



How to Calculate ROI for Assessments

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Introduction

Anytime an organization considers the possibility of using formal assessment instruments, especially when those assessments are new to the organization, one question that quickly comes up is, "What's the Return on Investment (ROI)?"

In order to provide meaningful data that will make it through the numbers people intact, you first need to do a bit of homework. When done properly, the answers to the ROI question can be both surprisingly accurate and frequently startling.

First, it's critical that you are clear about which of several possible success factors you're going to track, because each criterion leads to the use of a different formula. You need to understand what you're trying to achieve in your particular circumstances because your goal will determine which formula would be most appropriate to use. With that in mind, here are the four most common criteria and the circumstances where each is most commonly used. The ROI formula for each is then listed below.

Criteria 1: The value of better hiring decisions (increased workforce productivity). Use this approach when you would like to use assessments to improve the quality of your new hires so that, over time, your workforce is increasingly populated by people who are a better 'fit' for your jobs, i.e. they're more productive and cause fewer problems (such as absenteeism, lower output, slow learning times, etc.)

Criteria 2: The value of increased staffing efficiency. This includes recruitment performance measures such as "time-to-hire" and "time-to-become productive". Use this approach when your goal is to make your hiring process more efficient, thereby lowering the costs associated with the recruitment function.

Criteria 3: The value of reduced turnover. Use this one when your goal is to reduce the rate of turnover in jobs where you believe your current rate is unnecessarily high. For whatever reasons, some jobs typically have higher turnover rates than others, so you want to have a good idea of how much adding assessments will help you before you launch.

Criteria 4: The value of avoiding a 'bad hire'. This objective is most common in work settings where a single 'bad hire' could cost you a great deal before you're aware of the problem and have a chance to fix it. Examples include retail businesses which have problems with employee theft or health care occupations where an unscrupulous employee could cause lawsuits. In these cases the addition of an assessment to screen out 'bad apples' may very well be worth the extra cost.

In any given situation one, two, three or all four of these measures may be appropriate. Whatever you decide, it is essential that you identify your criteria before you begin and take whatever steps are necessary to establish a suitable baseline. In the event that using the assessments creates financial value beyond your original business case, that's great -- you can get even more credit.

The following formulae are based, in part, on Estimating the Financial Value of Staffing-Assessment Tools, by Charles Handler, PhD and Steven Hunt, PhD, Workforce, March 2003.

Be a Hero, Do the Math!

To begin an ROI analysis, you'll first need to have a reasonable understanding of what the costs (investment) will be on your part. Costs for assessments typically fall into two categories: initial setup costs and ongoing or 'per usage' fees. Both kinds can vary widely depending on the nature, purpose and design of the instruments, the types of jobs that are being measured, the types of information already available, how expensive it will be to generate additional information you will need, etc. As with anything else, it's best to shop around and compare.

Since many companies do not track data at the level needed to conduct this kind of analysis, you may need to settle for something that is 'good enough' initially, with the idea that you can revisit it later if needed. It's also possible you may want to reconfigure your formulae as you proceed because of insights gained along the way. That said, you do need to begin somewhere. The best approach usually is to start with the four success criteria previously discussed and use the formula listed for each one.

The formula for calculating the ROI for this objective is listed below and looks more complicated than it really is.

Formula #1 – "The value of better hiring decisions"

Improved performance (in \$) = [(N) (T) (Zx) (rxy)] – [(N) (Cy) (SR) + Su]

Where: **N** = Hires: the number of people hired per year due to growth and turnover for the position for which you are using the new assessment tools.

T = Tenure: The average number of years that employees work in that job. Indicate tenure using decimal values (e.g. if the average tenure is 9 months, set this value at .75)

Zx = The Value of High Performance: The difference in revenue generated by high vs. low performing employees. If you don't have actual figures you can use 40% of the average employee salary, which is common.

Rxy = Increased Hiring Effectiveness: An estimate of how much the use of assessment tools will improve the quality of hiring decisions. Effectiveness ranges from 0 (if you were do random hiring, which no one does) to 1.0 (which would be a perfect hire every time, and no one does that either). You can use the values for each selection method as listed in Table 1. Obviously you can and should adjust the 'cost' figure to match your own unique situation.



Table 1: Effectiveness and Cost for Various Selection Methods

Selection Method	Effectiveness	Cost
Random Hiring	0.0	0.0
Unstructured Interview	0.02	\$50.00
Structured Interview	0.10	\$75.00
Knowledge/Skills Tests	0.15	\$50.00
Honesty Tests	0.15	\$25.00
Talent Measures: Workstyle and/or Personality	0.15	\$75.00
Talent Measures: Ability	0.25	\$75.00

Cy = Per Usage Cost: How much the use of new assessment tools will increase the cost of evaluating candidates. Rough cost estimates can also be drawn from Table 1. If you want to change the cost estimates for interviews to better match your situation, be sure to include both the time/cost of the recruiters and the time/cost of the hiring managers.

