SAFETY WHITEPAPER

HIRING SAFE, DEPENDABLE AND PRODUCTIVE EMPLOYEES

WITH SECURE*FIT*

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INTRODUCTION

Hiring employees who work safely, come to work on time, work well with others and perform their job effectively is a key objective of any successful organization. Accomplishing this in a fast, accurate and cost effective manner is also critically important.

At Select International, we've been helping organizations hire safe, productive employees for more than 20 years. We've taken the experience, learning and research that comes from assessing millions of people each year and condensed it into a fifteen minute prescreening assessment, Secure*Fit*®.

This paper describes the research that went into Secure*Fit*, what type of employees should be assessed using Secure*Fit* and the type of results you can expect.

WHO IS SECURE*FIT* MEANT FOR?

Secure*Fit* was designed to be a short, easy-to-administer, accurate and fair method for screening candidates for a broad range of hourly positions. The factors measured in Secure*Fit* make it ideally suited for any jobs that require physical activity; from dock worker to orderly, from warehouse worker to miner. The reason that it is effective at accurately screening for such a wide range of positions is that it incorporates the key characteristics associated with success in almost any hourly job.

After conducting thousands of job analyses, hundreds of empirical studies, and listening to the feedback of hundreds of organizations, we distilled those factors most critical for making an accurate hiring decision into Secure*Fit*.

WHAT MAKES AN EMPLOYEE A SECURE*FIT*?

Our experience and research, as well countless other researchers, has led us to the conclusion that to be considered a 'dependable' employee, one needs to:

- Be Safe
- Be Productive
- Get along with others

In addition to these three core characteristics, employers want employees who:

- Come to work on time
- Stay with the organization

By providing fair, accurate and reliable measures of these critical factors, Secure*Fit* allows organizations to screen out candidates who are not likely to succeed and focus their time and energy on hiring those who are.

RISK FACTORS VS. COMPETENCIES

At its core, Secure*Fit* is designed as a powerful tool to help companies hire the 'right' person by avoiding hiring the 'wrong' one. To accomplish this, Secure*Fit* uses Risk Factors as opposed to more traditional assessments that focus on competencies. The difference, while subtle, is an important one. With competencies, the assumption is that the higher someone is on that competency the better they will be at whatever that competency measures. So, for instance, take a competency such as written communication. Someone at the lowest end of the scale is likely to have difficulty putting together sentences that are even understandable. The top end of the scale would be characterized by individuals

who are fluent, articulate and can communicate complex thoughts and emotions in a captivating manner. If you are hiring a writer, then you would want someone at the highest end of that scale, because higher is clearly better.

Risk factors, on the other hand, are useful when someone must meet a minimum threshold to even have the possibility of being successful on the job. For instance, in the example above, if our candidate with the captivating writing would turn over or behave impulsively, then he/she would not be a good hire. Risk factors capture these minimum standards that are necessary, but perhaps not sufficient for outstanding job performance. The key difference between competencies and risk factors is that with competencies, candidates scoring the highest are always considered the best. Risk factors measure the basic characteristics that make it possible to do the job – without engaging in negative or risky behaviors. These factors capture whether or not, a candidate has 'enough' of a given attribute to not behave in a manner that is risky to the organization.

So, for instance, Safety Risk describes how likely this individual is to engage in unsafe behaviors that may result in accidents to themselves or others. Risk factors make more sense than competencies in this case because, as will be seen below, most accidents are caused by a small percentage of individuals. Therefore, past a certain point, being 'safer' doesn't necessarily translate into behavioral differences or fewer accidents. However, being overly risky, irresponsible and inattentive makes that individual a high risk of being in or causing an accident. By avoiding 'high-risk' individuals, an organization can significantly reduce accidents and improve the overall safety of their workplace.

