

What Makes a Driver Road *Worthy*?

Authors: Amie D. Lawrence, Ph.D., Joshua S. Quist, M.S.,
Mavis Kung, Ph.D., Matthew S. O'Connell, Ph.D.

RESEARCH REPORT

Introduction

Finding, hiring and retaining quality commercial drivers represents a significant challenge to employers across the United States. In particular, the trucking industry is plagued by a precarious combination of high turnover¹ and a lack of qualified applicants.² Commercial driving companies are committing vast resources to the continual recruitment, screening and hiring of drivers. Furthermore, making a bad hire in this industry can mean more than just upset customers and a loss of money; it can also mean accidents and injuries. As a result, it is critical for employers to find and hire qualified drivers who are safe and dependable. Maintaining a stable driving fleet and retaining employees is important for organisations to stay competitive and profitable. How can a company accomplish this daunting task? The key is to understand what makes a good driver; what factors and/or personal characteristics should a driver possess? Select International has conducted an extensive review of the research in this unique industry to determine just that. We have applied our extensive experience in developing selection tools for all levels of jobs and types of industries to this one. In this paper, we will summarise our findings and share our recommendations for a selection solution targeted specifically to professional and commercial drivers.

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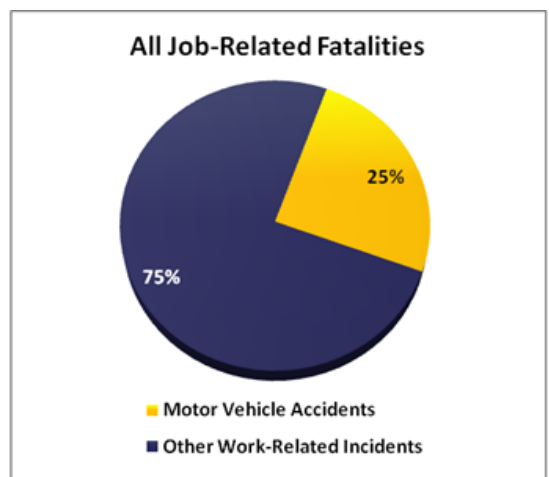
WHAT MAKES A GOOD DRIVER?

Characteristics of a good driver are best understood by determining what behaviours are expected of them while on the job. Knowing their performance expectations provides the framework needed to identify the factors that predict good driver behaviour. While not all drivers are the same in terms of their job duties, some fundamental behaviours are consistent across the industry. First and foremost, professional drivers are expected to know and follow all road safety rules. Secondly, drivers must strive to meet delivery schedules and the needs of their customers. Their job is to transport goods from one location to another within a predetermined period of time. In many cases, customers are dependent upon that on-time delivery for their own business, which makes timeliness a critical factor. Additionally, the driver is often the company's customer representative and plays a key role in ensuring customer satisfaction. Lastly, organisations want a stable workforce; they want drivers who like what they are doing and those that will stay with the organisation for an extended period of time. Drivers who enjoy what they are doing are more likely to stay in that position. Each of these topics is described in more detail below.

Safety

When it comes to drivers, safety is first. No other aspect of work is more important than ensuring the health and well-being of oneself and others. More so than in most other occupations, mistakes made by drivers can be fatal. Motor vehicle accidents are the leading cause of death among work-related incidents, contributing 25 percent to the total number of job-related fatalities.³ In addition to the health and welfare of the individuals involved, accidents are costly to the organisation in terms of insurance, equipment and goods.

Drivers are expected to behave safely, regardless of road conditions or delivery schedule. They must be adept at effectively identifying potential road hazards and adopting the most effective strategy to avoid incidents. Accidents may be the result of numerous errors, including: violation of rules, mistakes of judgment, inattention, inexperience and failure to recognise a crash threat.^{4,5}