SR = Selection Ratio: The number of candidates you typically assess before making a hiring decision, which is usually somewhere between 3 and 10. If you don't have your own figure, you can use 5.

Su = Setup fee: What you will have to spend to set up the assessment process for the position for which you will begin using assessments

Here's an example:

Suppose you are looking at adding talent assessments to the selection process you are currently using to hire assistant managers for your chain of retail stores. You hire an average of 25 assistant managers per year; they stay for an average of 3 years; you pay them an average salary of \$35,000; you currently use structured interviews; you interview an average of 5 candidates for each opening, and your vendor charges you \$5,000 to set up the talent assessment process.

Your ROI for adding talent assessments would then calculated as follows:

$$\begin{aligned}
 & [(25) (3) (14,000) (.25 - .10)] - [(25) (75) (5) + 5,000] = \text{Improved Performance (\$)} \\
 & \quad \quad \quad \$157,500 \quad \quad \quad - \quad \quad \quad \$14,374 \quad \quad \quad = \quad \quad \quad \$143,125
 \end{aligned}$$

This gives you an ROI of close to 10X! $\frac{143,125}{14,375} = 9.95$

Think this figure is too high? Think again - reports of returns like this are very common. Note: this formula does NOT include any provision for the reduced absenteeism typically associated with hiring people who are a better fit for your jobs! If we were to include it, the ROI would be even higher!



Ready for another one? Try this:

Formula #2 – “ROI produced by reduced turnover”

Many assessment tools are specifically designed to help organizations reduce turnover. When designed and used properly, these tools can reduce turnover by at least 10% and, in many cases, much more than that. As you will see from the following example, the lowered costs associated with reduced turnover can make the use of such assessments very attractive from a financial perspective.

$$\text{Value of Reduced Turnover} = \frac{[(N) (TR) [\frac{(TF) (VP)}{2}] + HC] (Rxt) - (Cy) (SR) (N) + Su}{2}$$

Where: **N** = Hires: the number of people hired per year due to growth and turnover for the position for which you are using assessment tools.

TR = Annual Turnover Rate: the percentage of the workforce that currently leaves each year due to turnover.

TF = Average Time to Fill: The average number of weeks required to fill a vacant position.

VP = Value of Performance: An estimate of the cost of the annual revenue generated by employees in this position. This is commonly set at 2.5 times the average employee salary.

HC = Hiring Cost: The average cost associated with hiring an employee. This includes time spent by recruiters and managers locating, screening and interviewing employees, the time and expense invested in training new hires, and any associated costs such as orientation and lower-than-average productivity for the first 90 days of employment. Most industry estimates place a minimum value on this at about \$3,000 (for an entry level semi-skilled new hire) and the figure goes up substantially as you move up the org chart. For supervisors, managers, and technical staff the figures range 1/2 to 1 1/2 times annual salary and for executives it can be 3-7 times annual salary.

Rxt = The decrease in turnover that will result from the use of assessment tools.

Cy = Cost per usage fee: How much the use of new assessment tools will increase the cost of evaluating candidates. Assessments designed to reduce turnover typically range between \$50 and \$400 per candidate.

SR = Selection Ratio: The number of candidates you typically assess before making a hiring decision, which is usually somewhere between 3 and 10. If you don't have your own figure, you can use 5.

Su = Setup fee (for that position): What you will have to spend to set up the assessment process for the position for which you will begin using assessments.

Example: Let's stay with the same example we used in the first example (hiring assistant managers) – we'll use the same data plus some additional hypothetical figures. We'll assume your store chain has an annual turnover rate for assistant managers of 20%; it takes 1 month to hire a new assistant manager; assistant managers generate revenue at 2.5 times their annual salary (a common figure); it costs \$10,000 to each hire each assistant manager; it costs \$150 per assessment; you interview 5 candidates for each hire; we will get a 10% reduction in turnover, and the vendor charges you \$4,000 for the setup charges. Your ROI would look something like this:



$$\begin{aligned}
 \text{Reduced turnover costs} &= (25) (.20) \frac{[(4) (87,500) + 10,000]}{2} (.10) - [(150) (5) (25) + 4,000] \\
 &= (25) (.2) (185,000) (.01) - 22,750 = 92,500 - 22,750 = \$69,750 \\
 &= 69,750 / 22,750 \\
 &= 3.066
 \end{aligned}$$

This gives you an ROI of approx 3X your investment!