Secure*Fit* measures the following seven risk factors:

- Safety Risk – Individuals who are high risk are more likely to engage in unsafe behaviors and/or be involved in safety incidents.
- Quality Risk – Individuals determined to be high risk in this area are more prone to make careless mistakes and have trouble following instructions.
- Impulsivity Risk – Individuals labeled as high risk in this area are less likely to be able to handle stressful situations and stay calm in a crisis.
- Dependability Risk – Individuals deemed a high dependability risk are unlikely to stay on task, follow through or consistently meet performance expectations.
- Attitude Risk – Individuals in this area who are high risk generally have a negative attitude and tend not to have strong interpersonal skills.
- Absenteeism/Tardiness Risk – Individuals who are a high absenteeism/tardiness risk are more likely to be late, miss or skip work.
- Turnover Risk – Individuals who are deemed a turnover risk have demonstrated a history of leaving companies and are unlikely to be a stable employee.

The following section describes these Risk Factors in more detail.

SAFETY RISK

In almost any context involving physical activity, safety is routinely rated as the single most important factor by job content experts (JCEs). No other aspect of work is more important than ensuring the health and well-being of oneself and others. While there are many factors that contribute to accidents, it's clear that some individuals are more likely to engage in high-risk, unsafe behaviors than others. For instance, a study by Knipling et al. found that 20% of drivers account for almost 80% of all driving accidents (Knipling, Boyle, Hickman, York, Daecher, Olsen, & Prailey, 2004). That 80/20 pattern is similar to what you find in other industries for negative behaviors including safety, as well as absenteeism, tardiness and workplace violence.

In addition to the health and welfare of the individuals involved, accidents are costly to the organization in terms of insurance, equipment and goods. Estimates vary, but according to the Occupational Safety and Health Administration (OSHA), for every $1 you spend on medical expenses for a worker's compensation claim you also incur $4 in indirect costs. Also, for every $1 of disability (lost time) expenses paid for a workers' compensation claim, OSHA estimates that you also incur between $2 and $10 in indirect costs. Considering that in 2007 the average workers' compensation claim was $46,800, the indirect cost would be over $200,000.

There are a number of reasons why some people are more likely to be involved in safety incidents than others. The research indicates that factors such as conscientiousness, locus of control and thrill seeking are all related to safety behavior.

Across occupations, acting responsibly is of utmost importance. Following the rules, remaining on-task, working hard and making well thought-out judgments all contribute to being a safe worker. A key factor that contributes to these behaviors is the trait of Conscientiousness. People who are highly conscientious are hard workers; they want to do the right thing and are more apt to follow rules and follow through. As such, they are much more likely to be safe employees (Clarke & Robertson, 2008; Wallace & Vodanovich, 2003). Individuals who are low in conscientiousness may disregard rules and, in some cases, actively rebel against authority. These behaviors are associated with higher traffic violations and unsafe work behaviors (Wallace & Vodanovich, 2003; Cellar, Nelson, York, & Bauer, 2001), such as speeding and running red lights.

Locus of Control is another personality trait that can differentiate people who act responsibly from those who do not. Individuals who have an internal locus of control believe they have control over what happens to them. As such, they are much more likely than individuals with an external locus of control to take action to prevent negative events (e.g., accidents, equipment failure). In contrast, individuals with an external locus of control perceive that many things are out of their hands, including safety issues, and they may not intervene or take action when needed (Spector, 1982; Jones & Wuebker, 1993).

Across a variety of occupations, locus of control has been found to predict accident risk, number of reported accidents and accident severity (Wuebker, 1986). In addition, individuals with an external locus of control had average accident-related medical costs 2.6 times higher than their internally-oriented counterparts (Jones & Wuebker, 1993).

Thrill seeking and recklessness have long been associated with unsafe behaviors (cf. Zuckerman & Link, 1968). Individuals who are more thrill seeking are more likely to drive fast, accelerate through yellow lights, take dangerous shortcuts, drive while intoxicated, use illicit drugs and abuse alcohol (Arnett, et al., 1997; Ashton, 1998; Paul & Maiti, 2007; Kilgore, Vo, Castro, & Hoge, 2006).