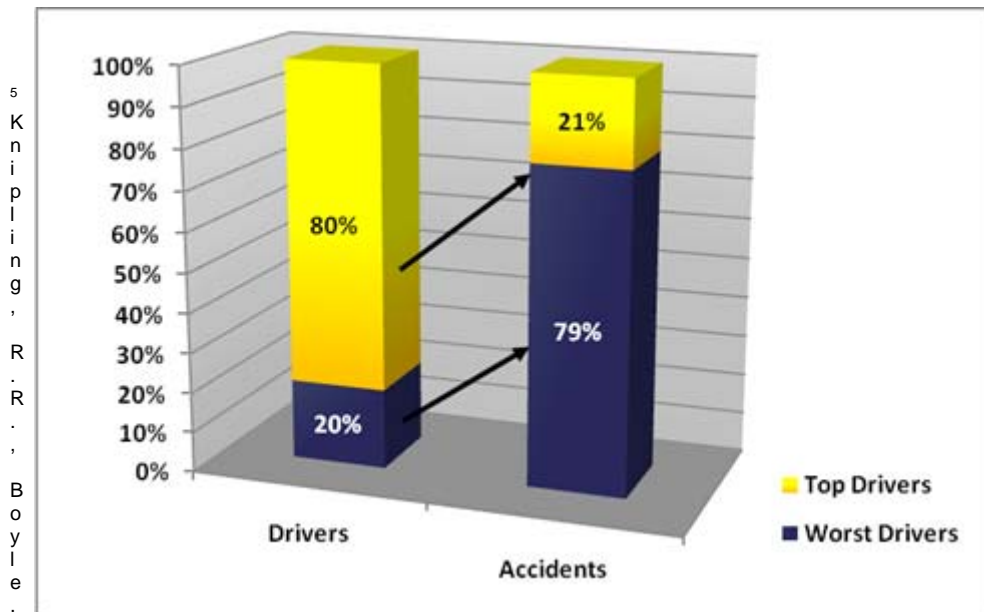
³Caird, J.K. (2004). The relationships between organisational and individual variables to on-the-job driver accidents and accident-free kilometres. *Ergonomics* (0014-0139), 47 (15), p. 1598.

“When it comes to drivers, safety is first. No other aspect of work is more important than ensuring the health and well-being of oneself and others.”

The Knipling, et al. study reports that 20 percent of drivers accounted for almost 80 percent of the accident incidents, indicating that a small number of drivers are responsible for a large majority of the negative events⁵. Preventing the hiring of that 20 percent could save companies a lot of money and heartache. So, the question remains – what makes a safe driver? How do you identify individuals who are likely to be part of that 20 percent? Our research has concluded that there are numerous risk factors and individual differences that

are associated with safe driving behaviour. Most broadly, these factors include experience and personal characteristics.

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Experience

Inexperienced drivers are at a greater risk for accident involvement than those with more experience.⁵ Tasks that require greater concentration by new drivers such as shifting gears, visually confirming gear placement or becoming acquainted with the vehicle’s mirrors, reduce cognitive resources that should otherwise be directed towards the surrounding environment. For more experienced drivers, these tasks are routine and automatic; consequently, the drivers are better able to concentrate on the road. Carrier safety managers commonly use experience as a hiring criterion (85 percent) and often set a minimum number of years of commercial driving experience (86 percent) as a requirement.⁵

More important than years of commercial driving experience, however, is driving history. Evidence suggests that past violations and accidents are robust predictors of future accident involvement.⁶ Although past incidents have been shown to predict future accidents (especially in the short-term), the relatively infrequent nature of accidents suggest that driving violations are better predictors of future behaviour. Miller and Schuster supported this assertion, and found that driving violations are fairly stable and predict accidents better than actual accidents.⁷ In this area, research suggests that good drivers are experienced and have a clean driving history.

Personal Characteristics

The answer to why some people are more likely to be involved in driving-related incidents than others is partially rooted in their personality. Numerous traits have been associated with driving-related incidents. We have collapsed and integrated the characteristics into two main factors: ***Acts Responsibly*** and ***Controls Emotions***.

Acts Responsibly

Across occupations, acting responsibly is of utmost importance; drivers are no exception. Following the rules, remaining on-task, working hard and making well thought-out judgments all contribute to being a safe driver. A key factor that contributes to these behaviours 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 drivers.^{8,9} Individuals who are low in conscientiousness may disregard rules and, in some cases, actively rebel against authority. These behaviours are associated with higher traffic violations, such as speeding and running red lights.¹⁰

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 feel like 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.¹¹

Responsible drivers are also more likely to make the right choice when they experience physical and mental fatigue on the road. Thirty-one percent of all truck driver fatalities and 58 percent of all single-truck crashes are fatigue-related. Although drivers may feel pressure from others to continue, they must act responsibly to make the right decision. Individuals who are responsible and careful will take the necessary preventative actions when symptoms of fatigue begin to emerge. As a result, responsible and conscientious drivers may be more likely to avoid fatigue-related incidents.¹²

Controls Emotions

Drivers experience a wide range of emotions while on the road, and with good reason. The nature of driving is often stressful with inconsiderate drivers, road construction, accidents, traffic and delivery schedules that can make an otherwise pleasant drive a nightmare. However, good drivers show tolerance for stress and frustration. Individuals who are angry and impulsive are more likely to respond to the rigors of the road with aggression, rude gestures and road rage, which could easily end in an unsafe or dangerous situation.^{13,14}

Drivers who have a high level of stress tolerance will 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 a driver drives, 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. In short, emotional control and stress tolerance are beneficial traits for drivers to possess.

