Adult Drivers:
Safety Assessment Research

FINDINGS

130%
Higher At-Fault Accident Rate

362%
Higher Average # of Traffic Tickets

For Rule-Resistant Drivers

Research Study Objective:

TalentClick and Insight Driving Solutions (with consultation from Psychologist Dr. John Vavrik) conducted a research study on how personality is linked to driver behaviors. The purpose of the study was to help advance knowledge of the link between personality and road safety with the overall goal of applying this knowledge to reduce accidents and make the roads safer for everyone.

Summary of Results

TalentClick DSQ (Driver Safety Quotient) personality assessment results for 339 Canadian adult participants were analyzed in relation to self-reported road safety incident data. The DSQ measures key personality traits linked to safety-related behaviors. It helps identify and address potential risks within peoples' "default behaviors" that may lead to human error.

The results show significant correlations between the DSQ safety risk measures and specific types of road safety incidents and also show markedly higher road safety incident rates for groups scoring "Higher Risk" on the DSQ.

UNDERSTAND PEOPLE REDUCE RISK

Highlights of Findings

The data analysis revealed the following results:

DSQ Dimension	Road Safety Incident Type Linked To	DSQ Score Group Differences
"Rule-Resistant"	**At-Fault Accidents**	**130% Higher** At-Fault Accident Rate for participants with "Higher-Risk" *Rule-Resistant* scores on the DSQ.
	Traffic Tickets	**362% Higher** Average number of Traffic Tickets for participants with "Higher-Risk" *Rule-Resistant* scores on the DSQ.
"Irritable"	**At-Fault Accidents**	**158% Higher** At-Fault Accident Rate for participants with "Higher-Risk" *Irritable* scores on the DSQ.
	Near Miss Accidents	**38% Higher** Near Miss Rate for participants with "Higher-Risk" *Irritable* scores on the DSQ.
"Distractible"	**At-Fault Accidents**	**40% Higher** At-Fault Accident Rate for participants with "Higher-Risk" *Irritable* scores on the DSQ.

UNDERSTAND PEOPLE REDUCE RISK

Background

Previous research conducted by TalentClick has demonstrated the link between personality traits of industrial workers and safety incidents. To further our understanding of the role of personality in safety-situations, further data specific to road safety-related incidents was examined.

The Driver Safety Quotient

The DSQ is a behavioral assessment is a tool used by companies involved in the transportation of goods via road, rail, air, or sea. It measures the key personality traits related to safety behaviors while operating commercial vehicles. The DSQ is trusted by employers such as CN Rail and Canadian Freightways to assess candidates and current employees helping them identify and address potential risks within drivers "default behaviors" that may lead to human error behind the wheel.

The DSQ is recommended to be used as "one piece of the safety puzzle" to provide employers and employees with insight into potential safety risks on an individual-person basis. It complements but does not replace best practices in training, equipment, and processes/procedures that should also be implemented and maintained.

Two Types of Reports

For Employers:

Helps hiring managers or fleet supervisors predict risk & provides interview tips to probe "higher-risk" areas

For Self-Coaching:

Helps a driver be more aware of their own personal safety risk factors and how to reduce their impact

The 5 Factors

The standard version of the DSQ measures the following safety-related personality characteristics:

Rule-Resistant: Higher-Risk individuals may ignore authority and road rules. Unsafe driving examples include violating regulations, speeding, running red lights, unsafe turning, failing to signal, and not wearing a seatbelt. Lower-Risk individuals tend to willingly follow guidelines, follow training and are compiant with laws.

Irritable: Higher-Risk individuals may have a negative view of others' driving and may become easily annoyed or display aggression (road rage) toward other drivers. Unsafe driving examples may include tailgaiting, swerving, aggressive passing, sudden lane changes, and gesturing. Lower-Risk individuals tend to be less irritable and able to control their emotions.

Distractible: Higher-Risk individuals seek stimulation and variety, and may be easily distracted by things inside and outside the vehicle. Unsafe driving examples may include talking on mobile, texting, changing music, eating, being unaware of traffic signs. Lower-Risk individuals are able to stay focused and alert.

