temporary leave or assignment.

Support
- Encourage managers to get out of comfort zones. Support their volunteering for taskforces, assignments, or projects that are new but low in terms of risk.
- Support those who are perfectionist, risk adverse or unorganized as they work through developmental strategies to improve adaptability.

Note: If there is a numeric tie for the fifth competency, the competencies that are tied will be printed in alphabetical order.

Interpretation of the Developmental Planning Section
Under the competency heading are behaviors that describe highly skilled managers on the competency. Suggestions for improvement are then organized around a Sensitize – Enable – Support framework (see model below).

Sensitize – Enable – Support Framework

Sensitize	Practices, policies, and resources that an organization can undertake in order to raise the level of awareness among its leaders on the need to demonstrate the identified behaviors.
Enable	Practices, policies, and resources that an organization can invest in to improve the ability of its leaders to demonstrate the behaviors identified.
Support	Practices, policies, and resources that an organization can provide in order to ensure that leaders continue to demonstrate the desired behaviors.

This model sequences development efforts by sensitizing managers to the importance of the leadership competency, enabling development of the skill, and supporting efforts toward maintaining the skill.

Sensitize refers to practices, policies, and resources that an organization can undertake in order to raise the level of awareness among its leaders on the need to demonstrate the identified behaviors. Under the Sensitize section, you will find a list of behaviors that an organization can demonstrate in order to

a. unfreeze perceptions among its leadership on the skill level and importance of the identified competency
b. create a desire among the leadership to close the identified skill gap

Enable refers to practices, policies, and resources that an organization can invest in to improve the ability of its leaders to demonstrate the behaviors identified. Under the

Enable section, you will find a list of behaviors that an organization can demonstrate in order to help its leaders master the new behaviors that they are expected to display.

Support refers to practices, policies, and resources that an organization can provide in order to ensure that leaders continue to demonstrate the desired behaviors. Under the Support section, you will find a list of behaviors that an organization can demonstrate to
   a. indicate to its leaders that their new behaviors are valued
   b. indicate to its leaders that they need to continue demonstrating the identified behaviors at the desired level

Additional Tables

The tables in this section of the report present the numbers used in all the LEADERSHIP GAP INDICATOR report graphs.

Additional Tables

These tables present the numbers used in the graphs.

Overall Mean Scores

	Currently Demonstrating	Needs to Demonstrate	Importance Now	Importance in the Future
Acting systemically	3.70	5.10	3.70	5.30
Adaptability	3.50	5.30	3.80	5.30
Administrative / Organizational ability	3.60	5.00	3.80	5.30
Balancing personal life & work	3.90	5.00	4.20	5.20
Being a quick learner	3.90	5.20	3.90	5.40
Building collaborative relationships	3.70	5.20	3.70	5.10
Business perspective	4.10	5.20	3.70	5.40
Career management	4.00	5.00	3.80	5.40
Career mentoring	4.10	5.40	4.10	5.40
Committed to making a difference	4.20	4.80	3.80	5.20
Communicating information, ideas	4.00	5.30	3.90	5.50
Compassion & sensitivity	3.80	5.30	4.00	5.30

Note: The competencies are presented in alphabetical order.

Leadership Skills

Leadership Skills	LAI	Rank
Acting systemically	8.83	4
Adaptability	11.35	1
Administrative / Organizational ability	8.83	4
Balancing personal life & work	6.81	10
Being a quick learner	8.35	7
Building collaborative relationships	9.10	3
Business perspective	7.07	9
Career management	6.43	11
Career mentoring	8.35	7
Committed to making a difference	3.71	12

Sample Size Selection

LEADERSHIP GAP INDICATOR presents a snapshot of the leadership needs of the group from which the data were derived. The meaning or interpretation of these data may not be generalized beyond that group. For data to be generalizable, the sample size must be adequately large and gathered from a random sample of the population to which you wish to generalize. For example, a report of data from 50 people in marketing may not reflect information beyond that group of 50 people, unless the 50 respondents comprise a sizable and representative portion of the marketing group.

The information provided in Table 3 can guide you on how many people you need to select for the results to be reliable or consistent.[1] Keep in mind that these suggested sample sizes assume that random selection will be used. Also, while the table provides guidance, there is never a guarantee that the data from a sample are, in fact, representative of a population.

Table 3
Sample Size Selection

Population	Sample	Population	Sample	Population	Sample
10	9	230	144	1,400	301
15	14	240	147	1,500	305
20	19	250	151	1,600	309
25	23	260	155	1,700	313
30	27	270	158	1,800	316
35	32	280	162	1,900	319
40	36	290	165	2,000	322
45	40	300	168	2,200	327
50	44	320	174	2,400	331
55	48	340	180	2,600	334
60	52	360	186	2,800	337
65	55	380	191	3,000	340
70	59	400	196	3,500	346
75	62	420	200	4,000	350
80	66	440	205	4,500	354

[1] The sample sizes in the table reflect a Degree of Accuracy = plus or minus .05, Proportion of Sample Size = 0.5, and Confidence Level = 95% (Zemke & Kramlinger, 1982).

85	69	460	209	5,000	356
90	73	480	213	6,000	361
95	76	500	217	7,000	364
100	79	550	226	8,000	366
110	85	600	234	9,000	368
120	91	650	241	10,000	369
130	97	700	248	15,000	374
140	102	750	254	20,000	376
150	108	800	259	30,000	379
160	113	850	264	40,000	380
170	118	900	269	50,000	381
180	122	950	273	60,000	381
190	127	1,000	277	70,000	382
200	131	1,100	284	120,000	382
210	136	1,200	291	160,000	383
220	140	1,300	296	1,000,000	383

Administration Process

The implementation of LEADERSHIP GAP INDICATOR involves straightforward steps that take you from initiating the survey to delivery of the report.

Step 1	Begin by confirming with your information technology staff that all raters meet the technical requirements. A copy of the Technical Requirements document is available on ccl.org. This step helps prevents bounce-backs due to internal firewall issues.
Step 2	Complete the order form, which includes identifying the competencies necessary for leadership effectiveness, providing rater information, scheduling key dates, and confirming billing information.
Step 3	Upon receipt of completed order form, CCL will setup your LEADERSHIP GAP INDICATOR survey.
Step 4	Client administrators notify the recipients of purpose of the survey and let them know they should expect an email invitation from Leadership@datasltn.com.
Step 5	Raters access the system and complete the survey online. The system sends access to surveys and reminders via e-mail.
Step 6	Client administrators view status online of completed surveys and contact the CCL Administrator to score data.
Step 7	You will be notified by email when your LEADERSHIP GAP INDICATOR report is ready.

Ordering

For more information, contact:
Client Services +1 336 545 2810 info@ccl.org

Organizational Debrief

The suggested debrief is based on a 90-minute schedule. The information provided here is to be used with the LEADERSHIP GAP INDICATOR debrief slideshow.

Suggested Debrief Agenda

10–15 minutes, slides 1–5
Set the context:

- Explain why you selected this survey and why you administered it at this particular time.
- Define *gap analysis*.
- Describe who was selected to participate and why.
- Hand out competency definitions and copies of the report. If you customized the competencies, explain the rationale for the competencies you selected.
- Answer any questions individuals have about CCL and the research foundations of the tool.

75–80 minutes, slides 6–33
Provide an overview of the report and results:

- Provide an overview of the report sections.
- Describe the characteristics of the people who completed the survey.
- Discuss the report sections and ask probing questions about the results:

    o   Are there any surprises in these findings?
    o   What really stands out in the results?
    o   As a group, what are our managers' strengths?
    o   What are the benefits and costs associated with the top strengths?
    o   As a group, what do managers need to improve?
    o   What are the implications of top development needs?
    o   What strengths do our managers have that might become weaknesses? What are the implications of this information?
    o   How does derailment affect productivity, group performance, and morale?
    o   If these weaknesses were strengths, how might things be different?

- As you discuss the report, look for ways to connect it with events, historical perspectives, culture, values, talent management practices, and strategic perspectives in your organization.

    — Identify themes and patterns you see in the data.
    — For competencies that really stand out, ask managers to describe specific behaviors that reflect effectiveness in your organization.
    — Why might managers and senior executives have different perspectives about the most critical leadership needs?
    — Are there competencies identified as important but not strengths that your managers actually are exhibiting? If so, what factors may have influenced these results?

Norms

How do we compare to other organizations? This common question can be addressed by looking at norms or average results for groups. To date, LEADERSHIP GAP INDICATOR has been used by 2,200 leaders from 15 organizations in three countries. Table 4 presents a description of the norm group for LEADERSHIP GAP INDICATOR. Note that the norms provided are based on the "Understanding the Leadership Gap" research study undertaken by CCL during 2005–2008.

Since the final element of the CCL research was to determine how aligned current leadership is with what is thought to be important for effectiveness in the future, the following norm information focuses on results specific to that research question.

Over-investments: Competencies that are strengths but not considered important.

Reserves: Competencies that are not strengths and not considered important.

On Track: Competencies that are strengths and important.

Key Gaps: Competencies that are not strengths but are important.

Total Database Future Leadership Gap

Over-investments

- Building and mending relationships
- Compassion and sensitivity
- Culturally adaptable
- Respecting individual differences
- Composure
- Self-awareness

Reserves

- Confronting problem employees
- Putting people at ease
- Career management

On Track

- Being a quick learner
- Strategic perspective
- Participative management
- Taking initiative

Key Gap

- Decisiveness
- Change management
- Strategic planning
- Employee development
- Inspiring commitment
- Leading employees
- Balancing personal life & work

Financial Services Sector Future Leadership Gap

Over-investments

- Decisiveness
- Compassion & sensitivity
- Culturally adaptable
- Respect for differences
- Composure

Reserves

- Confronting problem employees
- Putting people at ease
- Career management
- Self-awareness

On Track

- Being a quick learner
- Strategic perspective
- Building collaborative relationships
- Participative management
- Taking initiative

Key Gap

- Change management
- Strategic planning
- Employee development
- Inspiring commitment
- Leading employees
- Balancing personal life & work

Information Technology Sector Future Leadership Gap

Over-investments

- Compassion & sensitivity
- Culturally adaptable
- Respect for differences
- Composure
- Self-awareness

On Track

- Being a quick learner
- Strategic perspective
- Building collaborative relationships
- Participative management
- Taking initiative

Reserves

- Confronting problem employees
- Putting people at ease
- Balancing personal life & work
- Career management

Key Gap

- Decisiveness
- Change management
- Strategic planning
- Employee development
- Inspiring commitment
- Leading employees

Singapore Future Leadership Gap

Over-investments

- Compassion & sensitivity
- Culturally adaptable
- Respect for differences
- Composure
- Taking initiative
- Self-awareness

On Track

- Being a quick learner
- Strategic perspective
- Building collaborative relationships
- Participative management

Reserves

- Confronting problem employees
- Putting people at ease
- Career management

Key Gap

- Decisiveness
- Change management
- Strategic planning
- Employee development
- Inspiring commitment
- Leading employees
- Balancing personal life & work

United States of America Future Leadership Gap

Over-investments

- Building collaborative relationships
- Compassion & sensitivity
- Culturally adaptable
- Putting people at ease
- Composure

Reserves

- Decisiveness
- Confronting problem employees
- Career management
- Self-awareness

On Track

- Being a quick learner
- Strategic perspective
- Participative management
- Respect for differences
- Taking initiative

Key Gap

- Change management
- Strategic planning
- Employee development
- Inspiring commitment
- Leading employees
- Balancing personal life & work

India Future Leadership Gap

Over-investments

- Compassion & sensitivity
- Culturally adaptable
- Respect for differences
- Composure
- Self-awareness

Reserves

- Confronting problem employees
- Putting people at ease
- Balancing personal life & work
- Career management

On Track

- Being a quick learner
- Strategic perspective
- Inspiring commitment
- Leading employees
- Participative management
- Taking initiative

Key Gap

- Decisiveness
- Change management
- Strategic planning
- Building collaborative relationships
- Employee development

Table 4

LEADERSHIP GAP INDICATOR *Norm Group April 2006—April 2008*

	N	%
N =	2200	100.0
Organizational Level		
Top (responsible for entire business; e.g., CXO, CFO, COO, CTO)	114	5.2
Executive (oversee multiple departments/units, or highest level in a function)	274	12.5
Upper middle (heads of functions or departments)	638	29.0
Middle (have groups reporting to me, but I report to function heads)	1089	49.5
Missing	85	3.9
Sector		
Finance	1392	63.3
Information Technology	808	36.7
Country		
Singapore	953	43.3
United States	805	36.6
India	442	20.1
Gender		
Male	1525	69.3
Female	635	28.9
Missing	40	1.8
Mean Age	42	51.7

Assessment of Validity and Reliability

The validity and reliability of LEADERSHIP GAP INDICATOR was established as part of a research study sponsored by the Center for Creative Leadership and supported by its research partners: the Singapore Economic Development Board, the TATA Management Training Center, and Merrill Lynch. These data were collected from 2006 to 2008. Sixty-three percent of the sample was from the financial services industry, and 37 percent was from information technology industries. Thirty-seven percent resided in the United States, 20 percent in India, and 43 percent in Singapore. The participants' mean age was 42 (SD = 8.6). Seventy-one percent of the sample was male. In terms of management level, 52 percent was middle, 30 percent was upper middle, 13 percent was executive, and 5 percent was executive.   On average, they have lived in their current countries for 35 years, and 55 percent have been managers in their current organizations for more than five years.