Regarding personality traits and safe driving behaviour, model drivers should be conscientious and believe that they are in control of their own fate. They should possess the ability to control their emotions and tolerate stress when faced with difficult challenges. Individuals with these characteristics are less likely to be involved in driving-related incidents, which in turn preserves the health and welfare of the workforce and saves organisations the costs associated with these occurrences.

PRODUCTIVITY

Safety is a key concern for this industry, but it is also important to focus on tasks that make a driver productive. A qualitative analysis of government resources, research studies and job descriptions revealed several common duties and responsibilities for drivers. These duties often include, but are not limited to: vehicle inspection and preparation; loading, unloading, securing and documenting cargo; interaction and collaboration with customers and clients; collection of receipts and payments; documentation of daily activities; and driving the vehicle in a safe and courteous manner.^{15,16,17} In addition to safety, companies want drivers who can do these tasks accurately, efficiently and in a timely manner. It is important to identify the underlying competencies needed to be effective and find the drivers who possess them. Like safety, personal characteristics drive one's ability to be productive. Specifically, two main factors emerge: ***Acts Responsibly*** and ***Respects Others***.

Acts Responsibly

This trait factor was mentioned previously during the discussion of safety. However, the same underlying characteristics that make a driver safe can make them productive. Numerous meta-analyses have demonstrated that conscientiousness is a robust predictor of performance across a wide range of positions; drivers being included.¹⁸ Conscientious individuals are known to be hardworking, detail-oriented, thorough, organised and careful. All of these traits would be of great benefit to drivers in nearly every situation that is encountered. Drivers are often charged with the task of confirming that the correct products are loaded and delivered, and those who are conscientious and have a high attention to detail will be better equipped to handle these tasks. Since drivers often work under limited supervision, it is important to find a conscientious driver who will stay focused and follow through with their work without needing to be constantly monitored.

Drivers must also resist pressure to perform their duties unsafely in order to expedite a delivery. On-time delivery is an important aspect of a driver's performance; however, responsible drivers are less likely to find themselves short on time and rushed to make a delivery. If they do encounter this, they are likely to find a solution that does not put them or their delivery at risk.

Respects Others

A big part of how productive a driver is has to do with how they treat and act around other people. Although drivers may have little face-to-face contact with others while on the road,

they do have regular phone contact with supervisors, dispatchers and customers. The manner in which a driver interacts is important; attitudes and demeanor impact the relationships that drivers have with others. Drivers who are positive and optimistic are assets to an organisation. Those who have a negative disposition tend to turn a critical eye to every situation and have difficulty building relationships, which could ultimately hurt the image of the organisation.

The importance of **service orientation** cannot be emphasised enough; those with a strong service-orientation are helpful, thoughtful, considerate and cooperative. In instances where the driver is acting as the face of the organisation, they must represent the organisation professionally and be courteous at all times. Research has demonstrated that service orientation is positively related to commendations received among truck drivers.¹⁹ This is a difficult task for some, given that the driver must maintain this positive service-orientation even at the end of a long and stressful drive. Again, emotional control and stability is paramount.

One might believe that extraversion, or its opposite introversion, would be predictive of performance as a truck driver. Extraverts are social individuals who desire to interact with others; in contrast, introverts prefer to be alone and find social interactions taxing. Since the role of a professional driver often requires one to work alone, the belief is that extraverts would not make good drivers. However, Clarke & Robertson found that extraversion was only predictive of accidents among the general public (not for occupational accidents).⁸ While researchers continue to study this topic, it is clear that good drivers should have a positive disposition and service-orientation.

MOTIVATION

The previous sections have described the experience and personal characteristics that a good driver should have in order to be safe and productive. However, individuals who possess those characteristics may still lack the motivation to perform a particular driving role. When one's job preferences do not match those offered by the job (e.g., work schedule); he/she may not be a good fit for the position, even if the requisite experience and characteristics are present. A poor fit between the person and the job or the person and the organisation can lead to job satisfaction issues, which can then develop into tardiness, absenteeism and eventually turnover.