Anxious: Higher-Risk individuals may panic or freeze when faced with unexpected road situations, and may feel unsure about their driving abilities. Unsafe driving examples may include freezing, avoidance of driving, slow driving, hesitancy at intersections, overbraking. Lower-Risk individuals tend to be confident drivers and are steady and calm under pressure.

Risk-Taking: Higher-Risk individuals tend to seek excitement, enjoy taking risks and may underestimate possible negative consequences of their actions. Unsafe driving examples may include speeding, rapid acceleration, high-speed cornering, ignoring precautions or preventative measures. Lower-Risk individuals are not thrill seekers and tend to carefully evaluate their options before making decisions.

UNDERSTAND PEOPLE REDUCE RISK

Data Analysis Process & Results

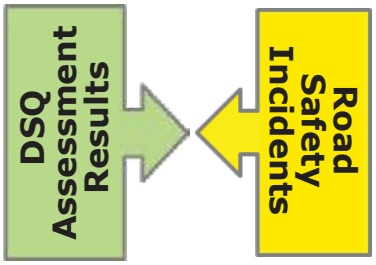
The Driver Safety Quotient (DSQ™) results for 339 Adult Canadian Drivers were collected noting their responses from the following key demographic questions:

Demographic Question		Number of Participants (Total=339)
Do you drive a motor vehicle on the job to earn a living?	Yes	86
	No	253
	Total	339
What is the average time you spend driving a motor vehicle each day?	0 hours	39
	1-2 hours	81
	30-60 minutes	95
	3-5 hours	35
	6 hours or more	16
	Less than 30 minutes	73
	Total	339
What is the average time you spend driving a motor vehicle on weekends (Saturday and Sunday combined?	0 hours	29
	1-2 hours	117
	30-60 minutes	85
	3-5 hours	67
	6 hours or more	10
	Less than 30 minutes	31
	Total	339
Age Range	19-21	3
	22-25	30
	26-34	87
	35-49	136
	50-74	83
	Total	339
Gender	Female	166
	Male	173
	Total	339

UNDERSTAND PEOPLE REDUCE RISK

Data Analysis Process & Results (Cont'd)

The relationship between DSQ™ assessment results and self-reported road safety incidents was analyzed:



Data Set #1

TalentClick Driver Safety Quotient (DSQ™) personality assessment results for the sample of 339 Canadian adult participants. The DSQ™ measures key personality traits linked to safety-related behaviors. It helps identify and address potential risks within peoples' "default behaviors" that may lead to human error.

Data Set #2

Self-reported driving incident data from the 339 participants including:

Road Safety Incident Question	Participant Group Incident Rate (per 100 participants)
How many traffic tickets have you received in the past 5 years for speeding?	55.2
How many traffic tickets have you received in the past 5 years for red light violations (i.e. failing to stop at a red light)?	8.3
Despite driving as safely as we can, sometimes other drivers or external factors cause a 'near miss' where our corrective actions help avoid a crash. How many 'near misses' while driving have you had in the past 6 months?	115
How many motor vehicle accidents have you had in the past 5 years that according to the police or your insurance company were at least partically your fault?	20.4

UNDERSTAND PEOPLE REDUCE RISK

Detailed Data Analysis Findings

The notable findings reported below include the data relationships that met two criteria:

1) Notable differences between participants scoring in the "Higher-Risk" range (highest quartile) of a given DSQ risk factor

2) Correlations were statistically significant at the .01 or .05 levels

DSQ Dimension	Road Safety Incident Type Type Linked To	DSQ Score Group Differences	Correlation and Significance
"Rule-Resistant"	**At-Fault Accidents**	**130% Higher** At-Fault Accident Rate for participants with "Higher-Risk" *Rule-Resistant* scores on the DSQ.	$r = .17$ $p \leq .01$ $n = 339$
	Traffic Tickets	**362% Higher** Average number of Traffic Tickets for participants with "Higher-Risk" *Rule-Resistant* scores on the DSQ.	$r = .16$ $p \leq .01$ $n = 339$
"Irritable"	**At-Fault Accidents**	**158% Higher** At-Fault Accident Rate for participants with "Higher-Risk" *Irritable* scores on the DSQ.	$r = .15$ $p \leq .01$ $n = 339$
	Near Miss Accidents	**38% Higher** Near Miss Rate for participants with "Higher-Risk" *Irritable* scores on the DSQ.	$r = .16$ $p \leq .01$ $n = 339$
"Distractible"	**At-Fault Accidents**	**40% Higher** At-Fault Accident Rate for participants with "Higher-Risk" *Irritable* scores on the DSQ.	$r = .11$ $p \leq .05$ $n = 339$