Face Validity

Focus groups of subject matter experts were conducted in India (n = 10), Singapore (n = 5), and the United States (n = 5). Subject matter experts (HR managers and test developers) evaluated the competency descriptors according to their (1) relevance to leadership effectiveness in their sector and (2) importance to the organization. Competency descriptions that were identified as relevant and important were used in the survey and serve as a testimony to face validity.

Construct Validity

As is standard psychometric practice in cross-cultural research, we conducted Exploratory Factor Analysis (EFA) and Item Response Theory (IRT)–based analyses to ensure equivalence of our measures across our country groups. Stated differently, we wanted to make sure our items did not contain differential item functioning (DIF, or a lack of measurement invariance) due to country differences. DIF occurs when individuals from two different groups with similar levels of a latent trait do not receive comparable observed item or scale scores due to differences in item parameters across the groups. Meaningful comparisons among groups cannot be made until DIF is ruled out.

EFA

A principal-axis EFA was performed to determine whether each of the study's four 20-item measures met the unidimensionality assumption required by IRT-based analyses. EFA was used to separately assess the dimensionality of each of the 20-item measures per country group, resulting in twelve total EFAs. As recommended by Hatcher (1994), scree plots and interpretability were the criteria used for selecting the best factor structure. We also considered Reckase's (1979) criterion for assuming unidimensionality. Specifically, Reckase argued that the unidimensionality assumption is met when the first factor explains at least 20 percent of the variance in scale items and the second factor explains only a small portion of variance present.

Item Response Theory (IRT)

The measurement equivalence of ratings across country can be examined via one of the multiple analytic techniques available that are based on IRT. IRT is a measurement paradigm that is used to investigate the relationships between an underlying latent construct and the probability of observed responses to items purported to measure that latent trait. Since the survey items used in this study have a Likert-type format, Samejima's (1969) Graded Response Model (GRM) was used to estimate item parameters. Among the models available to use with polytomous data, the GRM is commonly employed in the social sciences. In the GRM, two-item parameters are estimated. The first parameter estimated is the *a* parameter, or item discrimination, and represents the strength of the relationship between an item and a latent trait. There is only one *a* parameter per item, and it is analogous to item factor loadings in Confirmatory Factor Analysis (CFA). The second parameter estimated is the *b*, or threshold, parameter. There are one fewer *b* parameters than there are response options for Likert measures (e.g., 6 *b* parameters for a 7-point scale), and these parameters indicate the level of the latent trait that is needed to have an equal probability of choosing a certain response option (e.g., 3) or those higher (e.g., 4–5). The *b* parameters are most similar to item intercepts in CFA.

DIF Analyses

The IRT-based analytic technique that we used to assess DIF in this study was the Differential Functioning of Items and Tests (DFIT) framework. We conducted this analysis following the procedure outlined by Raju, van der Linden, and Fleer (1995). DFIT analyses were conducted separately on each 20-item measure for each possible pairwise country comparison (i.e., India vs. Singapore, India vs. U.S., and Singapore vs. U.S). Specifically, item and person parameters were initially estimated for both the reference and focal groups[2] via the GRM described previously using MULTILOG 7.03 (Thissen, 1991). Item parameters in the reference group were transformed to the metric of the focal group's item parameters using the Equate 2.1 (Baker, 1995) program. This

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[2] In this study, the reference group was always the country with larger sample size, and the focal group was the country in the comparison with the smaller sample size.

program accomplishes the linking or equating procedure using a modified version of Stocking and Lord's (1983) test characteristic curve method.

After equating the item parameters, DFIT statistics were obtained using the DFITPS6 program (Raju, 1999). The most relevant DFIT statistic in this study was the Non-Compensatory Differential Item Functioning (NCDIF) index. The DFITPS6 program provides an NCDIF value for each item, and these indices are generally used to determine whether a given item has DIF. In this study, items were deemed to have DIF if their NCDIF values exceeded the NCDIF cutoff value recommended by Raju (1999). Raju recommended a cutoff of .216 for items rated on a 7-point response scale and .384 for items rated on a 9-point response scale. DFIT also provides an index regarding whether there is differential functioning at the test or scale level, called differential test functioning (DTF, the scale-level equivalent of DIF).

Results

Assessment of Unidimensionality

Results from the EFAs of each of the four measures in each of the three country samples are presented in Table 5. As shown in the table, the first factor in each of these analyses had a large eigenvalue, whereas the second factors had eigenvalues of approximately 1 or less. The first factor in each analysis generally accounted for more than 50 percent of the variance, while the second factors accounted for less than 7 percent of the variance. The EFA results of all analyses met the unidimensionality criterion proposed by Reckase (1979) in that the first factors in these analyses accounted for much more than 20 percent of the items' variance and the second factors accounted for small percentages of variance. Moreover, in cases in which a second factor in the EFAs had an eigenvalue greater than 1, we examined a two-factor structure. In all cases, these two-factor solutions lacked simple structure and interpretability in that many items loaded highly onto both factors. In light of this, we concluded that each of our measures was best characterized as being unidimensional. The four factors can be best labeled Current Skill, Needed Skill, Important Now, and Important in the Future. These findings support the assumption of unidimensionality. The scree plots also provided strong support for unidimensionality.

Table 5
Principal Components and Confirmatory Factor Analysis Results for U.S., Singapore, and India

Scale	U.S.				Singapore				India			
	E1	E2	PV1	PV2	E1	E2	PV1	PV2	E1	E2	PV1	PV2
Current Skill	10.86	1.06	54%	5%	12.17	.93	61%	5%	10.58	.09	53%	5%

	E1	E2	PV1	PV2		E1	E2	PV1	PV2		E1	E2	PV1	PV2
Needed Skill	14.39	.68	72%	3%		14.89	.56	75%	3%		13.30	.77	66%	4%
Important Now	8.61	1.49	43%	7%		9.91	1.18	50%	6%		10.33	1.01	52%	5%
Important in the Future	8.65	1.35	43%	7%		9.49	1.35	47%	7%		8.52	1.15	43%	6%

E1 = Eigenvalue for the first component
E2 = Eigenvalue for the second component
PV1 = Percent of total variance accounted for by the first component
PV2 = Percent of total variance accounted for by the second component

Item Parameters from IRT Analyses

The GRM was used to estimate item parameters for each of our four measures per country. Item *a* parameter estimates ranged from 1.179 to 2.868, indicating that most items had reasonably strong relationships with their latent constructs. Overall, item *b* parameter estimates were adequately spread across the possible values of the latent trait. For more details see Tables 14–25 in the appendix.

DFIT Findings

As shown in Table 6, of the DFIT comparisons made across all four measures (current skill, needed skill, important now, and important in the future), none of the items exceeded their respective NCDIF cutoff values as recommended by Raju (1999). Additionally, many NCDIF values were close to 0, indicating nearly perfect measurement invariance across country groups. Thus, no DIF was found for any of the items across any of the country groups, meaning that the measures appeared to function equivalently across all cultural groups in our sample. This permits us to make meaningful mean group comparisons on each item, as mean group differences can be attributed to differences in the respective underlying latent traits and not spurious differences created by the instrument. Two competencies (being a quick learner and self-awareness), however, on the Important in the Future scale were not equivalent in the comparisons involving Singapore. Comparisons to Singapore for these two competencies should be discouraged.

Table 6

NC-DIF and DTF Values

	Current Skill			Needed Skill			Important Now			Important in the Future		
	India vs. Singapore	India vs. U.S.	U.S. vs. Singapore	India vs. Singapore	India vs. U.S.	U.S. vs. Singapore	India vs. Singapore	India vs. U.S.	U.S. vs. Singapore	India vs. Singapore	India vs. U.S.	U.S. vs. Singapore
Item	**NC-DIF**			**NC-DIF**			**NC-DIF**			**NC-DIF**		
1	0.032	0.023	1.006	0.017	0.006	0.010	0.001	0.001	0.002	0.001	0.000	0.001
2	0.038	0.033	0.003	0.011	0.017	0.002	0.009	0.006	0.001	0.032	0.004	0.019
3	0.008	0.018	0.031	0.005	0.026	0.048	0.019	0.012	0.065	0.039	0.000	0.037
4	0.016	0.039	0.015	0.025	0.013	0.021	0.009	0.001	0.013	0.006	0.000	0.004
5	0.001	0.001	0.002	0.001	0.002	0.003	0.000	0.004	0.004	0.043	0.002	0.037
6	0.020	0.012	0.040	0.007	0.066	0.040	0.007	0.017	0.044	0.021	0.018	0.004
7	0.018	0.006	0.005	0.013	0.006	0.005	0.002	0.012	0.015	0.029	0.002	0.039
8	0.007	0.185	0.157	0.009	0.050	0.034	0.009	0.020	0.003	0.023	0.020	0.002
9	0.043	0.277	0.132	0.002	0.050	0.037	0.022	0.018	0.034	0.011	0.007	0.002
10	0.354	0.197	0.028	0.012	0.011	0.002	0.011	0.003	0.003	0.033	0.007	0.017
11	0.003	0.012	0.006	0.003	0.001	0.004	0.000	0.002	0.001	0.024	0.004	0.010
12	0.006	0.005	0.002	0.006	0.006	0.021	0.011	0.007	0.002	0.005	0.012	0.032
13	0.053	0.028	0.002	0.014	0.011	0.002	0.032	0.015	0.007	0.419	0.016	0.221
14	0.039	0.039	0.011	0.010	0.009	0.014	0.002	0.000	0.001	0.017	0.006	0.004
15	0.010	0.057	0.037	0.009	0.006	0.005	0.011	0.009	0.002	0.615	0.002	0.518
16	0.028	0.092	0.026	0.019	0.061	0.012	0.009	0.011	0.001	0.041	0.008	0.012
17	0.009	0.075	0.053	0.018	0.017	0.002	0.005	0.018	0.006	0.080	0.005	0.032
18	0.027	0.071	0.011	0.050	0.009	0.014	0.024	0.013	0.002	0.006	0.003	0.001
19	0.012	0.022	0.038	0.015	0.010	0.015	0.005	0.015	0.023	0.002	0.011	0.007

	Current Skill			Needed Skill			Important Now			Important in the Future		
20	0.018	0.161	0.071	0.008	0.016	0.006	0.001	0.016	0.014	0.005	0.007	0.020
	India vs. Singapore	India vs. U.S.	U.S. vs. Singapore	India vs. Singapore	India vs. U.S.	U.S. vs. Singapore	India vs. Singapore	India vs. U.S.	U.S. vs. Singapore	India vs. Singapore	India vs. U.S.	U.S. vs. Singapore
Scale DTF	0.963	0.105	0.765	0.434	1.333	1.105	0.282	0.121	0.079	0.205	0.109	0.037
Item DTF	0.963	0.105	0.766	0.434	01.33	1.105	0.283	0.122	0.079	0.206	0.109	0.037

Intercorrelations of Competencies for Current Skill

Average intercorrelation of competencies for current skill is .54. All correlations were less than .70, suggesting adequate discriminant validity. See Table 8 for details.

Intercorrelations of Competencies for Needed Skill

Average intercorrelation of competencies for needed skill is .70. Forty-seven percent of the competency intercorrelations were less that .70, suggesting adequate discriminant validity. See Table 9 for details.

Intercorrelations of Competencies for Important Now

Average intercorrelation of competencies for important now is .46. All correlations were less than .70, suggesting adequate discriminant validity. See Table 10 for details.

Intercorrelations of Competencies for Important in the Future

Average intercorrelation of competencies for important in the future is .54. All correlations were less than .70, suggesting adequate discriminant validity. See Table 11 for details.

Reliability

Reliability of the survey was calculated using Cronbach's (1951) alpha. The results are provided in Table 7. These analyses reveal all scales were above the generally accepted minimum of .70.

Table 7
Reliability Indexes on Scales for USA, Singapore, and India

Scale	Number of Items	USA Cronbach's alpha	Singapore Cronbach's alpha	India Cronbach's alpha
Current Skill	20	.96	.97	.95
Needed Skill	20	.98	.98	.97
Important Now	20	.95	.93	.95
Important in the Future	20	.94	.93	.93

Establishing validity and reliability is an ongoing process. For further and continuing evidence, please look for updates to this guide.

Table 8

Intercorrelations of LEADERSHIP GAP INDICATOR Standard Leadership Model Competencies—CURRENT SKILL LEVEL

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Leading employees	-																			
2. Building collaborative relationships	.67																			
3. Career management	.60	.51																		
4. Change management	.68	.58	.58																	
5. Compassion & sensitivity	.56	.62	.44	.51																
6. Confronting problem employees	.56	.51	.46	.57	.46															
7. Decisiveness	.62	.55	.49	.61	.46	.61														
8. Respect for differences	.53	.60	.40	.50	.65	.44	.51													
9. Taking initiative	.54	.54	.39	.49	.50	.51	.58	.57												
10. Balancing personal life & work	.40	.42	.39	.41	.50	.40	.39	.44	.37											
11. Participative management	.62	.59	.50	.59	.59	.53	.54	.57	.53	.44										
12. Putting people at ease	.57	.60	.45	.51	.65	.47	.51	.60	.52	.50	.66									
13. Being a quick learner	.55	.52	.45	.53	.48	.51	.58	.50	.57	.39	.58	.55								
14. Strategic perspective	.58	.54	.51	.57	.49	.52	.56	.49	.54	.41	.61	.59	.64							
15. Self-awareness	.59	.56	.48	.57	.54	.54	.54	.54	.53	.46	.64	.62	.58	.63						
16. Composure	.53	.55	.42	.49	.52	.46	.52	.56	.55	.47	.56	.60	.56	.56	.64					
17. Employee development	.64	.53	.62	.60	.52	.51	.53	.51	.48	.44	.62	.59	.55	.58	.64	.58				
18. Strategic planning	.62	.51	.55	.67	.47	.57	.59	.49	.48	.43	.59	.55	.58	.64	.65	.54	.70			
19. Culturally adaptable	.50	.50	.44	.50	.54	.44	.47	.65	.51	.44	.54	.58	.55	.54	.57	.56	.56	.57		
20. Inspiring commitment	.64	.55	.54	.60	.56	.50	.52	.53	.49	.46	.61	.58	.53	.58	.62	.54	.68	.63	.58	-

Note: Correlations are significant at 0.01 probability level.