Formula #3 – “ROI from avoiding ‘bad hires’”

In some companies and industries, one of the biggest advantages of using assessments is the opportunity to significantly reduce the possibility of hiring employees who will directly undermine the company’s profitability through drug use, theft, vandalism or violence. This type of situation is most frequently encountered in retail and distribution work settings. The following formula estimates the savings resulting from using assessments designed to avoid hiring individuals who are likely to engage in this kind of destructive behavior:

$$\text{Saving due to assessment} = [(N) (CBH) (HA)] - (N) (Cy) + Su$$

Where: **N** = Hires: the number of people hired per year due to growth and turnover for the position for which you are using assessment tools.

CBH = Cost of Bad Hire. The total cost associated with hiring an employee who engages in theft, vandalism, etc. Whatever figure you use should include legal and security fees. If you don’t have any idea you can use \$7,500 which is a very conservative figure based on retail theft statistics.

HA = Percentage of ‘Bad Hires’ Avoided. The percentage of candidates screened out through background checks who would have engaged in destructive behavior if you had hired them. Industry statistics suggest that around 10% of background checks uncover something substantially negative about candidates. If we estimate that half these candidates would actually engage in destructive behavior, we can set this value at 5%

Cy = Assessment Cost. How much the use of assessment tools will increase the cost of evaluating candidates. Most ‘honesty tests’ cost between \$50 and \$150 per candidate so we will use \$50 unless you have a more accurate figure. NOTE: It is assumed that these

tests are conducted fairly late in the hiring process and are only used with candidates who might actually be hired.

Su = Setup fee: What you will have to spend to set up the assessment process for the position for which you will begin using assessments



Here's an example:

Suppose you manage a warehouse that stores home appliances manufactured by a large overseas company (dish washers, clothes washers, etc.) prior to delivering them to a variety of retail outlets. You have 200 employees and you hire about 30 each year (15% turnover). Because you typically lose some of your product before you detect a thief, you set the cost of a 'bad hire' at \$20,000. We'll use the suggested values for HA (5%) and Cy (\$50) and a setup fee of \$1,000.

$$[(30) (20,000) (.05)] - (30) (50) + Su = \text{Cost savings}$$

$$30,000 - 2,500 = \$27,500$$

So, in this case, we're looking at an ROI of 27,500 = or approx. 18X your 1,500 investment

Formula #4 – "ROI from reduced administrative costs"

In some ways the most visible short-term benefit of using assessment tools is the reduced administrative time spent screening candidates. The kind of cost savings is most typically associated with the use of relatively fast and inexpensive assessments for jobs with large annual hiring volumes and/or high levels of turnover. The following formula provides a very general estimate of the ROI provided by reducing administrative costs.

$$\text{Value of reduced admin} = [(N) (TC) (RT) (HC) (SR)] - [(Cy) (SR) (N)]$$

Where: **N** = Hires: the number of people hired per year due to growth and turnover for the position for which you are using assessment tools.

TC = Time Spent With Candidates: The average number of hours spent evaluating candidates who are NOT hired. This includes time placing ads, reviewing resumes, checking references, coordinating and conducting interviews, and holding related recruitment conversations, such as post-interview discussions.

(RT) = Average Cost of Recruiting Time. An estimate of the hourly cost of recruiters and hiring managers who spend time with unqualified candidates. An average cost for this factor might be \$50.00/hr.

HC = Hiring Cutoff: The percentage of people who will pass the assessment tool you use. The actual number will depend on a variety of factors, but you can set it at 50% for the purpose of this exercise.

Cy = Assessment Cost: The degree to which the use of new assessment tools will increase the costs associated with assessing candidates. Most reductions in administrative costs come from the use of relatively inexpensive 'honesty' prescreening instruments. An average cost for these might be \$25.

SR = Selection Ratio: The number of candidates you typically assess before making a hiring decision, which is usually somewhere between 3 and 10. If you don't have your own figure, you can use 5.

Su = Setup fee: What you will have to spend to set up the assessment process for the position for which you will begin using assessments



Here's an example of when you might use this formula:

Suppose you are looking to add an honesty test to your hiring process at a retail store where you have 350 employees. You hire 140 employees a year (40% turnover), you spend a total of 2 hours evaluating each candidate who is not hired, it costs you \$50/hr to pay the staff to do the screening, you hire 1/2 of the people who 'pass' the honesty test and it costs you \$25 to administer each test in addition to the \$1000 for the setup fee.

Your ROI would then be:

$$[(140) (2) (50) (.50) (5)] - [(25) (5) (140) + 1,000] = \text{Value of Reduced Administration}$$

$$35,000 \quad - \quad 18,500 \quad = \quad \$16,500$$

This gives you an ROI of not quite 90%. $16,500 = (.892)(18,500)$

How you'd like to get that kind of return in the stock market?

Conclusion

As you can tell from the examples listed above, depending on the specifics of your own unique circumstances, the addition of professional assessments to your hiring process has the potential to generate substantial cost savings for your organization. The ability to consistently produce these kinds of bottom-line results is one reason why the assessment industry has been growing at a rate of 30 – 40% a year for the last several years.