UNDERSTAND PEOPLE REDUCE RISK

Detailed Data Analysis Findings (Cont'd)

"Rule-Resistant" (The Tendancy to Disregard Rules) was significantly correlated to:

At-Fault Accidents:

Participants' "Rule-Resistant" scores significantly correlated with At-Fault Accidents (r = .16, $p \leq .01$, n = 339). Participants scoring in the "Higher-Risk" range of "Rule-Resistant" (above the 75th percentile) had an average At-Fault Accident rate 130% higher than those who scored in the "Lower-Risk" and "Average-Risk" ranges (1st to 75th percentile).

Traffic Tickets:

Participants' "Rule-Resistant" scores significantly correlated with number of Traffic Tickets (r = .16, $p \leq .01$, n = 339). Participants scoring in the "Higher-Risk" range of "Rule-Resistant" (above the 75th percentile) had an average Traffic Tickets rate 362% higher than those who scored in the "Lower-Risk" and "Average-Risk" ranges (1st to 75th percentile).

"Irritable" (The Tendancy to Become Annoyed and Have a Negative Emotional Reaction to Stress) was significantly correlated to:

At-Fault Accidents:

Participants' "Irritable" scores significantly correlated with At-Fault Accidents (r = .15, $p \leq .01$, n = 339). Participants scoring in the "Higher-Risk" range of "Irritable" (above the 75th percentile) had an average At-Fault Accident rate 158% higher than those who scored in the "Lower-Risk" and "Average-Risk" ranges (1st to 75th percentile).

Near Misses:

Participants' "Irritable" scores significantly correlated with number of Near Misses (r = .16, $p \leq .01$, n = 339). Participants scoring in the "Higher-Risk" range of "Irritable" (above the 75th percentile) had an average Near Misses rate 38% higher than those who scored in the "Lower-Risk" and "Average-Risk" ranges (1st to 75th percentile).

"Distractible" (The Tendancy to Seek Stimulation and Variety) was significantly correlated to:

At-Fault Accidents:

Participants' "Distractible" scores significantly correlated with At-Fault Accidents (r = .11, $p \leq .01$, n = 339). Participants scoring in the "Higher-Risk" range of "Distractible" (above the 75th percentile) had an average At-Fault Accident rate 40% higher than those who scored in the "Lower-Risk" and "Average-Risk" ranges (1st to 75th percentile).

UNDERSTAND PEOPLE REDUCE RISK

Conclusions and Future Considerations

1. Significant Correlation & Notable Group Differences

The results from this study are encouraging because they indeed show significant correlations between specific personality dimensions and specific types of road safety incidents and also showed marked differences in road safety incident rates between “Higher-Risk” groups compared to “Average-Risk” and “Lower-Risk” groups. This supports the findings of prior research research done in this area by TalentClick and others.

2. Road Safety Incidents are Rare

It is important to keep in mind that road safety incidents are relatively rare and have multiple variables contributing to their causes. Determining the impact of any one type of causation variable such as personality will likely continue to be challenging to capture from a statistical perspective but the potential benefits of helping to prevent future incidents warrants further research.

3. Future Research

A further examination of both the predictor (DSQ) and criterion (incident data) would be useful to explore how they might be refined to improve measurement. Further data collection (in progress) with professional and non-professional drivers and other job types would also be beneficial for understanding the roles of personality and non-personality variables in road safety incidents. Research examining the effectiveness of applying the DSQ assessment results to coaching, self-coaching, employee development and hiring is in progress and will provide another interesting data point for examination.