N = 2,200

Table 9

Intercorrelations of LEADERSHIP GAP INDICATOR Standard Leadership Model Competencies—NEEDED SKILL LEVEL

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Leading employees	-																			
2. Building collaborative relationships	.78																			
3. Career management	.64	.64																		
4. Change management	.77	.73	.65																	
5. Compassion & sensitivity	.73	.74	.63	.70																
6. Confronting problem employees	.67	.66	.58	.66	.66															
7. Decisiveness	.71	.69	.59	.70	.68	.68														
8. Respect for differences	.72	.74	.61	.70	.81	.66	.68													
9. Taking initiative	.74	.73	.58	.73	.74	.69	.72	.79												
10. Balancing personal life & work	.66	.66	.59	.67	.73	.62	.63	.73	.72											
11. Participative management	.74	.72	.62	.73	.74	.65	.69	.75	.75	.69										
12. Putting people at ease	.68	.69	.61	.67	.75	.62	.65	.76	.73	.71	.79									
13. Being a quick learner	.70	.71	.60	.72	.71	.63	.67	.74	.76	.68	.76	.76								
14. Strategic perspective	.72	.72	.61	.73	.71	.66	.68	.74	.76	.69	.78	.75	.81							
15. Self-awareness	.72	.70	.62	.70	.72	.65	.66	.75	.75	.69	.77	.75	.78	.80						
16. Composure	.71	.69	.58	.69	.72	.65	.66	.74	.76	.69	.76	.75	.78	.78	.80					
17. Employee development	.72	.67	.65	.70	.71	.63	.64	.70	.68	.68	.75	.73	.72	.75	.75	.74				
18. Strategic planning	.72	.65	.60	.73	.66	.63	.65	.69	.72	.64	.74	.70	.75	.77	.74	.73	.77			
19. Culturally adaptable	.69	.68	.60	.68	.73	.62	.65	.79	.73	.69	.75	.76	.77	.76	.77	.76	.73	.75		
20. Inspiring commitment	.74	.70	.63	.71	.73	.64	.68	.73	.72	.69	.77	.77	.74	.77	.76	.75	.80	.77	.77	-

Note: Correlations are significant at 0.01 probability level.

N = 2,200

Table 10

Intercorrelations of LEADERSHIP GAP INDICATOR Standard Leadership Model Competencies—SKILL IMPORTANCE NOW

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Leading employees	-																			
2. Building collaborative relationships	.52																			
3. Career management	.39	.45																		
4. Change management	.53	.44	.42																	
5. Compassion & sensitivity	.42	.51	.44	.46																
6. Confronting problem employees	.46	.45	.38	.47	.48															
7. Decisiveness	.48	.40	.36	.49	.42	.53														
8. Respect for differences	.37	.49	.39	.40	.61	.46	.41													
9. Taking initiative	.44	.41	.30	.45	.38	.50	.48	.47												
10. Balancing personal life & work	.37	.41	.41	.36	.58	.38	.36	.51	.33											
11. Participative management	.51	.46	.39	.47	.48	.43	.43	.47	.40	.47										
12. Putting people at ease	.37	.46	.40	.37	.59	.44	.38	.52	.37	.49	.60									
13. Being a quick learner	.39	.39	.36	.45	.40	.43	.43	.41	.48	.36	.48	.47								
14. Strategic perspective	.45	.44	.41	.49	.40	.46	.43	.39	.47	.34	.51	.46	.58							
15. Self-awareness	.42	.45	.41	.43	.52	.48	.40	.47	.41	.48	.54	.54	.52	.53						
16. Composure	.42	.46	.36	.43	.47	.46	.42	.44	.47	.44	.50	.52	.50	.51	.61					
17. Employee development	.49	.43	.48	.48	.50	.41	.41	.45	.36	.48	.57	.52	.47	.51	.56	.48				
18. Strategic planning	.51	.38	.37	.56	.41	.41	.44	.39	.38	.41	.56	.42	.51	.55	.50	.47	.64			
19. Culturally adaptable	.33	.41	.37	.38	.50	.41	.35	.64	.38	.44	.47	.54	.45	.45	.50	.46	.50	.46		
20. Inspiring commitment	.51	.44	.40	.47	.52	.43	.45	.45	.38	.49	.57	.53	.46	.51	.56	.49	.69	.60	.49	-

Note: Correlations are significant at 0.01 probability level.

N = 2,200

Table 11

Intercorrelations of LEADERSHIP GAP INDICATOR Standard Leadership Model Competencies—SKILL IMPORTANCE FUTURE (5 years)

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1. Leading employees	-																			
2. Building collaborative relationships	.47																			
3. Career management	.37	.47																		
4. Change management	.47	.38	.38																	
5. Compassion & sensitivity	.38	.49	.46	.41																
6. Confronting problem employees	.37	.43	.35	.39	.46															
7. Decisiveness	.40	.36	.33	.42	.38	.46														
8. Respect for differences	.35	.47	.43	.41	.58	.42	.33													
9. Taking initiative	.40	.38	.31	.45	.35	.47	.44	.41												
10. Balancing personal life & work	.31	.40	.38	.30	.55	.34	.28	.46	.29											
11. Participative management	.46	.44	.38	.43	.44	.35	.35	.43	.37	.39										
12. Putting people at ease	.34	.47	.46	.36	.59	.40	.33	.50	.35	.46	.48									
13. Being a quick learner	.33	.40	.36	.43	.36	.40	.34	.39	.45	.33	.44	.42								
14. Strategic perspective	.38	.41	.40	.45	.35	.38	.38	.36	.42	.31	.47	.43	.54							
15. Self-awareness	.39	.44	.44	.39	.48	.46	.37	.49	.41	.42	.46	.53	.49	.53						
16. Composure	.36	.43	.36	.39	.44	.42	.36	.44	.41	.42	.41	.52	.49	.49	.57					
17. Employee development	.45	.40	.47	.43	.46	.35	.36	.44	.34	.42	.47	.48	.41	.46	.51	.43				
18. Strategic planning	.49	.34	.29	.51	.33	.33	.36	.36	.40	.28	.46	.34	.47	.48	.44	.41	.51			
19. Culturally adaptable	.35	.41	.39	.38	.51	.40	.32	.63	.39	.39	.44	.53	.44	.43	.51	.47	.49	.45		
20. Inspiring commitment	.46	.40	.39	.41	.48	.37	.38	.45	.35	.42	.47	.50	.40	.44	.49	.44	.60	.50	.46	-

Note: Correlations are significant at 0.01 probability level.

N = 2,200

Competencies

Approximately 20 subject matter experts (SMEs) within CCL reviewed all 56 competencies and five derailment factors and then grouped them into meaningful categories according to key managerial areas. The following process was applied:

Scale Sort I
Each individual received 56 cards with a scale name written on each card. Individuals were asked to cluster related competencies and then give each cluster a category name. The results from this clustering were documented and reviewed by SMEs. Categories were then proposed based on the frequency with which the competencies were grouped.

Scale Sort II
Using a different group of SMEs, the proposed scale categories were reviewed, modified, and revised to reflect the "best" scale category names. SMEs were also asked to move any competencies around from one category to another, if something didn't seem to fit. A final group was formed to address any outstanding issues on category names or scale placement within a category. The results were reviewed, and a final decision was made on category names and competencies grouped in each category.

Derailment

For two decades, CCL researchers have studied derailment in a manager's career (e.g., Leslie & Van Velsor, 1996; Lombardo & McCauley, 1988; Morrison, White, & Van Velsor, 1987; Van Velsor& Leslie, 1995). A derailed manager is one who, having reached the general manager level, is fired, demoted, or considered to be in a career plateau. *Derailment* doesn't refer to individuals who elect to stay at a particular level or are not able to reach the top of the corporate pyramid for legitimate reasons. It is important to note that organizations saw these managers as having high potential for advancement but not living up to their potential. Many of these managers had impressive track records right up to the point at which their careers derailed.

The following five key characteristics are seen in derailed executives:

1. have problems with interpersonal relationships
2. fail to hire, build, and lead a team
3. fail to meet business objectives
4. are unable or unwilling to change or adapt
5. lack a broad functional orientation

The process for derailment represents an intertwined relationship between individual and organizational dynamics (see Table 12). High-potential and fast-tracked managers can easily become derailed if the organization fails to take an active hand in addressing the derailment potential. Derailment in any organization can be costly. Direct costs in the form of turnover, loss of profitability, and the exit of strategic company knowledge can sometimes be as high as an executive's salary. Indirect costs such as low morale and poor customer satisfaction can also take their toll on organizational commitment and productivity. According to Lombardo & Eichinger (1995), 30 percent to 50 percent of high-potential managers and executives derail at some time during their careers.

Table 12
The Dynamics of Derailment

Strengths become weaknesses	The strengths that made the person successful can become liabilities in situations where other strengths are more important.
Blind spots matter	Weaknesses and flaws that did not matter previously or that were forgiven in light of strengths or results become more obvious in a new situation.
Success leads to arrogance	Success can go to a person's head, leading to the mistaken belief that he/she is infallible and needs no one else. This often occurs at precisely the time when these assumptions are least viable.
Bad luck	Sometimes derailment follows a run-in with circumstances that are beyond the manager's control and is not an accurate reflection of the person's talent. Sometimes, however, bad luck is exacerbated by one of the other dynamics, suggesting that "fate" does not always act alone.

(Excerpted from McCall, 1998)

Derailment in North America and Asia

Perceptions of derailment were examined using data from a total of 2,670 managers from five countries: Singapore (n = 953), India (n = 442), Japan (n = 249), U.S. (n = 805), and Hong Kong (n = 221). The managers worked in 15 different companies in the information technology (n = 808) and financial services sectors (n = 1862). The respondents represent four different levels of management: middle (52.4 percent), upper middle (27.4 percent), executive (12.0 percent), and top (4.6 percent). On average, they have lived in their current countries for 33 years, have worked in their current positions for about six years, and are 41 years old. The majority of the sample is male (68 percent).

Unlike previous studies that assessed derailment, this study asked managers to rate the extent to which each derailment factor is a problem for managers at their level in their

organization. They rated each factor using a nine-point scale ranging from an extremely small amount to an extremely large amount.

Overall, leaders do not see critical challenges to their careers or development. In other words, derailment was not found to be a cause for concern. A comparison of the percentage of total managers who rated derailment in their organization high—that is, 7 to 9 on a nine-point response scale—showed that *too narrow managerial experience* and *difficulty building and leading a team* (see Table 12) could be factors for derailment. While these percentages appear low overall, they represent a total of 1,478 managers, or 55 percent of the total sample.

Table 13
Percentage of managers who rated derailment a problem in their organization

		Too narrow managerial experience	Difficulty building and leading a team	Difficulty changing or adapting	Problems with relationships	Failing to meet business objectives
Whole Sample		19%	16%	14%	12%	9%
Managers	Middle	16%	15%	12%	12%	7%
	Upper middle	22%	17%	17%	14%	10%
	Executive	22%	18%	16%	12%	10%
	Top	22%	19%	12%	10%	10%
Industry	IT	21%	14%	17%	13%	11%
	Finance	18%	17%	12%	12%	8%
Country	U.S.	19%	14%	13%	10%	8%
	Hong Kong	20%	16%	12%	15%	8%
	Singapore	18%	15%	13%	12%	7%
	India	19%	20%	17%	12%	9%
	Japan	18%	17%	17%	16%	13%

Level Differences
Managers' perceptions of their derailment potential differ. Middle managers overall tend to rate their potential to derail lower than the other management levels. These data also show, surprisingly, that top managers believe they have greater potential to derail because of problems with *too narrow managerial experience*.

Industry Differences
Managers in the financial services sector perceive themselves to be less likely to derail overall than managers in the IT sector. These results also showed that managers in both the IT and financial services industries perceive the potential to derail in the area of *too narrow managerial experience*.

Country Differences

This study shows that managers in the U.S. perceive that they are less likely to derail than managers in Asian countries. Overall, Japanese managers perceive the greatest potential for derailment. Managers in Hong Kong reported higher ratings (20 percent) than the other countries on *too narrow managerial experience,* while managers in India (20 percent) rated *difficulty building and leading a team* a potential problem in their organizations as compared to managers in other countries.

Preventing Derailment

If derailment is a problem in your organization, consider the following actions:

- Prefer zigzagging career paths for managers over vertical ones.
- Give lots of "how you did it" feedback instead of "what you did."
- Seek support and coaching for managers during transitions.
- Make managers aware that new jobs require new frameworks and behaviors.
- Encourage managers to seek feedback throughout their careers.
- Do not regard one failure as coming "off the track."
- Allow managers to complete jobs and assignments before moving on to new ones.
- Help managers seek developmental opportunities that can help overcome flaws.