The commercial driving industry has been identified as particularly vulnerable to turnover, with reports of turnover rates ranging from 38 to 200 percent.¹ A two-year longitudinal study among truck drivers indicated that stress (e.g., psychological job demands, physical job demands, supervisor job demands, job control) and strain (e.g., need for recovery after work and fatigue) both contribute to voluntary turnover.²⁰ Keller reports that time at home is also an important determinant of turnover, especially among long-haul truck drivers.²¹

It is important to identify the job factors that can lead to dissatisfaction for all types of commercial drivers. Our research and knowledge of the industry suggests that there are **three main types of drivers**: *long-haul, short-haul and route*; and there are **four motivational factors** that can impact one's fit with a particular driving position: *work schedule, personal interaction, tolerance for long distances and time away from home*. The table below summarises the differences by driver type:

DRIVER TYPE BY MOTIVATIONAL FACTOR

	<u>Long-Haul</u>	<u>Short-Haul</u>	<u>Route</u>
Work Schedule	<i>Can be predictable or unpredictable, depends on the organisation</i>	<i>Can be predictable or unpredictable, depends on the organisation</i>	<i>Typically predictable from day to day</i>
Personal Interaction	<i>Little face-to-face interaction with customers or co-workers unless driving in teams</i>	<i>Some face-to-face interaction with customers and co-workers</i>	<i>Regular interaction with customers and some interaction with co-workers</i>
Tolerance for Long Distances	<i>Driving interstate long distances with few breaks/stops and long hours</i>	<i>Driving long distances, but may have a chance for more breaks/stops and shorter hours than long-haul</i>	<i>Driving more locally with many stops to make customer deliveries</i>
Time Away from Home	<i>Must be able to spend long periods of time away from home – up to weeks and months</i>	<i>May be required to spend some time away from home – typically days up to weeks</i>	<i>Typically not required to spend time away from home</i>

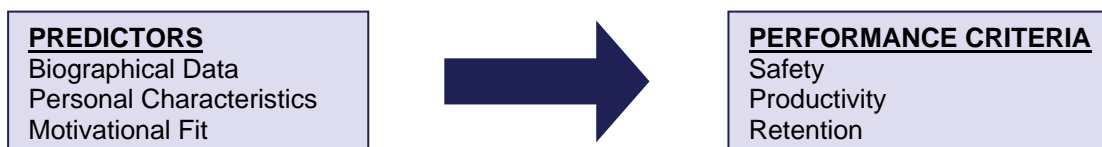
Given the unique nature of commercial truck driving, it is critical that selection systems identify those individuals who are not cut out for the rigors they may face. One way organisations can better understand which applicants will be most satisfied and motivated to perform is to evaluate the match between the applicant’s job and organisational preferences and those offered by the organisation. Other factors, such as job history, can also provide some indication of a person’s risk of turnover. Individuals who have several employment gaps and/or a history of moving from job to job (job hopping) are likely to leave the position.

Overall, we have identified a good driver as safe, productive and motivated. In each of these areas, there are individual characteristics that can help us to differentiate the good drivers from the bad. In the next section, we talk about how we recommend measuring these characteristics to ensure that the high risk (20 percent) drivers are screened out of the hiring process.

ARE YOUR CANDIDATES ROADWORTHY?

So, how can organisations select drivers who are safe, productive and motivated? Perhaps, more importantly, how can organisations reduce the likelihood of hiring risky drivers? Based on the extensive research, as discussed thus far, Select International has developed a simple, straightforward assessment to help identify candidates who have poor work attitudes, are at a greater risk for accidents and are more likely to turnover. Since driver performance is multi-faceted, multiple assessment methodologies are employed, which can be grouped into three main categories: **Biographical Data**, **Personal Characteristics** and **Motivational Fit**. The resulting assessment is a powerful tool that can be used to screen out the 20 percent of candidates that would cause 80 percent of the problems.

Each of the categories mentioned above is comprised of multiple competencies and characteristics that predict various aspects of critical, work-related outcomes, such as **safety**, **productivity** and **retention**. Taken together, these predictors result in a comprehensive assessment of driver performance.