By combining conscientiousness, locus of control and thrill seeking, we are able to generate a strong, accurate index of an individual's likelihood of acting responsibly and safely on the job (Bell, O'Connell, Reeder, & Nigel, 2008; Hattrup, O'Connell, & Labrador, 2005). By applying this approach, we have seen significant increases in behavioral safety, as well, in one study at a large manufacturing firm, a reduction in actual accident rates of approximately 70% over a five year period (Bell, et al., 2008).

QUALITY RISK

Simply put, some individuals are more likely to make mistakes than others. There are a multitude of reasons for this, some of which are more cognitive, i.e., they just didn't understand or made a bad decision. In many settings, however, the primary reason is less a factor of lack of understanding or decision making and more because the individual just wasn't paying enough attention to details or following standard operating procedures. The warehouse worker who packs the wrong merchandise into the box and ships it to the customer was most likely not paying attention to what he was doing at the time vs. not understanding what he was supposed to do.

These errors result in rework, defects, poor service and returned merchandise. They are also, in many cases, hard to pinpoint to a single individual and go unnoticed until it's too late.

Two of the factors discussed above in relation to Safety Risk, namely Conscientiousness and Locus of Control, are also related to Quality Risk. In addition, a more refined and focused measure of attention to detail, that has been developed and researched over the past 10 years is included in the measure of Quality Risk (O'Connell, 1997).

Research into this index consistently demonstrates that there is a significant and meaningful relationship between performance on this measure and ratings by supervisors on factors such as quality awareness, following instructions and overall performance (O'Connell, 1997; Hattrup, et al., 2005).

IMPULSIVITY RISK

Individuals who are high risk in terms of Impulsivity, tend to be more volatile, unpredictable and less adaptable to change.

Working with other people, working in environments where safety hazards are prevalent and being under pressure to meet productivity goals can be stressful. Individuals who have difficulty managing stress effectively, or who have a tendency to act impulsively are more likely to respond to the demands of the job in a manner that can significantly increase the likelihood of injury to themselves or others (Kilgore, et al., 2006; Clark & Robertson, 2005; O'Connell, 1999).

Individuals who manage stress effectively tend to remain calm and collected; those who do not may lose their ability to think rationally and instead may act inappropriately for the situation. Stress Tolerance not only impacts the manner in which an individual reacts to stressful situations, but also their attitudes towards the job in general. Those who are more easily stressed may find the work arduous and unpleasant, ultimately resulting in burnout and turnover. Additionally, individuals who are easily stressed out may not interact effectively with others, whether colleagues or customers.

DEPENDABILITY RISK

While safety is a key concern for any job, it is also important to focus on factors that make an individual a dependable and productive employee. Dependable employees are those who can be counted on to do what is expected of them, to be productive and to meet deadlines and obligations.

Numerous meta-analyses have demonstrated that conscientiousness is a robust predictor of performance across a wide range of positions (Barrick & Mount, 1991). Conscientious individuals are known to be hardworking, detail-oriented, thorough, organized and careful. All of these traits are of great benefit to workers in nearly every situation imaginable. This is especially true for jobs that require individuals to work under limited supervision. It is important to find dependable employees who stay focused and follow through with their work without needing to be constantly monitored.

The measurement of Dependability overlaps to a large extent with both Safety and Quality. This is not unexpected. It is more a matter of how much different measurement components are combined and weighted than whether they are included or not. There are important distinctions, however. It is actually quite easy to find individuals who are unlikely to be involved in accidents and in general don't make a lot of mistakes, but who also are not particularly hard working and can't be depended on to meet deadlines and to follow through on obligations. Thus, Secure*Fit* strategically uses some overlapping measurement components to differentiate between these different risk factors.

ATTITUDE RISK

Many jobs require individuals to interact with other people, whether they are co-workers or customers. A person's attitude and demeanor impact the relationships that employees have with others. Individuals who are positive and optimistic are assets to the organization. Those who have negative dispositions tend to turn a critical eye to every situation and have difficulty building relationships, which could ultimately hurt the image of the organization.