No single success characteristic or fatal flaw is enough to control the outcome of a manager's career. Managers who have potentially derailing flaws but the ability to learn and develop can use leadership training, feedback, and developmental assignments to overcome possible career failure and prepare themselves for more senior leadership roles.

Derailment does not mean the end of a manager's career. Derailed managers could leave their organizations and go to other companies where their skills are a better fit or start their own businesses with success. Although recovery is believed to be possible, there is little evidence to support this.

Additional Research

Abstracts

Hannum, K., & Leslie, J. B. (2007, May). "Understanding the leadership gap: The strong link between leadership and corporate performance makes a deficit in leadership a concern." *Human Resources Magazine***, pp 13.**

A critical challenge for organizations today is the identification, selection, and development of leadership talent. Leaders are working in the face of unprecedented

complexity. The emergence of a global market, political and social reforms, economic opportunities, technological innovations, and changing workforce demographics define just some of the complexities and challenges leaders must navigate. Leaders who can effectively navigate this dynamic landscape are in demand, but are they available and how can they be identified? The strong link between leadership and corporate performance makes a deficit in leadership a concern of talent identification and management. The general concept of a leadership gap is easy to grasp; it implies that the current capacity is not aligned with needed or desired capacity.

A leadership gap by itself may not seem that important in the context of other organizational challenges and priorities. However, there is a link between leadership and corporate performance. It is this link that makes a gap, specifically a deficit, in leadership a concern.

Knowing that there is a leadership gap is a call to action, and it is clear that something needs to be done, but what? First, it is important to understand that a leadership gap can manifest itself in many different ways. One type of gap is that leaders are focused on the "right" capacities, but are not skilled at the level they need to be. This type of gap can be addressed by engaging leaders in ways that develop the targeted areas. Another type of gap, perhaps more concerning, is that leaders are not focused in the right areas for today or in the future. In either case, determining the right areas on which to focus is no small undertaking. Leadership is increasingly touted as a means of competitive advantage—not just any kind of leadership, but leadership that fits with an organizational culture and meets an organization's strategic needs.

Building leadership strength requires knowing what aspects of leadership are of the most value and relevance to an organization. Unless there is a cohesive sense of what needs to be developed, how, and why, the fit between leadership development initiatives and what needs to happen on the job may not be clear. Despite investing in leadership development, many organizations are unable to close the leadership gap. The obvious places to examine the reasons behind the failure to close the gap are the processes used to identify the gaps, the prioritization of which gaps are critical, and the tactics used to close the gap.

Hannum, K., & Leslie, J. B. (2007, June). "Identifying the leadership gap: What are some of the gaps in Asian leadership?" *Human Resources Magazine,* **pp 13.**
With seven of the top ten growth regions in the world economy being in the Asia Pacific region, it is important to uncover and comprehend the immense scope of data that will help further the understanding of leadership issues and challenges there, as the challenges that are faced in the West and other parts of the world may be unique to those areas.

The preliminary trends shared below are based on approximately 700 individuals in two organizations with locations in Japan, India, Hong Kong, and Singapore. A modified version of the original Benchmarks® survey is used to gather data. The modified survey is shorter and also gathers data in about four additional

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areas: culturally adaptable, strategic planning, employee development, and inspiring commitment.

Early indications from the Asia sample indicate "confronting people" (acting resolutely when dealing with problems) is more of a skill of managers in Asia than in the first study, which primarily included North Americans. Not having managers skilled in confronting people can create problems in the organization because performance or behavioral issues are allowed to persist and can have an impact on the other employees and the quality of work. The level of importance for both groups was fairly low.

"Respecting individuals' differences" appears to be more important and of higher skill in the Asian sample. It is a fair assumption that as more and more organizations have global operations, such a skill will be important. This finding suggests that managers in Asia are more prepared to face this coming challenge.

The first study found "leading employees" (directing and motivating people) important for success but not a skill. In the current study, early data suggest a similar finding in Asia. This finding is of concern, given that many current research reports indicate leadership—or some variation of it—as the crucial skill for being successful in the current market.

Leslie, J. B., & Chandrasekar, A. (2009). Managerial strengths and organizational needs: A crucial leadership gap. In R. B. Kaiser (Ed.), *The perils of accentuating the positive* **(pp. 27–38). Tulsa, OK: Hogan Press.**

This chapter explores gaps between current and desired levels of leadership to address basic questions about the current state of leadership and the viability of strengths-based development. How widespread is the gap between the strengths leaders possess and the strengths needed for their organizations to succeed? Is this strictly a U.S.-based problem—or is it also a problem in other countries? Which do our data suggest managers focus on to enhance corporate performance—strengths or weaknesses?

Data reported in this article were collected between January 2006 and December 2007. The sample is largely male (69 percent), and the average age is 42. Data were collected using a modified version of Benchmarks® (Lombardo, McCauley, McDonald-Mann, & Leslie, 1999), a 360-degree tool that assesses the characteristics of successful executives.

Comparing the rank order of the importance of competencies to the amount of skill managers report possessing reveals a major disconnect. Only five of the competencies rated as above average in importance (*Resourceful, Participative management, Being a quick learner, Doing whatever it takes*, and *Respecting individuals' differences*) were also rated as above average in current skill level. In other words, the majority of the competencies rated important for organizational success are not the leadership skills at which their managers perform the best. The biggest leadership gaps are in the areas of *Strategic planning, Managing change, Employee development*, and *Inspiring commitment in employees*. More striking, *Leading people*—the competency rated most important for organizational success—was ranked a poor 13th out of the 20 skills. These data also show that many leaders' strengths are not in areas that are considered

most important for success. *Putting people at ease*, for example, was rated important for success by only 52 percent of the managers surveyed, yet skill in this area was ranked as above average among these 20 skills (ninth).

To determine whether these trends in the leadership gap are common across cultures or confined to the U.S., we analyzed comparable survey data collected from 953 managers working in Singapore and 442 managers working in India. Compared to the U.S. data, strikingly similar gaps in the *importance* and *skill* were found in both countries. Comparing the *importance* that managers in Singapore and India placed on the 20 leadership competencies, we found a considerable overlap with the competencies that U.S. managers rate as important. Specifically, eight out of the top ten leadership competencies listed for the U.S. are the same across the three countries.

The next question we considered was the amount of *skill* managers in Singapore and India report compared to managers in the U.S. We found that seven of the top ten strengths in the U.S. sample were also in the top ten strengths in the samples from Singapore and India. With ratings of importance and strengths fairly similar across the three countries, it is evident that a clear and perhaps universal gap exists in terms of leadership capacity.

There are two major implications from this survey study. First, an exclusive focus on strengths in leadership development is insufficient. Second, closing the leadership gap requires that we do a better job of aligning the focus of development with organizational needs.

Leslie, J. B., & Taylor, S. (2005). "The negatives of focusing only on the positive."
Leadership in Action, 24(6), 17–18.

This study is based on information from the Benchmarks® database collected between June 2000 and November 2004 from some 438,000 individuals: about 40,000 managers; 362,000 of their peers, direct reports, and other coworkers; and 36,000 of their direct bosses. More than 7,500 organizations, many of them Fortune 500 companies, are represented in the database. Using these data, CCL researchers have investigated several important underlying questions, including which leadership skills and perspectives managers' bosses consider to be critical for organizational success, and how strong coworkers consider managers to be in these critical skills and perspectives.

The bosses chose the following eight competencies most often: Ability to lead employees (chosen by 89 percent of the bosses), Resourcefulness (81 percent), Decisiveness (75 percent), Managing change (69 percent), Straightforwardness and composure (68 percent), Building and mending relationships (67 percent), Doing whatever it takes (67 percent), and Employing a participative management style (64 percent).

To determine workers' perceptions of managers' actual strengths, CCL researchers analyzed the ratings managers received from their peers, direct reports, and bosses on all sixteen Benchmarks® dimensions—nearly 400,000 ratings.

The findings were startling. The bosses' ranking of competencies most critical for organizational success was markedly different from the coworkers' ratings of managers'

strengths. In fact, the competencies that bosses identified as most important for their organizations' success and presumably for the success of the managers in those organizations were in many cases not rated by coworkers as managerial strengths.

Thirteen of the sixteen skills were rated below the statistical average for the database. That is, on the whole, the assessed managers were not considered strong in these thirteen areas. Moreover, none of the eight skills that bosses rated as above average in importance received above average ratings as a managerial strength.

It's fine to play to one's strengths until something in the leadership structure, the organization, or the environment changes. Then new skills may be required. The bottom line is that people can learn, grow, and change. However, not everyone can be the best at all tasks. Strengths and talents can be developed, nurtured, and honed. But the approach of focusing only on developing strengths not only limits human potential but may also limit an organization's best performance to areas that are not the most important for the organization's future success.

Leslie, J. B., & Wei, R. (in press). Assessing leadership and the leadership gap. In M. Rothstein & R. Burke (Eds.), *Self-management and leadership development.* **San Francisco: Edward Elgar Ltd.**

This chapter serves as a tool for anyone who is eager to learn about leadership and wants to take responsibility for developing their skills through experience. The chapter begins with research describing a survey of 2,200 managers from the U.S., India, and Singapore. The results show critical importance both now and in the future for all leaders to be effective in *leading people, strategic planning, managing change, employee development, inspiring commitment, balancing personal life and work,* and *decisiveness.*

The second part of the chapter focuses on tools, techniques, and strategies that individuals can use in order to increase the likelihood that they can learn to develop through their experiences. More specifically, this section of the chapter provides strategies and tools to help close leadership gaps, gives advice about whom to seek help from during this developmental phase, and allows each person to begin to craft his or her own development plan. This material is organized around two questions: What do you need to learn, and how can you close the leadership gap? The first part invites the reader to do a self-assessment of his or her own leadership gap and choose a developmental goal. The second outlines three principles of development and five strategies and tools to close the leadership gap:

Principles of development
1. Development is a process.
2. Experience drives development.
3. You are responsible.

Strategies and tools to close leadership gaps
1. Seek challenging assignments.
2. Establish developmental relationships.

3. Enhance your ability to learn from experience.
4. Reflect on your experience.
5. Solicit ongoing feedback.

Leslie, J., Chandrasekar, A., & Wei, R. (2008). *Understanding the leadership gap.*
   Unpublished research report. Greensboro, NC: Center for Creative Leadership.
This report is organized around the answers to four questions which address
perceptions of leadership effectiveness.
- What leadership skills and perspectives are critical for success?
- How strong is the leadership in these critical skills and perspectives?
- How aligned is leadership strength with what is considered important?
- What factors lead to potential derailment of leaders?
Results are presented overall, by country, by industry, and by organizational level. Data
for this comes from 2,200 managers from India, Singapore, and the U.S. The managers
were employed in the IT and finance sectors. The results are presented in eight key
findings:
1. Leaders from the East and West *strongly agree* on which skills are essential for
   effective leadership in today's ever-changing business environment.
2. Leaders consider people skills (leading employees, strategic planning, inspiring
   commitment) and leading the organization skills (managing change,
   resourcefulness, and being a quick learner), followed by doing whatever it takes,
   most important now and in the future.
3. Leaders think about effective leadership similarly regardless of their country,
   industry, or organizational level.
4. Leaders lack the skills they need to be effective. This research surfaced a
   surprising challenge—the presence of a skills gap. Leaders in both the East and
   West report an overwhelming lack of preparedness.
5. Leaders in India and the IT sector consider themselves to be least prepared.
6. A universal leadership gap exists. Leaders from the East and West report
   shortfalls between the required leadership capacity and the forecasted leadership
   capacity.
7. Though they are considered critical for effective leadership, translating vision
   into realistic business strategies, managing change, and encouraging employees
   to develop in their career are perceived to be the weakest skills—biggest
   leadership gaps—across the leadership bench.
8. Good news: Leaders do not see critical challenges to their careers or development.
   Derailment is not a cause for concern.

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APPENDIX

Terms Used in This Guide

CCL Administrator	An individual at the Center for Creative Leadership who is identified as the client's contact during the implementation of a survey.
Client Administrator	An individual in the client's organization who has the primary responsibility for guiding the assessment process within the organization and monitoring the status of completed surveys.
Competency	Competencies are persistent characteristics, skills, or behaviors that are causally related to effective performance in a job or role.
Correlation	A number, resulting from statistical analyses, that indicates the strength of a relationship between two measures.
Derailment	A derailed manager is one who, having reached the general manager level, is fired, demoted, or considered to be in a career plateau.
Face Validity	Whether the tool looks like it measures what it is intended to measure.
Factor Analysis	A set of statistical approaches to grouping items or variables into categories known as factors.
Graphic Display	Charts or graphs that provide a visual portrayal of numeric data.
Item Parameter Tables	Tables of numbers that represents the discrimination of the item or the degree to which the item discriminates between persons in different regions on the latent continuum.
Leadership Gap	A shortfall between current and forecasted leadership capacity.
Mean	Arithmetic average of a set of data points or numbers.
Norms	A method for comparing a group's results with the average ratings from a relevant comparison group.
Raters	Individuals who complete LEADERSHIP GAP INDICATOR.
Reliability	Consistency of the measure, or the degree to which an instrument measures the same way each time it is used under the same condition with the same subjects.
Report	The summary of the organizations results.