Biographical Data

Biographical data questions ask information about one's background, interests and past experiences. It provides an avenue for an employer to collect and score such information in a structured and systematic way – traditionally gathered through an application form or interview.^{22,23} Based on the premise that past behaviour and attitudes predict future behaviour, the focus is to gather information about previous employment history and driving experience that would indicate their propensity for certain risk factors. Areas include:

- Traffic Violations and Accidents
- Attendance
- Job Stability
- Driving Behaviours

Personal Characteristics

The assessment also contains questions that measure a candidate's core personality profile. This provides insight into one's suitability to be a safe and productive driver. Candidates are presented with a series of statements to which they indicate their level of agreement. Candidates are then evaluated on three main factors that contribute to driver performance:

- Acts Responsibly: assesses whether a candidate is responsible, dependable, reliable and safety-oriented.
- Controls Emotions: assesses the likelihood of a candidate to employ ineffective coping strategies in stressful situations.
- Respects Others: focuses on how well a candidate respects and gets along with others.

ROADWORTHY		
BIOGRAPHICAL DATA	PERSONAL CHARACTERISTICS	MOTIVATIONAL FIT
<ul style="list-style-type: none"> ✓ Bio-data ✓ Accidents ✓ Violations ✓ Previous Employment 	<ul style="list-style-type: none"> ✓ Acts Responsibly <ul style="list-style-type: none"> • Responsibility • Safety-Orientation ✓ Controls Emotions <ul style="list-style-type: none"> • Stress Tolerance • Aggression/Hostility ✓ Respects Others <ul style="list-style-type: none"> • Positive Affectivity • Service-Orientation 	<ul style="list-style-type: none"> ✓ Person – Organisation ✓ Person – Job

Motivational Fit

An additional feature within the assessment measures a candidate's motivational fit with the job. The focus is not on whether the candidate "can do" certain aspects of the job, but instead targets the "will do" component. A variety of direct and indirect questioning techniques are employed to gather this information. The aforementioned motivational

factors are measured to provide information about how well candidates' preferences match the job and organisation of interest.

Risk Factors

The assessment described above takes approximately 15 to 20 minutes to complete. Integrating responses from all three sections, a report is automatically generated that contains essential information for organisations to make quick and accurate hiring decisions. In particular, it provides a list of risk factors and the candidate's risk-propensity, the candidate's responses to the motivational fit factors and final recommendations for the three main driver types. The recommendations are based on sophisticated algorithms that take into account a candidate's responses to all sections of the assessment.

More specifically, the assessment provides scores for each candidate on **Seven Risk Factors**. Candidate responses to bio-data and personal belief questions are integrated and scored to determine the individual's specific proclivity to become a high risk in these important areas:

1. **Accident & Violation Risk** – Individuals who are high risk are more likely to receive motor vehicle violations and/or be involved in traffic accidents or crashes.
2. **Road Rage & Aggression Risk** – Individuals determined to be high risk in this area are more likely to engage in risky driving behaviour and show anger behind the wheel.
3. **Volatility & 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.
4. **Attitude & Abrasiveness Risk** – Individuals in this area who are high risk generally have a negative attitude and tend not to have strong interpersonal skills.
5. **Unreliability Risk** – Individuals deemed a high unreliability risk are unlikely to stay on task, follow through or consistently meet performance expectations.
6. **Absenteeism/Tardiness Risk** – Individuals who are a high absenteeism/tardiness risk are more likely to be late, miss or skip work.
7. **Turnover Risk** – Individuals who are deemed a turnover risk have demonstrated a history of leaving companies and are unlikely to be a stable employee.

CONCLUSION

Our research and expertise has allowed us to design and develop a theoretically sound and practically useful selection assessment for commercial drivers. The characteristics we measure and the methods we employ provide an effective, fair and accurate means to screen out high risk candidates. Our assessment is designed to predict the outcomes that are most important to those who have a stake in the commercial driving industry, the well being of drivers and others on the road. The end result is a Road *Worthy* workforce that is safe, productive and motivated. Are you ready to make sure your drivers are Road *Worthy*?