The attitude of individuals within an organization ultimately has a significant impact, both positive and negative, on important organizational factors such as teamwork and customer service. Individuals who are cynical, skeptical and have a difficult time getting along with others, or respecting the opinions and ideas of others, challenge the ongoing culture of the workgroup or organization entirely. Our research in settings as diverse as heavy manufacturing, warehouse work and call centers indicates that attitude, and the ability to interact effectively with others, are significantly related to ratings of employee effectiveness, organizational citizenship, coaching and training of new employees, as well as customer service and sales (O'Connell & Reeder, 2008; O'Connell, Quist, & Reeder, 2009).

ABSENTEEISM RISK

Absenteeism refers to time an employee is not on the job during scheduled working hours, except for a

granted leave of absence, holiday or vacation time.

There are two costs associated with absenteeism:

- Direct costs – wages and benefits paid during the absence.
- Indirect costs – staffing, scheduling, re-training, lost productivity, diminished moral, turnover and opportunity cost.

Estimates of the cost of absenteeism range from $400 - $2,500 per day (CCH, Inc. 2002). Corporations in the United States are said to lose over $8,000 per person annually (Wilkerson, 1998).

As with anything there are multiple causes of absenteeism. Absenteeism, tardiness and turnover are often referred to as 'withdrawal behaviors,' and ultimately are the result of factors such as low levels of satisfaction with the job, with the supervisor, with pay, stress, poor working conditions, as well as personal and family issues (Hackett & Guion, 1985).

Despite the myriad of reasons that can contribute to poor attendance, some employees are much more likely to have consistently higher levels of absenteeism than others (Harrison & Price, 2003). Many of the same characteristics discussed earlier are related to absenteeism, including conscientiousness (Conte & Jacobs, 2003) and affectivity, both positive and negative (George, 1989; Iverson & Deery, 2001).

Individuals who tend to view events around them in a negative and cynical manner are more likely to have low satisfaction with their job and their supervisor and are therefore more likely to seek 'relief' from those negative feelings by not coming to work, by 'faking' an illness, etc. (Iverson & Deery, 2001; George, 1989).

Conscientiousness also clearly plays a role in that individuals who are more conscientious are more likely to feel obligated to come to work, even if they don't feel great, if they are unhappy or they have some personal problems because of their sense of duty and responsibility to their employer or their co-workers (Conte & Jacobs, 2003; Bernardin, 1997).

By using a combination of factors including general affectivity, conscientiousness, as well as past behavior measures of previous absenteeism and views of acceptable rates of absenteeism, Secure*Fit* provides a stable and strong predictor of an individual's risk of absenteeism and tardiness.

TURNOVER RISK

Turnover is one of the most frustrating problems that companies face. Employee turnover is extremely costly, whether it is involuntary turnover, such as terminations due to poor performance, or voluntary turnover, such as resignations. According to a conservative estimate by the Bureau of Labor Statistics, average turnover replacement costs employers $13,996 per employee (Mulvey, 2005). For an organization with 10,000 employees, a turnover rate of 30% would cost the company $14 million more than if the turnover rate was 20%. At first glance, these figures may seem high. However, when one factors in the cost of replacing the lost employee, the revenue lost while the job remained unfilled and the partial productivity during the first year of employment, the numbers start adding up.

Hiring qualified candidates through a fair and accurate selection system helps with reducing involuntary turnover, because the individuals who are hired tend to be more competent and able to perform the job and also tend to be better corporate citizens. However, focusing only on potential and ability may leave you with a person who can perform well in the job, but is not a good fit for the job or the organization, from a motivational standpoint. One of the paradoxes that many organizations face is that employees who are highly qualified have many options available to them, thus making it more likely for the employee to voluntarily leave the organization. In order to reduce both involuntary and voluntary turnover, it is critical to look at the complete profile of the individual, including their motivational fit to the job and organization.

As was the case with absenteeism and safety, certain applicants have a higher propensity for turnover than others. Some of these factors have to do with more underlying characteristics of the individual, such as those discussed earlier, and others are more situational in nature.