Response Scale	A set of response choices for responding to items or questions on the survey.
Scale	A group of items or questions that have logical and empirical coherence.
Standard Leadership Model	The name given to a set of leadership competencies that have been researched as part of a global framework for leadership effectiveness.
Survey	The online questionnaire that all raters complete and submit for scoring.
Validity	The extent to which the tool measures what it is intended to measure; the appropriateness of the inferences made about scores from an instrument.

E-mails

The LEADERSHIP GAP INDICATOR data collection and scoring system is contained on an Internet-based system. Once a client places an order for LEADERSHIP GAP INDICATOR and provides CCL with the rater names and e-mail addresses, all communication with raters are automatic and take place via e-mail. This appendix contains the complete set of all e-mails possibly seen by raters and client administrators in the course of their LEADERSHIP GAP INDICATOR use.

E-mail to Raters

Subject: Leadership Gap Indicator Survey

Chris Sample:

Your organization has selected you to participate in a survey designed to identify development opportunities for leaders continued growth and success. You and your peers will be asked to rate the relative importance of a specific set of competencies for success now and in the future and then assess the degree to which the critically selected skills are being demonstrated.

Managers at your level have been selected to participate in this survey. Your individual responses will be strictly confidential. The Center for Creative Leadership will process completed surveys and will create an aggregated organizational report.

You begin the survey process by accessing the Web site shown below. It takes approximately 20 minutes to complete the survey. Please complete the survey by 10 June 2009.

https://www.datasltn.com/wss/CCLLeadershipGAPHome.cfm

Your Confidential User ID: 5876682
Your Confidential Password: CP79MC

If you have questions regarding this feedback process, please contact <<name provided by client administrator>>.

If you experience any difficulty connecting to the Internet, please contact your organization's help desk. Our experience is that the vast majority of access problems are due to security measures within our clients' systems. For any other technical problems, please contact Technical Support by sending an email to support@datasltn.com. We can be reached toll free by telephone within the United States at 877 477 1416. If you are calling from outside the United States, use +1 952 746 5747.

If you receive "Access Denied" or "Page Not Displayed" message when accessing the Web site, please contact our Technical Support. There are browser settings that may need to be adjusted on your computer so that you can fully access secured sites.

Reminder E-mail to Raters

Subject: REMINDER: Leadership Gap Indicator Survey

Message Body:
#part_first_name# #part_last_name#:

This is a reminder that your Leadership Gap Indicator Survey has not yet been received.

If you did complete the survey, please note that after responding to all the questions, you must select the "Submit" button to send your survey. If you log out without submitting the survey, your answers are saved but not received by the Center for Creative Leadership's data center. It will not be possible to change your responses once you have selected the "Submit" button.

Please access the Web site to complete and submit your survey by #variable date based on invitation date#.

#https://URL#

Your Confidential User ID: #login_id#
Your Confidential Password: #password#

If you have questions regarding this process, please contact <<name provided by client administrator>>.

If you experience any difficulty connecting to the Internet, please contact your organization's help desk. Our experience is that the vast majority of access problems are due to security measures within our client's systems. For any other technical problems, please contact Technical Support by sending an e-mail to support@datasltn.com. We can be reached toll free by telephone within the United States at 877 477 1416. If you are calling from outside the United States use 952 746 5747.

If you receive "Access Denied" or "Page Not Displayed" message when accessing the Web site, please contact our Technical Support. There are browser settings that may need to be adjusted on your computer so that you can fully access secured sites.

Low Response Rate E-mail to Client Administrator

Client Administrator:

The total number of people who have submitted the Leadership Gap Indicator is low despite reminders. To increase the number of responses, consider personally reminding your managers to submit their survey as soon as possible. Use a short message such as "This is a reminder about the Leadership Gap Indicator . If you have already completed the survey, thank you. If not, please complete and submit your responses as soon as possible. The deadline for completing the survey is Jun 04, 2009. Thank you very much for your time and effort. Your opinions are important to us."

You can check the status of your raters' surveys by returning to the Web site and choosing the "Survey Status" link on the Main Menu page. You can also review your list of Raters by choosing the "Rater List" link. Due to our promise of anonymity, we cannot tell you specifically who has responded and who has not.

https://www.datasltn.com/wss/CCL_FEILogin.cfm?LangCode=EN

Your Confidential User ID: 5874383
Your Confidential Password: 8XTW4M

Client Administrator E-mail Alert that the Report is Ready

Client Administrator: Feedback Report(s) Available

Subject: Your Leadership Gap Indicator Report

Client Administrator:

An electronic copy of the Leadership Gap Indicator report is available for you to access, using the Web site listed below.   It will be available for 12 months.

#https://URL#

Your Confidential User ID: #login_id#
Your Confidential Password: #password#

If you experience any difficulty connecting to the Internet, please contact your organization's help desk. Our experience is that the vast majority of access problems are due to security measures within our client's systems. For any other technical problems, please contact Technical Support by sending an email to support@datasltn.com. We can be reached toll free by telephone within the United States at 877 477 1416. If you are calling from outside the United States use 952 746 5747.

If you receive "Access Denied" or "Page Not Displayed" message when accessing the Web site, please contact our Technical Support. There are browser settings that may need to be adjusted on your computer so that you can fully access secured sites.

Item Parameter Tables

Table 14

Item Parameters for India vs. Singapore Current Skill

Item	Reference Group									Focal Group								
	A	B1	B2	B3	B4	B5	B6	B7	B8	A	B1	B2	B3	B4	B5	B6	B7	B8
1	2.42	-2.92	-2.14	-1.55	-0.88	-0.10	0.60	1.62	2.50	2.75	-2.60	-1.86	-1.15	-0.74	0.06	0.68	1.73	2.80
2	2.14	-2.99	-2.18	-1.53	-0.83	-0.09	0.63	1.50	2.91	2.36	-2.83	-2.18	-1.62	-0.99	-0.21	0.43	1.40	2.73
3	1.62	-3.11	-2.10	-1.17	-0.45	0.33	1.09	1.95	3.17	2.08	-2.45	-1.77	-1.03	-0.48	0.29	1.01	2.00	3.00
4	2.17	-2.56	-1.82	-1.19	-0.58	0.11	0.82	1.65	2.60	2.54	-2.40	-1.65	-0.94	-0.47	0.19	0.83	1.77	2.91
5	2.07	-2.49	-2.03	-1.39	-0.90	-0.26	0.32	1.16	2.34	2.37	-2.56	-1.95	-1.32	-0.90	-0.30	0.33	1.20	2.54
6	1.89	-2.89	-1.90	-1.24	-0.65	0.09	0.76	1.73	2.86	2.00	-2.74	-2.07	-1.37	-0.73	-0.03	0.65	1.62	2.89
7	2.08	-2.77	-2.10	-1.30	-0.67	-0.05	0.69	1.61	2.76	2.35	-2.48	-1.90	-1.28	-0.76	-0.06	0.52	1.47	2.75
8	2.15	-2.60	-2.06	-1.38	-0.90	-0.29	0.23	1.09	2.23	2.23	-2.92	-2.22	-1.56	-0.99	-0.40	0.23	1.13	2.43
9	1.87	-3.03	-2.34	-1.55	-0.96	-0.21	0.41	1.25	2.41	2.06	-2.97	-2.36	-1.74	-1.20	-0.42	0.22	1.23	2.53
10	1.18	-3.10	-2.03	-1.10	-0.36	0.48	1.27	2.26	3.71	1.45	-3.05	-2.17	-1.42	-0.81	-0.07	0.61	1.78	3.14
11	2.48	-2.72	-2.04	-1.46	-0.80	-0.17	0.52	1.28	2.37	2.72	-2.72	-1.96	-1.33	-0.87	-0.19	0.52	1.45	2.59
12	2.30	-2.47	-1.84	-1.30	-0.70	-0.02	0.56	1.38	2.23	2.44	-2.65	-1.97	-1.36	-0.80	-0.08	0.64	1.50	2.69
13	2.27	-3.04	-2.19	-1.58	-0.89	-0.23	0.43	1.34	2.43	2.31	-3.18	-2.34	-1.75	-1.27	-0.47	0.24	1.33	2.62
14	2.35	-3.12	-2.19	-1.59	-1.07	-0.47	0.12	1.06	2.16	2.37	-2.99	-2.30	-1.71	-1.05	-0.36	0.33	1.27	2.65
15	2.62	-2.74	-1.92	-1.29	-0.77	-0.18	0.46	1.30	2.38	2.82	-2.57	-2.01	-1.47	-0.94	-0.17	0.48	1.54	2.86
16	1.85	-3.23	-2.19	-1.48	-0.79	-0.19	0.40	1.31	2.60	2.47	-2.80	-2.03	-1.36	-0.99	-0.34	0.34	1.24	2.58
17	2.66	-2.18	-1.41	-0.79	-0.32	0.18	0.76	1.46	2.39	2.80	-2.07	-1.43	-0.90	-0.46	0.19	0.82	1.66	2.82
18	2.59	-2.28	-1.65	-1.05	-0.50	0.07	0.69	1.41	2.32	2.72	-2.23	-1.54	-0.95	-0.44	0.18	0.78	1.58	2.88
19	2.24	-2.89	-2.14	-1.54	-0.95	-0.33	0.28	1.16	2.29	2.21	-2.91	-2.46	-1.66	-1.12	-0.33	0.35	1.39	2.56
20	2.53	-2.40	-1.71	-1.17	-0.74	-0.16	0.44	1.24	2.31	2.78	-2.52	-1.69	-1.09	-0.72	-0.09	0.53	1.47	2.62

Note: Reference Group = India (N = 442); Focal Group = Singapore (N =); A = item discrimination; Bs = item thresholds.

Table 15

Item Parameters for India vs. U.S. Current Skill

Item	Reference Group									Focal Group								
	A	B1	B2	B3	B4	B5	B6	B7	B8	A	B1	B2	B3	B4	B5	B6	B7	B8
1	2.45	-3.09	-2.32	-1.73	-1.07	-0.29	0.41	1.41	2.28	2.58	-2.44	-1.97	-1.38	-0.86	-0.11	0.47	1.35	2.33
2	2.17	-3.15	-2.35	-1.71	-1.01	-0.29	0.43	1.29	2.68	2.22	-2.79	-2.16	-1.57	-1.12	-0.35	0.24	1.11	2.36
3	1.63	-3.27	-2.27	-1.35	-0.63	0.14	0.89	1.74	2.95	1.63	-3.02	-1.90	-1.07	-0.51	0.29	0.90	1.74	2.88
4	2.20	-2.73	-2.00	-1.37	-0.77	-0.08	0.61	1.44	2.38	2.32	-2.33	-1.65	-0.99	-0.51	0.13	0.64	1.32	2.46
5	2.09	-2.66	-2.21	-1.57	-1.08	-0.45	0.13	0.96	2.13	1.78	-2.91	-2.14	-1.55	-1.04	-0.43	0.05	0.93	2.14
6	1.91	-3.05	-2.07	-1.42	-0.84	-0.11	0.56	1.52	2.64	2.02	-2.93	-1.97	-1.16	-0.66	0.05	0.54	1.31	2.46
7	2.10	-2.93	-2.27	-1.48	-0.86	-0.24	0.49	1.40	2.53	1.87	-2.76	-2.21	-1.52	-0.96	-0.19	0.42	1.19	2.41
8	2.17	-2.77	-2.23	-1.56	-1.08	-0.48	0.04	0.88	2.01	1.63	-3.14	-2.62	-2.13	-1.64	-0.91	-0.37	0.41	1.69
9	1.89	-3.19	-2.51	-1.72	-1.14	-0.40	0.21	1.04	2.19	1.60	-3.79	-3.14	-2.28	-1.67	-0.89	-0.36	0.52	1.86
10	1.19	-3.26	-2.20	-1.28	-0.55	0.28	1.06	2.05	3.48	1.29	-2.94	-2.14	-1.40	-0.87	0.00	0.56	1.40	2.87
11	2.51	-2.89	-2.21	-1.64	-0.98	-0.36	0.32	1.08	2.15	2.50	-2.88	-1.97	-1.32	-0.95	-0.30	0.37	1.18	2.24
12	2.32	-2.64	-2.01	-1.48	-0.89	-0.22	0.37	1.17	2.01	2.19	-2.84	-2.16	-1.45	-0.94	-0.26	0.35	1.20	2.41
13	2.30	-3.20	-2.36	-1.76	-1.07	-0.42	0.24	1.14	2.21	1.84	-3.54	-2.74	-1.99	-1.35	-0.58	0.06	0.96	2.25
14	2.37	-3.28	-2.36	-1.77	-1.25	-0.66	-0.07	0.86	1.95	2.37	-2.78	-2.21	-1.60	-1.12	-0.42	0.14	0.91	2.14
15	2.65	-2.90	-2.09	-1.47	-0.96	-0.37	0.26	1.09	2.16	2.46	-2.60	-2.01	-1.34	-0.86	-0.18	0.45	1.25	2.48
16	1.87	-3.39	-2.36	-1.66	-0.97	-0.38	0.20	1.10	2.38	1.90	-3.21	-2.47	-1.80	-1.32	-0.61	-0.07	0.84	2.13
17	2.69	-2.35	-1.59	-0.97	-0.51	-0.02	0.56	1.25	2.17	2.34	-2.11	-1.39	-0.84	-0.43	0.19	0.71	1.41	2.39
18	2.61	-2.44	-1.83	-1.24	-0.69	-0.12	0.49	1.21	2.11	2.28	-2.15	-1.58	-0.97	-0.54	0.07	0.60	1.34	2.41
19	2.27	-3.05	-2.31	-1.72	-1.13	-0.52	0.09	0.95	2.08	1.65	-3.38	-2.75	-2.13	-1.56	-0.64	-0.11	0.86	2.22
20	2.56	-2.57	-1.88	-1.35	-0.92	-0.36	0.24	1.03	2.09	2.27	-2.26	-1.60	-1.09	-0.69	-0.08	0.55	1.27	2.32

Note: Reference Group = India (N = 442); Focal Group = U.S. (N = 805); A = item discrimination; Bs = item thresholds.

