

SIGMA Assessment Systems

Talent Development

How to Measure Leadership Using the LSP-R™



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Can leadership be measured? This is a question that everyone from philosophers to business leaders and politicians have been asking for generations - and the answer is “yes.” Leadership may be an abstract concept, but it can be broken down into tangible dimensions, and these dimensions can be quantified and measured. SIGMA has done just that! To help you identify and develop your leaders, we’ve created a scientifically validated assessment called the [Leadership Skills Profile – Revised \(LSP-R™\)](#). In this guide, we’ll use the LSP-R as an example for walking you through:

1. How leadership can be defined
2. How leadership can be quantified
3. How leadership can be measured

We’ll also show you how you can use measures of leadership, like the LSP-R, to build a stronger, more robust team.

About the LSP-R

The LSP-R is a personality-based assessment of leadership skills that can be used to guide leadership development efforts. The test scores individuals on 50 leadership competencies including cognitive, personal, interpersonal, and senior leadership skills. Everyone who takes the LSP-R will automatically receive a Focus Report which includes a summary of scores and analysis of results, as well as templates and activities for creating a personalized development plan. The LSP-R can be used to support leadership development, succession planning, employee training, high potential programs, and more.

How is Leadership Defined?

To define an abstract concept like leadership, industrial-organizational psychologists can use tools like factor analysis. **Factor analysis** is a technique used to reduce a large number of variables down to a smaller number of factors. Each factor acts like a bucket for a group of similar variables. For example, a concept like “conflict management,” could be made up of factors like “self-control,” “communication,” and “emotional intelligence.” Each factor can then be composed of sub-factors, for example, “emotional intelligence” may include sub-factors like “empathy,” and “trust in intuition.”

In the LSP-R, the construct of “leadership” has been broken down into 50 leadership competencies. These competencies were arranged into four factors: Cognitive Leadership Skills, Interpersonal Leadership Skills, Personal Leadership Qualities, and Senior Leadership Skills (see Figure 1 below).



Figure 1. SIGMA's Leadership Framework; 50 leadership competencies grouped under four overarching categories.

In addition to psychometric data, there are a few other sources of information that can be used to define concepts like leadership. SIGMA, for example, also conducted an in-depth review of leadership competency literature to ensure that other academically validated definitions of leadership had been taken into account. We also looked at feedback from our clients to ensure industry/applied perspectives had been considered. Over the last 50 years, SIGMA has conducted over 4 million assessments, and worked with over 8,500 public and private corporations across North America. Having gleaned from such a large and diverse client base, you can be sure that SIGMA's definition of leadership will also work for you.

How is Leadership Quantified?

Quantifying leadership is a little different than defining leadership. Definitions of leadership are essentially a model, or a framework. In order to quantify that model or framework an assessment needs to be created. Furthermore, in order to make sure the assessment is a good quality assessment, it also needs to be validated.

Creating an Assessment

Assessments, or tests, consist of scales, which consist of items. **Items** are questions intended to measure a specific factor. **Scales** are sets of items that all measure the same factor. **Assessments or tests** are sets of scales that all measure factors of a particular construct. In order to quantify a construct like leadership you need to have an assessment with a scale for each factor, and multiple items for each sub-

factor. For example, to quantify SIGMA's definition of leadership we created the [LSP-R](#), an assessment with 228 items. There are multiple items for each of the 50 leadership competencies in our Leadership Competency Framework. There are three reasons why it is important to use multiple items for each competency:

1. Having multiple items allows each to be phrased slightly differently to capture more nuances of the competency being measured (higher construct validity)
2. Multiple items also have fewer points of discrimination (higher sensitivity)
3. Multiple items allow for measures of internal consistency (reliability; i.e., if someone scores high on one item they should score high on other items measuring the same competency as well)

Validating the Assessment

After an assessment has been made, it needs to be validated. This is important, as it ensures the assessment does a good job of measuring what it is intended to measure. One of the most common methods of validating assessments is to check for construct validity. Construct validity (i.e., how well a test measures what it is supposed to measure) is usually analyzed by comparing the test to other tests that measure similar constructs to see how highly correlated the two measures are. If, for example, SIGMA's [LSP-R](#) is highly correlated with other tests that measure leadership, it is likely that leadership has been accurately defined (even if it has been defined differently, i.e., using other factors).

Another method of construct validation is to analyze the correlation between an individual's score on an assessment, and their actual performance. This allows test developers to see how well their measure predicts actual outcomes. This particular type of measure is called **predictive validity**. When validating SIGMA's LSP-R, researchers looked at correlations with earlier revisions of the leadership assessment, as well as correlations with organizational citizenship behaviours (demonstrating strong character and concern for the collective) and counterproductive workplace behaviours (those which negatively impact the office environment). As predicted, relevant leadership competencies showed positive correlations with organizational citizenship behaviours and negative correlations with counterproductive workplace behaviours. The LSP-R also showed strong correlations with previous revisions of the leadership assessment. Therefore, you can be confident that this test does a good job of measuring leadership the way it says it does.

A Note on Timelines

In test development, the definition and quantification of a psychological construct go hand-in-hand. You can't do one without the other (at least not if you're going to use a scientifically robust approach). The reason why these two processes go hand in hand, is that numerical measures are used to create and validate the definition of the construct. You cannot first create a model or framework, then come up with a test to measure it. Instead, measures are developed to quantify constructs, and based on the results, a model is made.

How is Leadership Measured?

Now that we have defined and quantified leadership, the final step in the measurement process is to actually measure – in other words, to administer the assessment. This can take a few different forms. Most leadership assessments are now available online. SIGMA's [LSP-R](#) can be completed on our online platform in just 25 minutes. The benefit of online assessments is that results are also usually analyzed by a computer. This often means that they are available immediately upon completion of the assessment, like the Focus Report is for the LSP-R (check out this [sample report](#)). Digital reports make the documentation, storage, and transfer of information much easier and more accessible. They are also often more in-depth and aesthetically appealing than manually generated reports, because analyses can be pre-programmed, and designs can be standardized.

How to Use Measures of Leadership

Measures of leadership can be used in a variety of contexts and for a variety of purposes. SIGMA has worked with both public and private corporations, governments, police forces, post-secondary institutions, the army, etc. Schools are using leadership measures in their classes, as are sports teams and other team-based organizations. In these contexts, leadership assessments can be used to:

- Identify leadership potential
- Pinpoint strengths
- Highlight opportunities for growth
- Support development programs
- Support succession planning
- Support teambuilding workshops
- Inform the hiring process
- Inform decisions around promotion
- Inform role distribution and task-allocation

For more information about how the LSP-R can be used to support processes like succession planning, team development, and more, go to the [Resources](#) tab on our website and check out SIGMA's free Assessment Guides.

SIGMA Can Help

Ready to start incorporating leadership measurement into your employee development processes? Take a look at the [LSP-R](#). Our flagship leadership assessment can help you prepare your team for tomorrow. If you have questions, [contact us](#) for more information. We're always happy to speak with you.



Speak with one of our experts. We're always happy to chat!

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