For instance, Barrick and Zimmerman (2005) found that new hires are less likely to leave the company if they: a) are referred by a current employee; b) have friends and relatives working in the organization; and c) have longer tenure in their previous job. Additionally, applicants with a history of short tenure in previous jobs are likely to repeat their past behavior and thereby are more prone to change jobs after a short period of time (O'Connell & Kung, 2007).

Interestingly, while individuals who are low in conscientious tend to have higher levels of turnover (Salgado, 2002), there is evidence that people who are very high in conscientiousness may experience higher levels of turnover (Timmerman, 2006). The reason for this is that in some jobs, e.g., call centers, individuals with high levels of conscientiousness put too much pressure on themselves to meet the demands of the job and end up burning out and leaving the organization.

Secure*Fit* builds on a strong research base to create a Turnover Risk index that will help identify individuals who are likely to leave the organization early in their tenure, e.g., in the first 90 days on the job. By avoiding hiring such individuals, organizations can significantly improve their overall retention rates. Our experience has shown that simply following such a strategy can help reduce early tenure turnover anywhere from 10% to 50% (O'Connell & Kung, 2007; Doverspike, Kung, O'Connell, & Durham, 2006; Lawrence, Doverspike, & O'Connell, 2004).

FIT FACTORS

Sercure*Fit* also includes five job characteristics fit factors:

- Variety
- Visible Contribution
- Task Significance
- Autonomy
- Feedback

These factors are consistent with the Job Characteristics Model set forth by Hackman and Oldham (1980). Their model and theory discusses the importance of examining the match, or fit, between a person's expectations and the characteristics of the actual job. According to their research, individuals whose expectations are not adequately met by the job are less likely to be satisfied, engaged and productive employees (Hackman & Oldham, 1980).

These fit factors are not included in any of the risk factor scores and are not considered when making an overall recommendation regarding the candidate. However, they give decision makers valuable information about a candidate's willingness to meet the requirements of the job. For instance, a 'recommended' candidate (in terms of risk factors) who strongly prefers a job with a lot of autonomy might not be the best fit for a job where he or she is being monitored all day and given specific instructions about what and how to conduct his/her work tasks. The task autonomy assessment information could be enough to screen out this employee for highly structured and monitored jobs.

PRELIMINARY RESEARCH FINDINGS

Initial data for Secure*Fit* was compiled from data (N=777) from applicants for various hourly positions in warehousing, distribution and manufacturing. Table 1 presents descriptive statistics from this data. Note that Risk Factor scores range from 1 to 10. In general, these results show that the Risk Factor means (M) are around their expected values and all scales have adequate variance (SD). Moreover, scales generally demonstrated acceptable internal consistency reliability.

Table 1. Descriptive Statistics for Secure*Fit* Risk Factors

Risk Factor	Min	Max	M	SD
Safety Risk	1	10	5.85	1.63
Quality Risk	1	10	5.65	1.83
Impulsivity Risk	1	10	5.63	1.91
Dependability Risk	1	10	6.10	1.63
Attitude Risk	1	10	5.67	1.92
Absenteeism Risk	1	10	5.49	2.01
Turnover Risk	1	10	6.21	1.65

BETWEEN-GROUP DIFFERENCES

Based on initial results, between-group differences were within acceptable standards based on criteria established by the OFCCP and EEOC. Table 2 shows the estimated impact ratios for the sample described here. Note that the impact ratios for minority groups are all within acceptable range according to 4/5th rule (EEOC) and 2-SD Z-test (OFCCP). In other words, there would be no evidence of adverse impact based on using Secure*Fit* in the screening process.

Table 2. Pass Rates and Impact Ratios

	Pass Rate if Not Recommend = Fail	Impact ratio	2-SD Z-test
Total	81.2%		
American Indian or Alaska Native	79.5%	0.99	3.16
Black/African American	86.7%	1.08	1.65
Hispanic/			
Latino	79.2%	0.99	3.20
White	80.0%		
Females	86.2%	1.07	1.60
Males	80.3%		

Note that similar results were also found when using Recommended w/Reservations as fail.