Table 16

Item Parameters for U.S. vs. Singapore Current Skill

	Reference Group								Focal Group							
Item	A	B1	B2	B3	B4	B5	B6	B7	B8	A	B1	B2	B3	B4	B5	B6	B7	B8
1	2.78	-2.77	-2.03	-1.33	-0.92	-0.14	0.48	1.52	2.58	2.58	-2.44	-1.97	-1.38	-0.86	-0.11	0.47	1.35	2.33
2	2.38	-3.00	-2.35	-1.79	-1.17	-0.40	0.23	1.19	2.51	2.22	-2.79	-2.16	-1.57	-1.12	-0.35	0.24	1.11	2.36
3	2.10	-2.62	-1.95	-1.21	-0.67	0.09	0.81	1.79	2.77	1.63	-3.02	-1.90	-1.07	-0.51	0.29	0.90	1.74	2.88
4	2.56	-2.57	-1.82	-1.13	-0.65	-0.01	0.63	1.56	2.69	2.32	-2.33	-1.65	-0.99	-0.51	0.13	0.64	1.32	2.46
5	2.40	-2.72	-2.12	-1.50	-1.08	-0.49	0.13	0.99	2.32	1.78	-2.91	-2.14	-1.55	-1.04	-0.43	0.05	0.93	2.14
6	2.02	-2.90	-2.24	-1.55	-0.91	-0.22	0.45	1.41	2.66	2.02	-2.93	-1.97	-1.16	-0.66	0.05	0.54	1.31	2.46
7	2.38	-2.65	-2.07	-1.46	-0.94	-0.25	0.33	1.26	2.53	1.87	-2.76	-2.21	-1.52	-0.96	-0.19	0.42	1.19	2.41
8	2.26	-3.08	-2.39	-1.73	-1.17	-0.59	0.03	0.92	2.22	1.63	-3.14	-2.62	-2.13	-1.64	-0.91	-0.37	0.41	1.69
9	2.08	-3.13	-2.52	-1.91	-1.38	-0.61	0.03	1.02	2.31	1.60	-3.79	-3.14	-2.28	-1.67	-0.89	-0.36	0.52	1.86
10	1.46	-3.21	-2.34	-1.60	-1.00	-0.27	0.41	1.57	2.91	1.29	-2.94	-2.14	-1.40	-0.87	0.00	0.56	1.40	2.87
11	2.75	-2.88	-2.13	-1.51	-1.05	-0.38	0.32	1.24	2.37	2.50	-2.88	-1.97	-1.32	-0.95	-0.30	0.37	1.18	2.24
12	2.47	-2.82	-2.14	-1.54	-0.98	-0.27	0.44	1.29	2.46	2.19	-2.84	-2.16	-1.45	-0.94	-0.26	0.35	1.20	2.41
13	2.33	-3.34	-2.51	-1.92	-1.44	-0.66	0.05	1.12	2.40	1.84	-3.54	-2.74	-1.99	-1.35	-0.58	0.06	0.96	2.25
14	2.40	-3.15	-2.47	-1.89	-1.23	-0.55	0.13	1.06	2.43	2.37	-2.78	-2.21	-1.60	-1.12	-0.42	0.14	0.91	2.14
15	2.85	-2.73	-2.18	-1.64	-1.12	-0.36	0.28	1.33	2.64	2.46	-2.60	-2.01	-1.34	-0.86	-0.18	0.45	1.25	2.48
16	2.49	-2.96	-2.20	-1.54	-1.17	-0.53	0.15	1.04	2.36	1.90	-3.21	-2.47	-1.80	-1.32	-0.61	-0.07	0.84	2.13
17	2.83	-2.24	-1.61	-1.08	-0.65	-0.01	0.62	1.45	2.59	2.34	-2.11	-1.39	-0.84	-0.43	0.19	0.71	1.41	2.39
18	2.75	-2.40	-1.71	-1.13	-0.63	-0.01	0.58	1.37	2.65	2.28	-2.15	-1.58	-0.97	-0.54	0.07	0.60	1.34	2.41
19	2.23	-3.07	-2.62	-1.83	-1.30	-0.51	0.15	1.18	2.34	1.65	-3.38	-2.75	-2.13	-1.56	-0.64	-0.11	0.86	2.22
20	2.81	-2.69	-1.86	-1.27	-0.90	-0.28	0.33	1.26	2.40	2.27	-2.26	-1.60	-1.09	-0.69	-0.08	0.55	1.27	2.32

Note: Reference Group = U.S. (N = 805); Focal Group = Singapore (N = 953); A = item discrimination; Bs = item thresholds.

Table 17

Item Parameters for India vs. Singapore Needed Skill

	Reference Group								Focal Group							
Item	A	B1	B2	B3	B4	B5	B6	B7	B8	A	B1	B2	B3	B4	B5	B6	B7	B8
1	2.35	-3.26	-2.03	-1.51	-1.23	-0.74	-0.37	0.54	1.67	2.77	-3.14	-2.21	-1.64	-1.25	-0.55	-0.14	0.76	1.75
2	2.34	-3.21	-1.94	-1.37	-1.11	-0.56	-0.06	0.90	2.10	2.97	-2.83	-1.91	-1.45	-1.11	-0.44	0.05	0.89	1.86
3	1.77	-3.43	-2.56	-1.86	-1.31	-0.59	0.11	1.10	2.38	2.06	-3.27	-2.53	-1.78	-1.36	-0.51	0.08	1.06	2.24
4	2.20	-3.41	-2.13	-1.52	-1.12	-0.71	-0.20	0.57	1.78	2.64	-2.95	-2.18	-1.75	-1.32	-0.55	0.05	0.84	1.90
5	2.45	-2.58	-1.75	-1.29	-0.93	-0.42	0.16	0.93	2.03	2.99	-2.68	-1.86	-1.29	-0.97	-0.32	0.10	0.95	2.01
6	2.02	-2.58	-1.75	-1.27	-0.95	-0.42	0.10	1.00	2.29	2.35	-2.70	-2.02	-1.40	-1.05	-0.45	0.04	1.00	2.28
7	2.14	-2.57	-1.91	-1.20	-0.88	-0.39	0.02	0.80	2.04	2.52	-2.70	-2.10	-1.50	-1.11	-0.51	-0.05	0.84	2.02
8	3.03	-2.52	-1.69	-1.05	-0.72	-0.26	0.11	0.90	1.89	3.04	-2.51	-1.80	-1.27	-0.99	-0.32	0.06	0.90	1.84
9	2.33	-2.50	-1.91	-1.47	-1.04	-0.40	0.05	0.80	1.94	3.05	-3.02	-1.79	-1.37	-1.02	-0.33	0.08	0.82	1.95
10	2.14	-2.87	-1.96	-1.59	-1.20	-0.41	0.05	0.96	2.06	2.47	-2.56	-1.80	-1.39	-1.11	-0.38	0.04	0.88	1.91
11	3.18	-2.89	-1.91	-1.23	-0.95	-0.50	-0.03	0.79	1.81	3.25	-2.65	-1.93	-1.49	-1.08	-0.41	0.03	0.83	1.84
12	2.72	-2.56	-1.88	-1.31	-0.81	-0.32	0.20	1.07	2.16	3.18	-2.53	-1.89	-1.31	-0.99	-0.36	0.22	1.02	2.05
13	2.86	-2.36	-1.92	-1.36	-0.92	-0.55	-0.07	0.72	1.81	3.34	-2.44	-1.77	-1.28	-0.97	-0.39	0.07	0.88	1.89
14	3.18	-2.53	-1.50	-1.11	-0.87	-0.54	-0.09	0.66	1.65	3.53	-2.21	-1.74	-1.32	-0.97	-0.41	0.01	0.72	1.81
15	2.95	-2.59	-1.73	-1.31	-1.01	-0.51	0.02	0.84	1.93	3.34	-2.65	-1.95	-1.37	-1.02	-0.36	0.09	0.97	1.99
16	2.25	-2.27	-1.67	-1.29	-1.02	-0.56	-0.03	0.84	2.00	3.39	-2.35	-1.75	-1.33	-1.08	-0.47	0.00	0.79	1.83
17	2.72	-2.76	-1.63	-1.39	-1.04	-0.75	-0.27	0.61	1.76	3.34	-2.82	-1.92	-1.52	-1.21	-0.49	-0.02	0.79	1.84
18	2.57	-2.79	-1.88	-1.66	-1.23	-0.75	-0.31	0.46	1.52	2.80	-2.67	-1.86	-1.53	-1.24	-0.55	-0.06	0.74	1.73
19	3.03	-2.65	-1.60	-1.33	-0.95	-0.36	0.14	0.96	2.01	3.12	-2.48	-1.75	-1.31	-0.97	-0.23	0.25	1.09	2.12
20	3.21	-2.36	-1.57	-1.23	-0.93	-0.50	-0.21	0.58	1.59	3.41	-2.63	-1.82	-1.31	-0.95	-0.51	-0.09	0.69	1.68

Note: Reference Group = India (N = 442); Focal Group = Singapore (N = 953); A = item discrimination; Bs = item thresholds.

Table 18

Item Parameters for India vs. U.S. Needed Skill

Item	Reference Group									Focal Group								
	A	B1	B2	B3	B4	B5	B6	B7	B8	A	B1	B2	B3	B4	B5	B6	B7	B8
1	2.48	-3.14	-1.97	-1.47	-1.20	-0.74	-0.39	0.48	1.56	2.64	-2.73	-1.90	-1.54	-1.15	-0.54	-0.19	0.56	1.46
2	2.46	-3.09	-1.88	-1.34	-1.09	-0.57	-0.09	0.82	1.96	2.50	-2.60	-1.90	-1.40	-1.10	-0.53	-0.11	0.72	1.72
3	1.86	-3.30	-2.47	-1.81	-1.28	-0.60	0.07	1.01	2.22	1.90	-2.94	-2.19	-1.55	-1.13	-0.26	0.27	1.13	2.24
4	2.32	-3.28	-2.06	-1.48	-1.10	-0.71	-0.23	0.51	1.65	2.70	-3.08	-2.17	-1.51	-1.01	-0.35	-0.01	0.65	1.53
5	2.58	-2.49	-1.70	-1.26	-0.92	-0.44	0.11	0.85	1.90	2.64	-2.35	-1.78	-1.32	-0.88	-0.27	0.14	0.89	1.79
6	2.12	-2.49	-1.70	-1.24	-0.94	-0.43	0.06	0.92	2.14	2.85	-2.56	-2.05	-1.43	-1.11	-0.44	0.03	0.78	1.76
7	2.25	-2.48	-1.85	-1.18	-0.87	-0.41	-0.02	0.72	1.91	2.29	-2.82	-2.02	-1.52	-1.10	-0.36	0.04	0.79	1.80
8	3.18	-2.43	-1.64	-1.03	-0.72	-0.28	0.07	0.82	1.77	3.04	-2.10	-1.62	-1.22	-0.91	-0.29	-0.02	0.61	1.46
9	2.44	-2.41	-1.86	-1.43	-1.02	-0.41	0.01	0.73	1.81	3.18	-2.40	-1.81	-1.29	-1.01	-0.35	-0.01	0.66	1.48
10	2.25	-2.77	-1.90	-1.55	-1.18	-0.43	0.01	0.87	1.92	2.41	-2.33	-1.88	-1.38	-1.00	-0.34	0.07	0.84	1.72
11	3.35	-2.78	-1.85	-1.21	-0.94	-0.51	-0.07	0.72	1.69	3.34	-2.58	-1.75	-1.28	-0.95	-0.41	-0.06	0.76	1.61
12	2.86	-2.47	-1.83	-1.28	-0.81	-0.34	0.16	0.98	2.02	2.88	-2.27	-1.75	-1.47	-0.94	-0.22	0.29	1.07	2.00
13	3.00	-2.28	-1.86	-1.33	-0.91	-0.56	-0.10	0.65	1.69	2.86	-2.51	-1.86	-1.36	-0.94	-0.40	0.07	0.79	1.65
14	3.34	-2.44	-1.46	-1.09	-0.86	-0.55	-0.12	0.59	1.53	3.28	-2.79	-1.94	-1.39	-0.95	-0.44	-0.08	0.62	1.49
15	3.10	-2.50	-1.69	-1.28	-1.00	-0.52	-0.02	0.76	1.80	3.32	-2.68	-1.93	-1.58	-0.98	-0.33	0.09	0.82	1.75
16	2.36	-2.20	-1.62	-1.27	-1.01	-0.57	-0.06	0.77	1.86	3.49	-2.33	-1.85	-1.35	-0.92	-0.39	-0.05	0.67	1.52
17	2.86	-2.66	-1.59	-1.36	-1.02	-0.75	-0.30	0.54	1.64	2.77	-3.04	-2.14	-1.57	-1.10	-0.52	-0.07	0.70	1.65
18	2.70	-2.69	-1.82	-1.61	-1.20	-0.75	-0.33	0.40	1.41	2.74	-2.85	-2.11	-1.51	-1.08	-0.60	-0.16	0.53	1.44
19	3.18	-2.56	-1.56	-1.30	-0.94	-0.38	0.09	0.88	1.87	2.94	-2.10	-1.54	-1.07	-0.75	-0.24	0.19	0.89	1.79
20	3.38	-2.28	-1.53	-1.21	-0.92	-0.52	-0.23	0.51	1.47	2.87	-2.68	-2.04	-1.52	-1.09	-0.50	-0.17	0.59	1.48

Note: Reference Group = India (N = 442); Focal Group = U.S. (N = 805); A = item discrimination; Bs = item thresholds.