REFERENCES

- ¹Corsi, T.M., & Fanara, P. (1988). Driver management policies and motor carrier safety. *Logistics and Transportation Review, 24*, 153-164.
- ²Perser, J.H. (1994). Lumping, long hours, absence from home continue to fuel truckload driver shortage. *Traffic World, 4*, 31-33.
- ³Caird, J.K. (2004). The relationships between organizational and individual variables to on-the-job driver accidents and accident-free kilometres. *Ergonomics (0014-0139), 47* (15), p. 1598.
- ⁴Rimmo, P. A. (2002) Aberrant Driving Behavior: Homogeneity of a Four-Factor Structure in Samples Differing in Age and Gender. *Ergonomics, 45*(8), 569–582.
- ⁵Knipling, R.R., Boyle, L.N., Hickman, J.S., York, J.S., Daecher, C. Olsen, E.C.B., Prailey, T.D. (2004). *CTBSSP Synthesis Report 4: Individual Differences and the "High-Risk" Commercial Driver*, Commercial Truck and Bus Synthesis Program. Transportation Research Board, National Research Council, Washington, D.C.
- ⁶Chandraratna, S. & Stamatiadis, M. (2004). Crash Involvement of Drivers with Multiple Crashes and Citations. *Presented at the 83rd Annual Meeting of the Transportation Research Board, Washington, DC.*
- ⁷Miller, T. M. & Schuster, D. H. (1983). Long Term Predictability of Driver Behavior. *Accident Analysis and Prevention, 15*(1), 11–22.
- ⁸Clarke, S., & Robertson, I.T. (2005). The meta-analytic review of the Big Five personality factors and accident involvement in occupational and non-occupational settings. *Journal of Occupational and Organizational Psychology, 78*, 355-376.
- ⁹Clarke, S., & Robertson, I.T. (2008) An Examination of the Role of Personality in Work Accidents Using Meta-analysis. *Applied Psychology: An International Review, 57*(1), 94–108.
- ¹⁰Fernandes, R., Soames, Job, R. F., Hatfield, J. (2007). A challenge to the assumed generalizability of prediction and countermeasure for risky driving: Different factors predict different risky driving behaviors. *Journal of Safety Research, 38*, 59-70.
- ¹¹Jones, J.W., & Wuebker (1993). Safety locus of control and employees' accidents. *Journal of Business and Psychology, 7*, 449-457.
- ¹²Wallace, J. C., & Vodanovich, S. J. (2003). Workplace safety performance: Conscientiousness, cognitive failure, and their interaction. *Journal of Occupational Health Psychology, 8*, 316-327.
- ¹³Gulliver, P., & Begg., D. (2007). Personality factors as predictors of persistent risky driving behavior and crash involvement among young adults. *Injury Prevention, 13*, 376-381.

- ¹⁴Dahlen, E. R., Martin, R.C., Ragan, K., & Kuhlman, M.M. (2005) Driving anger, sensation seeking, impulsiveness, and boredom proneness in the prediction of unsafe driving *Accident Analysis and Prevention, 37*, 341–348.
- ¹⁵Occupational Information Network (2008). 53-3032.00 - Truck Drivers, Heavy and Tractor-Trailer. *U.S. Department of Labor*. Retrieved August 2008 from <http://online.onetcenter.org/>.
- ¹⁶Pittman, J. P. (2007). *Unpublished Job Analysis for Commercial Truck Drivers*.
- ¹⁷Quist, J.S., Merlini, P., & Harrington, J. (April, 2008). *Position description and evaluation for Driver I* (Position Description No. 50H18). Melbourne, FL: Harrington & Associates, Inc.
- ¹⁸Barrick, M. R., & Mount, M. K. (1991). The big five personality dimensions and job performance: A meta-analysis. *Personnel Psychology, 44*, 1–26.
- ¹⁹Hogan, J., Hogan, R., Busch, C. M. (1984). How to measure service orientation. *Journal of Applied Psychology, 69*, 167-173.
- ²⁰De Croon, E. M., Sluiter, J. K., Blonk, R. W. B., Broersen, J. P. J., Frings-Dresen, M. H. W. (2004). Stressful work, psychological job strain, and turnover: A 2-year prospective cohort study of truck drivers. *Journal of Applied Psychology, 89*, 442-454.
- ²¹Keller, S. B. (2002). Driver relationships with customers and driver turnover: Key mediating variables affecting driver performance in the field. *Journal of Business Logistics, 23*, 39-64.
- ²²Mael, F. A. (1991). A conceptual rationale for the domain and attributes of biodata items. *Personnel Psychology, 44*, 763-792.
- ²³Mumford, M. D. & Stokes, G. S. (1992). Developmental determinants of individual action: Theory and practice in applying background measures. In M. D. Dunnette & L. M. Hough (Eds.), *Handbook of industrial and organizational psychology (Vol. 3, pp. 61-138)*. Palo Alto, CA: Consulting Psychologists Press.