CORRELATIONS WITH SELECT ASSESSMENT® FOR MANUFACTURING(SAM)

The assessment content of Secure*Fit* has been partly adapted and distilled from a longer, more in-depth assessment, the Select Assessment for Manufacturing (SAM), which has proven to be a strong predictor of performance and has been used in a broad range of entry-level hourly positions, such as manufacturing, warehouse specialist/material handlers in consumer goods warehouses and various distribution centers. In a recent meta-analysis (O'Connell & Reeder, 2008) with data obtained from 27 empirical validation studies conducted from 1995 through 2007, results showed that the overall SAM predictor was correlated .53 with job performance. Thus, this provides strong evidence for SAM as a very strong predictor of job performance across a broad domain of job types and industries.

Initial results show Secure*Fit* to be strongly correlated with SAM scores. Specifically, the overall Secure*Fit* composite correlates r=.48 with the overall SAM composite. In addition, Secure*Fit* risk factors are strongly correlated to specific SAM competencies that have been consistent predictors of job performance. For example, Dependability Risk is strongly correlated (r=.57) with Work Ethic/ Conscientiousness, which has shown to be a reliable predictor of job performance (average correlation of .35 in SAM meta-analysis). In addition, the overall Secure*Fit* score is correlated .59 with the Risk/ Reliability Index from SAM, which was developed to eliminate applicants who have a higher likelihood of negative behaviors, such as higher risk for absenteeism, accidents, irresponsible behavior and other aberrant behaviors. The Risk/Reliability Index also consistently predicts job performance criteria (O'Connell & Reeder, 2008). Thus, these results show that Secure*Fit* is strongly correlated with a longer, more in-depth assessment that has demonstrated strong predictive validity across a broad domain of job types and industries. All together, these results provide convincing preliminary evidence to the utility of Secure*Fit* for screening out high-risk candidates from applicant pools.

SUMMARY AND CONCLUSIONS

By combining key risk factors and fit factors, Secure*Fit* provides a fair and accurate means of making better hiring decisions in a broad range of organizations. The assessment content of Secure*Fit* has been adapted and concentrated from longer, more in-depth assessments that have proven to be

strong predictors of performance. The results are consistent, fair and powerful. Including Secure*Fit* as part of the selection process can significantly increase productivity, quality and performance of the entire workforce.

LEGAL DEFENSIBILITY

As with all of its assessment systems, Select International developed Secure*Fit* to comply with professional standards as presented in the **Standards for Educational and Psychological Testing** (American Educational Research Association, American Psychological Association and the National Council on Measurement in Education, 1999), the **Principles for the Validation and Use of Personnel Selection Procedures** (Society for Industrial and Organizational Psychology, Inc., 2003) and the **Uniform Guidelines on Employee Selection Procedures**, 1978.

In addition, Secure*Fit* was designed to evaluate, assess and serve as a fair predictor of relevant job performance for members of various demographic groups, including all individuals identified as members of "protected groups," as defined by Title VII of the Civil Rights Act of 1964, Title I of the Americans with Disabilities Act of 1990, the Age Discrimination in Employment Act of 1978 and the Civil Rights Act of 1991.

Since 1993, Select International has developed and implemented selection and assessment solutions to help organizations identify, select and develop top talent. From entry-level to professional and executive, we provide innovative solutions for our clients across all industries, including manufacturing, healthcare, safety and customer service. In addition, we've conducted more than 200 empirical validation studies to evaluate the quality of our systems, and we continue to remain active in applied, professional research. Select International has also participated in a number of legal reviews by corporate attorneys, independent law firms, the Equal Employment Opportunity Commission (EEOC) and the Office of Federal Contract Control Programs (OFCCP). Selection and assessment systems developed by Select International have consistently met the standards and scrutiny of these reviews. By maintaining the highest standards in the industry and applying our expertise in employee assessment technology, we have become a trusted partner for selecting and developing great people.

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