Table 19

Item Parameters for U.S. vs. Singapore Needed Skill

Item	Reference Group									Focal Group							
	A	B1	B2	B3	B4	B5	B6	B7	B8	A	B1	B2	B3	B4	B5	B6	B7	B8
1	2.91	-3.02	-2.14	-1.60	-1.22	-0.56	-0.17	0.68	1.63	2.64	-2.73	-1.90	-1.54	-1.15	-0.54	-0.19	0.56	1.46
2	3.12	-2.73	-1.85	-1.41	-1.09	-0.46	0.01	0.81	1.74	2.50	-2.60	-1.90	-1.40	-1.10	-0.53	-0.11	0.72	1.72
3	2.16	-3.14	-2.45	-1.73	-1.33	-0.52	0.04	0.97	2.10	1.90	-2.94	-2.19	-1.55	-1.13	-0.26	0.27	1.13	2.24
4	2.77	-2.84	-2.11	-1.70	-1.30	-0.56	0.01	0.76	1.77	2.70	-3.08	-2.17	-1.51	-1.01	-0.35	-0.01	0.65	1.53
5	3.15	-2.58	-1.80	-1.27	-0.96	-0.34	0.06	0.87	1.87	2.64	-2.35	-1.78	-1.32	-0.88	-0.27	0.14	0.89	1.79
6	2.47	-2.60	-1.96	-1.37	-1.03	-0.47	0.00	0.91	2.13	2.85	-2.56	-2.05	-1.43	-1.11	-0.44	0.03	0.78	1.76
7	2.65	-2.60	-2.03	-1.46	-1.09	-0.52	-0.09	0.76	1.89	2.29	-2.82	-2.02	-1.52	-1.10	-0.36	0.04	0.79	1.80
8	3.20	-2.43	-1.75	-1.24	-0.98	-0.34	0.02	0.81	1.71	3.04	-2.10	-1.62	-1.22	-0.91	-0.29	-0.02	0.61	1.46
9	3.21	-2.91	-1.74	-1.34	-1.01	-0.35	0.04	0.74	1.82	3.18	-2.40	-1.81	-1.29	-1.01	-0.35	-0.01	0.66	1.48
10	2.60	-2.47	-1.75	-1.35	-1.10	-0.40	0.00	0.80	1.78	2.41	-2.33	-1.88	-1.38	-1.00	-0.34	0.07	0.84	1.72
11	3.41	-2.55	-1.87	-1.45	-1.06	-0.43	-0.01	0.75	1.72	3.34	-2.58	-1.75	-1.28	-0.95	-0.41	-0.06	0.76	1.61
12	3.35	-2.44	-1.83	-1.29	-0.98	-0.38	0.18	0.94	1.91	2.88	-2.27	-1.75	-1.47	-0.94	-0.22	0.29	1.07	2.00
13	3.51	-2.36	-1.72	-1.26	-0.96	-0.41	0.03	0.80	1.76	2.86	-2.51	-1.86	-1.36	-0.94	-0.40	0.07	0.79	1.65
14	3.71	-2.14	-1.69	-1.29	-0.96	-0.43	-0.03	0.64	1.68	3.28	-2.79	-1.94	-1.39	-0.95	-0.44	-0.08	0.62	1.49
15	3.51	-2.56	-1.90	-1.34	-1.00	-0.38	0.05	0.89	1.86	3.32	-2.68	-1.93	-1.58	-0.98	-0.33	0.09	0.82	1.75
16	3.56	-2.27	-1.71	-1.30	-1.07	-0.48	-0.04	0.71	1.70	3.49	-2.33	-1.85	-1.35	-0.92	-0.39	-0.05	0.67	1.52
17	3.51	-2.72	-1.87	-1.48	-1.19	-0.51	-0.06	0.71	1.71	2.77	-3.04	-2.14	-1.57	-1.10	-0.52	-0.07	0.70	1.65
18	2.94	-2.58	-1.80	-1.49	-1.22	-0.56	-0.09	0.66	1.61	2.74	-2.85	-2.11	-1.51	-1.08	-0.60	-0.16	0.53	1.44
19	3.28	-2.40	-1.70	-1.29	-0.96	-0.25	0.20	1.00	1.98	2.94	-2.10	-1.54	-1.07	-0.75	-0.24	0.19	0.89	1.79
20	3.58	-2.54	-1.77	-1.28	-0.94	-0.52	-0.12	0.61	1.56	2.87	-2.68	-2.04	-1.52	-1.09	-0.50	-0.17	0.59	1.48

Note: Reference Group = U.S. (N = 805); Focal Group = Singapore (N = 953); A = item discrimination; Bs = item thresholds.

Table 20

Item Parameters for India vs. Singapore Important Now

Item	Reference Group							Focal Group						
	A	B1	B2	B3	B4	B5	B6	A	B1	B2	B3	B4	B5	B6
1	1.86	-3.88	-2.97	-2.44	-1.41	-0.35	0.80	1.98	-3.46	-2.63	-2.17	-1.21	-0.25	0.83
2	1.71	-4.74	-3.18	-2.18	-0.99	0.32	1.68	1.95	-3.28	-2.91	-1.95	-0.92	0.20	1.54
3	1.59	-4.01	-2.54	-1.60	-0.55	0.56	2.05	1.72	-3.18	-2.49	-1.58	-0.61	0.45	1.73
4	2.04	-3.38	-2.64	-1.74	-0.90	-0.03	1.05	1.86	-2.94	-2.57	-1.99	-0.89	0.07	1.18
5	2.03	-3.19	-2.28	-1.60	-0.63	0.33	1.56	2.18	-2.92	-2.08	-1.55	-0.62	0.35	1.56
6	1.83	-3.21	-2.46	-1.53	-0.59	0.44	1.72	1.88	-2.83	-2.16	-1.46	-0.53	0.53	1.89
7	1.89	-3.30	-2.49	-1.62	-0.91	0.15	1.39	1.75	-3.24	-2.79	-2.00	-0.93	0.01	1.38
8	1.98	-3.54	-2.30	-1.50	-0.63	0.43	1.64	2.18	-3.20	-2.45	-1.50	-0.59	0.35	1.47
9	2.08	-3.21	-2.46	-1.56	-0.78	0.16	1.22	1.63	-3.53	-2.91	-2.34	-1.01	0.12	1.55
10	1.76	-2.81	-2.02	-1.33	-0.48	0.42	1.54	1.66	-3.15	-2.41	-1.53	-0.70	0.28	1.43
11	2.44	-3.26	-2.36	-1.49	-0.65	0.28	1.37	2.42	-3.32	-2.65	-1.71	-0.69	0.26	1.38
12	2.18	-3.18	-2.18	-1.33	-0.37	0.60	1.78	2.03	-3.57	-2.50	-1.31	-0.35	0.69	1.99
13	2.36	-3.70	-2.51	-1.61	-0.85	0.16	1.21	1.91	-3.52	-2.63	-1.95	-0.93	0.20	1.56
14	2.09	-3.64	-2.78	-1.90	-0.99	0.00	1.19	2.11	-3.57	-2.63	-1.98	-1.04	0.09	1.26
15	2.30	-3.75	-2.46	-1.66	-0.63	0.37	1.42	2.51	-2.88	-2.23	-1.47	-0.59	0.40	1.69
16	2.04	-3.00	-2.16	-1.48	-0.64	0.34	1.46	2.32	-3.79	-2.28	-1.77	-0.76	0.24	1.41
17	2.48	-2.92	-2.01	-1.34	-0.63	0.24	1.23	2.48	-2.77	-1.97	-1.38	-0.64	0.28	1.38
18	2.49	-2.91	-2.29	-1.55	-0.85	-0.01	0.88	1.96	-3.45	-2.68	-1.77	-0.94	0.07	1.07
19	1.85	-3.46	-2.22	-1.49	-0.48	0.59	1.97	2.21	-2.60	-1.88	-1.21	-0.35	0.72	1.98
20	2.69	-2.74	-2.16	-1.41	-0.73	0.07	1.05	2.40	-2.88	-2.14	-1.64	-0.82	0.04	1.07

Note: Reference Group = India (N = 442); Focal Group = Singapore (N = 953); A = item discrimination; Bs = item thresholds.

Table 21

Item Parameters for India vs. U.S. Important Now

Item	Reference Group							Focal Group						
	A	B1	B2	B3	B4	B5	B6	A	B1	B2	B3	B4	B5	B6
1	1.74	-4.36	-3.39	-2.82	-1.72	-0.58	0.65	1.52	-4.21	-3.27	-2.57	-1.81	-0.75	0.54
2	1.60	-5.28	-3.62	-2.54	-1.26	0.13	1.59	1.61	-4.01	-3.43	-2.53	-1.21	0.02	1.42
3	1.48	-4.50	-2.93	-1.93	-0.79	0.39	1.99	1.13	-4.60	-3.09	-2.01	-0.75	0.58	1.96
4	1.90	-3.82	-3.03	-2.07	-1.17	-0.24	0.92	1.65	-3.53	-2.90	-2.33	-1.44	-0.25	0.78
5	1.89	-3.62	-2.65	-1.92	-0.88	0.14	1.46	1.89	-3.13	-2.28	-1.70	-0.75	0.29	1.47
6	1.71	-3.64	-2.84	-1.85	-0.84	0.26	1.63	1.70	-4.09	-2.59	-1.95	-1.01	0.09	1.39
7	1.77	-3.74	-2.87	-1.94	-1.18	-0.05	1.28	1.24	-4.87	-3.72	-2.62	-1.34	-0.16	1.42
8	1.85	-3.99	-2.67	-1.81	-0.89	0.25	1.54	1.58	-3.82	-2.56	-2.04	-1.03	-0.02	1.24
9	1.95	-3.65	-2.85	-1.88	-1.04	-0.03	1.10	1.21	-4.75	-4.55	-3.26	-1.94	-0.57	1.02
10	1.65	-3.22	-2.38	-1.63	-0.73	0.24	1.44	1.56	-2.80	-2.08	-1.58	-0.73	0.14	1.28
11	2.28	-3.70	-2.73	-1.81	-0.91	0.09	1.26	1.92	-3.22	-2.61	-2.12	-1.13	-0.04	1.28
12	2.03	-3.62	-2.55	-1.64	-0.61	0.43	1.70	1.91	-2.99	-2.31	-1.50	-0.50	0.55	1.77
13	2.20	-4.17	-2.90	-1.93	-1.12	-0.04	1.09	1.57	-3.89	-3.13	-2.44	-1.33	-0.15	1.25
14	1.95	-4.11	-3.19	-2.25	-1.27	-0.21	1.07	1.86	-3.35	-2.90	-2.35	-1.25	-0.29	1.11
15	2.15	-4.22	-2.84	-1.99	-0.88	0.19	1.31	2.19	-3.00	-2.21	-1.64	-0.72	0.29	1.45
16	1.91	-3.42	-2.52	-1.79	-0.89	0.15	1.36	1.82	-5.40	-3.08	-2.19	-1.16	-0.06	1.26
17	2.31	-3.33	-2.35	-1.65	-0.88	0.05	1.11	2.24	-2.55	-2.04	-1.56	-0.67	0.25	1.25
18	2.32	-3.32	-2.66	-1.86	-1.12	-0.22	0.73	1.87	-3.18	-2.54	-1.90	-1.07	-0.22	0.86
19	1.72	-3.91	-2.58	-1.81	-0.72	0.42	1.90	1.79	-3.10	-2.44	-1.72	-0.69	0.37	1.56
20	2.51	-3.14	-2.52	-1.72	-0.99	-0.13	0.92	2.34	-2.56	-2.08	-1.59	-0.79	0.02	1.07

Note: Reference Group = India (N = 442); Focal Group = U.S. (N = 805); A = item discrimination; Bs = item thresholds.

Table 22

Item Parameters for U.S. vs. Singapore Important Now

	Reference Group						Focal Group					
Item	A	B1	B2	B3	B4	B5	B6	A	B1	B2	B3	B4	B5	B6
1	1.86	-3.91	-3.01	-2.52	-1.50	-0.48	0.68	1.52	-4.21	-3.27	-2.57	-1.81	-0.75	0.54
2	1.83	-3.71	-3.32	-2.29	-1.19	0.01	1.43	1.61	-4.01	-3.43	-2.53	-1.21	0.02	1.42
3	1.61	-3.60	-2.87	-1.90	-0.86	0.27	1.64	1.13	-4.60	-3.09	-2.01	-0.75	0.58	1.96
4	1.74	-3.35	-2.95	-2.33	-1.16	-0.14	1.05	1.65	-3.53	-2.90	-2.33	-1.44	-0.25	0.78
5	2.04	-3.32	-2.43	-1.86	-0.87	0.17	1.46	1.89	-3.13	-2.28	-1.70	-0.75	0.29	1.47
6	1.76	-3.23	-2.52	-1.77	-0.78	0.35	1.81	1.70	-4.09	-2.59	-1.95	-1.01	0.09	1.39
7	1.64	-3.67	-3.18	-2.34	-1.20	-0.20	1.26	1.24	-4.87	-3.72	-2.62	-1.34	-0.16	1.42
8	2.04	-3.63	-2.83	-1.81	-0.84	0.17	1.36	1.58	-3.82	-2.56	-2.04	-1.03	-0.02	1.24
9	1.53	-3.97	-3.31	-2.71	-1.29	-0.08	1.44	1.21	-4.75	-4.55	-3.26	-1.94	-0.57	1.02
10	1.56	-3.57	-2.78	-1.84	-0.96	0.08	1.31	1.56	-2.80	-2.08	-1.58	-0.73	0.14	1.28
11	2.27	-3.75	-3.03	-2.03	-0.95	0.07	1.27	1.92	-3.22	-2.61	-2.12	-1.13	-0.04	1.28
12	1.90	-4.02	-2.88	-1.61	-0.58	0.53	1.92	1.91	-2.99	-2.31	-1.50	-0.50	0.55	1.77
13	1.79	-3.97	-3.01	-2.29	-1.20	0.01	1.46	1.57	-3.89	-3.13	-2.44	-1.33	-0.15	1.25
14	1.98	-4.02	-3.01	-2.33	-1.32	-0.11	1.14	1.86	-3.35	-2.90	-2.35	-1.25	-0.29	1.11
15	2.35	-3.29	-2.59	-1.78	-0.83	0.21	1.59	2.19	-3.00	-2.21	-1.64	-0.72	0.29	1.45
16	2.17	-4.25	-2.65	-2.10	-1.03	0.04	1.29	1.82	-5.40	-3.08	-2.19	-1.16	-0.06	1.26
17	2.32	-3.17	-2.31	-1.68	-0.89	0.09	1.26	2.24	-2.55	-2.04	-1.56	-0.67	0.25	1.25
18	1.83	-3.90	-3.07	-2.10	-1.22	-0.14	0.93	1.87	-3.18	-2.54	-1.90	-1.07	-0.22	0.86
19	2.07	-2.98	-2.21	-1.50	-0.59	0.56	1.90	1.79	-3.10	-2.44	-1.72	-0.69	0.37	1.56
20	2.24	-3.29	-2.50	-1.96	-1.09	-0.17	0.93	2.34	-2.56	-2.08	-1.59	-0.79	0.02	1.07

Note: Reference Group = U.S. (N = 805); Focal Group = Singapore (N = 953); A = item discrimination; Bs = item thresholds.

Table 23

Item Parameters for India vs. Singapore Important in the Future

Item	Reference Group							Focal Group					
	A	B1	B2	B3	B4	B5	B6	A	B1	B2	B3	B4	B5	B6
1	1.73	-3.72	-2.88	-2.58	-1.97	-0.88	0.41	1.82	-4.07	-3.34	-3.02	-1.89	-1.00	0.39
2	1.65	-3.43	-3.07	-2.31	-1.36	-0.22	1.37	2.17	-3.78	-2.81	-2.06	-1.23	-0.30	1.06
3	1.73	-5.05	-2.48	-1.76	-0.89	0.11	1.49	1.87	-3.00	-2.60	-1.90	-1.12	-0.14	1.13
4	1.65	-4.28	-3.06	-2.36	-1.59	-0.59	0.72	2.03	-3.49	-2.98	-2.45	-1.54	-0.49	0.64
5	2.03	-3.06	-2.30	-1.83	-0.87	0.08	1.45	2.39	-2.87	-2.40	-1.80	-0.95	-0.07	1.09
6	1.71	-2.85	-2.27	-1.68	-0.87	0.15	1.59	2.12	-2.62	-1.91	-1.40	-0.82	0.05	1.36
7	1.61	-3.34	-2.52	-1.79	-1.14	-0.28	1.23	1.73	-3.80	-3.16	-2.29	-1.37	-0.53	0.90
8	2.02	-3.07	-2.07	-1.55	-0.88	0.04	1.31	2.42	-3.63	-2.19	-1.59	-0.84	-0.07	1.08
9	1.76	-3.33	-2.47	-1.75	-1.05	-0.22	1.18	1.88	-3.32	-2.98	-2.11	-1.16	-0.31	1.00
10	1.50	-3.72	-3.16	-2.42	-1.39	-0.26	1.23	1.70	-3.14	-2.79	-2.22	-1.34	-0.48	0.84
11	2.05	-0.61	-4.42	-2.73	-1.38	-0.38	1.06	2.22	-3.76	-3.25	-2.49	-1.44	-0.41	0.79
12	2.14	-3.30	-2.61	-1.62	-0.73	0.30	1.63	2.20	-3.26	-2.43	-1.70	-0.74	0.22	1.50
13	2.17	-3.72	-2.71	-2.00	-1.31	-0.40	0.79	1.96	1.48	-4.79	-2.45	-1.31	-0.35	0.97
14	2.13	-0.57	-4.37	-2.21	-1.33	-0.39	0.95	2.16	-3.35	-2.90	-2.35	-1.46	-0.50	0.74
15	2.21	-3.68	-2.64	-1.85	-0.97	-0.11	1.24	2.69	2.19	-4.21	-1.86	-0.87	-0.07	1.24
16	1.89	-2.56	-2.32	-1.52	-0.93	0.03	1.36	2.32	-2.91	-2.52	-1.90	-1.03	-0.17	1.05
17	2.13	-3.77	-2.75	-2.19	-1.29	-0.39	0.95	2.41	0.84	-4.44	-2.17	-1.34	-0.38	0.87
18	2.03	-3.88	-3.06	-2.35	-1.64	-0.97	0.44	1.75	-3.78	-3.31	-2.58	-1.73	-0.73	0.55
19	1.96	-3.02	-2.35	-1.67	-0.78	0.07	1.41	2.40	-2.41	-1.92	-1.43	-0.63	0.19	1.41
20	2.43	-2.77	-2.55	-2.01	-1.32	-0.55	0.77	2.22	-3.31	-2.87	-2.37	-1.62	-0.74	0.56

Note: Reference Group = India (N = 442); Focal Group = Singapore (N = 953); A = item discrimination; Bs = item thresholds.

Table 24

Item Parameters for India vs. U.S. Important in the Future

Item	Reference Group							Focal Group					
	A	B1	B2	B3	B4	B5	B6	A	B1	B2	B3	B4	B5	B6
1	1.67	-4.06	-3.20	-2.88	-2.26	-1.12	0.21	1.63	-4.09	-3.38	-3.00	-1.99	-1.21	0.17
2	1.59	-3.77	-3.39	-2.61	-1.62	-0.44	1.21	1.89	-3.76	-2.82	-2.53	-1.24	-0.18	1.08
3	1.67	-5.45	-2.78	-2.03	-1.13	-0.10	1.34	1.52	-3.59	-2.90	-1.90	-1.02	-0.03	1.19
4	1.59	-4.64	-3.38	-2.65	-1.86	-0.82	0.54	1.49	-4.67	-3.74	-2.98	-1.85	-0.78	0.38
5	1.96	-3.39	-2.60	-2.11	-1.12	-0.13	1.30	2.11	-3.40	-2.41	-1.81	-0.92	0.05	1.21
6	1.65	-3.16	-2.56	-1.95	-1.11	-0.05	1.44	1.75	-4.22	-3.01	-2.51	-1.30	-0.22	1.19
7	1.56	-3.67	-2.82	-2.07	-1.39	-0.50	1.07	1.30	-4.29	-3.59	-2.66	-1.56	-0.47	1.02
8	1.95	-3.39	-2.36	-1.82	-1.12	-0.17	1.15	2.08	-3.30	-2.39	-1.97	-0.96	-0.21	0.82
9	1.69	-3.66	-2.77	-2.02	-1.29	-0.43	1.02	1.51	-3.82	-3.53	-2.88	-1.70	-0.60	0.79
10	1.45	-4.07	-3.49	-2.72	-1.65	-0.47	1.06	1.67	-3.24	-2.47	-1.93	-1.14	-0.32	0.90
11	1.98	-0.84	-4.79	-3.04	-1.64	-0.60	0.89	1.98	-3.53	-2.97	-2.59	-1.57	-0.54	0.82
12	2.06	-3.63	-2.92	-1.89	-0.96	0.11	1.48	2.18	-2.63	-2.24	-1.65	-0.66	0.37	1.58
13	2.09	-4.07	-3.02	-2.28	-1.57	-0.63	0.61	1.61	-4.45	-3.65	-2.81	-1.67	-0.52	0.77
14	2.06	-0.81	-4.74	-2.50	-1.58	-0.61	0.78	1.96	-4.02	-3.22	-2.62	-1.68	-0.58	0.68
15	2.13	-4.02	-2.95	-2.12	-1.22	-0.32	1.08	2.32	-3.79	-2.72	-1.79	-1.11	-0.05	1.10
16	1.82	-2.86	-2.62	-1.78	-1.18	-0.18	1.20	2.04	-4.18	-2.76	-2.12	-1.25	-0.20	1.06
17	2.05	-4.11	-3.06	-2.48	-1.54	-0.62	0.77	1.98	-3.23	-2.70	-2.24	-1.27	-0.41	0.86
18	1.96	-4.23	-3.38	-2.64	-1.91	-1.22	0.25	1.77	-4.21	-3.22	-2.81	-1.83	-0.82	0.28
19	1.89	-3.34	-2.64	-1.94	-1.02	-0.14	1.25	2.12	-3.01	-2.18	-1.77	-0.90	0.00	1.01
20	2.35	-3.09	-2.85	-2.29	-1.58	-0.78	0.58	2.12	-3.19	-2.53	-2.19	-1.39	-0.54	0.71

Note: Reference Group = India (N = 442); Focal Group = U.S. (N = 805); A = item discrimination; Bs = item thresholds.

Table 25

Item Parameters for U.S. vs. Singapore Important in the Future

Item	Reference Group							Focal Group						
	A	B1	B2	B3	B4	B5	B6	A	B1	B2	B3	B4	B5	B6
1	1.76	-4.43	-3.67	-3.33	-2.17	-1.25	0.19	1.63	-4.09	-3.38	-3.00	-1.99	-1.21	0.17
2	2.09	-4.12	-3.12	-2.35	-1.49	-0.52	0.88	1.89	-3.76	-2.82	-2.53	-1.24	-0.18	1.08
3	1.81	-3.32	-2.90	-2.18	-1.37	-0.35	0.96	1.52	-3.59	-2.90	-1.90	-1.02	-0.03	1.19
4	1.96	-3.82	-3.30	-2.75	-1.81	-0.72	0.45	1.49	-4.67	-3.74	-2.98	-1.85	-0.78	0.38
5	2.31	-3.18	-2.69	-2.08	-1.19	-0.29	0.91	2.11	-3.40	-2.41	-1.81	-0.92	0.05	1.21
6	2.05	-2.93	-2.18	-1.67	-1.06	-0.16	1.20	1.75	-4.22	-3.01	-2.51	-1.30	-0.22	1.19
7	1.67	-4.15	-3.48	-2.58	-1.63	-0.76	0.72	1.30	-4.29	-3.59	-2.66	-1.56	-0.47	1.02
8	2.34	-3.96	-2.47	-1.86	-1.08	-0.28	0.91	2.08	-3.30	-2.39	-1.97	-0.96	-0.21	0.82
9	1.82	-3.65	-3.30	-2.39	-1.41	-0.53	0.82	1.51	-3.82	-3.53	-2.88	-1.70	-0.60	0.79
10	1.64	-3.46	-3.10	-2.51	-1.60	-0.71	0.66	1.67	-3.24	-2.47	-1.93	-1.14	-0.32	0.90
11	2.14	-4.10	-3.58	-2.79	-1.70	-0.63	0.60	1.98	-3.53	-2.97	-2.59	-1.57	-0.54	0.82
12	2.12	-3.58	-2.72	-1.97	-0.97	0.01	1.34	2.18	-2.63	-2.24	-1.65	-0.66	0.37	1.58
13	1.90	1.32	-5.17	-2.75	-1.56	-0.57	0.79	1.61	-4.45	-3.65	-2.81	-1.67	-0.52	0.77
14	2.09	-3.68	-3.21	-2.64	-1.72	-0.73	0.55	1.96	-4.02	-3.22	-2.62	-1.68	-0.58	0.68
15	2.60	2.06	-4.57	-2.13	-1.11	-0.28	1.07	2.32	-3.79	-2.72	-1.79	-1.11	-0.05	1.10
16	2.24	-3.22	-2.82	-2.18	-1.28	-0.38	0.87	2.04	-4.18	-2.76	-2.12	-1.25	-0.20	1.06
17	2.33	0.66	-4.80	-2.45	-1.60	-0.61	0.68	1.98	-3.23	-2.70	-2.24	-1.27	-0.41	0.86
18	1.69	-4.12	-3.64	-2.88	-2.00	-0.96	0.36	1.77	-4.21	-3.22	-2.81	-1.83	-0.82	0.28
19	2.32	-2.70	-2.20	-1.69	-0.86	-0.02	1.25	2.12	-3.01	-2.18	-1.77	-0.90	0.00	1.01
20	2.14	-3.64	-3.18	-2.67	-1.89	-0.98	0.37	2.12	-3.19	-2.53	-2.19	-1.39	-0.54	0.71

Note: Reference Group = U.S. (N = 805); Focal Group = Singapore (N = 953); A = item discrimination; Bs = item thresholds.

Acknowledgements