Influence of Personality on Teen Texting While Driving Perceptions

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Presentation Overview

- Introduction
- Background Literature
- Research Model & Hypotheses
- Methodology
- Results
- Discussion
- Conclusion
Introduction

• Texting while driving (TWD) is a growing problem among teenage drivers.

• According to Atchley et al. (2011):
  – Texting is a very common behavior in younger adults as it supports peer-to-peer interaction and it increases feelings of belongingness.
  – Young adults are strongly motivated to text to keep in touch, even if they are engaging in other tasks, which leads to texting in inappropriate and risky situations.
Introduction

• Research suggests:
  – 1.5 seconds is the minimal amount of attention that a driver who texts takes away from the road.
  – If the driver is traveling at 55 mph, this action is equivalent to driving the length of a football field without looking at the road.

• The same study indicates:
  – Texting while driving makes a crash up to 23 times more likely.
  – Teens who text while driving spend 10% of the time outside of their lane.

• According to AT&T's Teen Driver Survey, 97% of teens agree that texting while driving is dangerous, yet 43% do it anyway (AT&T 2015).
Introduction

• Many states have enacted laws to crack down on texting while driving (TWD).

• However, they are not very effective in discouraging TWD behaviors, especially for teenagers.

• The goal of this project is to identify key components that impact teenager’s perceptions of TWD law compliance.
Background Literature

• General Deterrence Theory
• Protection Motivation Theory
• Big Five Personality Factors
General Deterrence Theory (GDT)

- Individuals make a rational assessment of the relative benefits and costs of policy violations by evaluating the potential sanctions for violating policies (Bulgurcu et al., 2010; Siponen & Vance, 2010).
  - Sanction Certainty
  - Sanction Severity
  - Sanction Celerity
General Deterrence Theory

• Deterrence research has shown consistently that sanction fear predicts various criminal and deviant behaviors (Nagin and Pogarsky 2001, Tittle 1980).

• GDT predicts that the greater the certainty and severity of sanctions for an illicit act, the more individuals are deterred from that act (Gibbs 1975).
Protection Motivation Theory (PMT)

- Protection motivation theory (PMT) suggests that individuals assess a threat and their ability to cope with that threat (Anderson & Agarwal, 2010; Johnston & Warkentin, 2010).

- Threat Appraisal
  - Threat Susceptibility
  - Threat Severity

- Coping Appraisal
  - Response Efficacy
  - Self Efficacy
  - Response Cost
Personality Trait

- Any readily-identifiable, stable quality that differentiates one individual from another
- Presents specific ideas about a person’s disposition (the way she is likely to behave across situations as well as over time)
- Not situational (stimuli not required)
The “Big Five” Personality Model

• The Evolution of the “Big Five”
  • Allport and Odbert (1936) identified 18,000 personality-related terms
  • Cattell (1945) reduced it to thirty-five variables
  • These variables were eventually conceptualized into five strong factors (Tupes and Christal, 1961)

• After repeated validations, they eventually became known as the big five (Goldberg, 1981).

• A multitude of similar five-factor models have been proposed (Botwin and Buss 1989; Costa and McCrae 1985; Conley 1985).
### “Big Five” Personality Traits

<table>
<thead>
<tr>
<th>Trait</th>
<th>Low Scorers</th>
<th>High Scorers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Openness</strong></td>
<td>Down-to-earth, Uncreative, Conventional, Uncurious</td>
<td>Imaginative, Creative, Original, Curious</td>
</tr>
<tr>
<td><strong>Conscientiousness</strong></td>
<td>Negligent, Lazy, Disorganized, Late</td>
<td>Conscientious, Hard-Working</td>
</tr>
<tr>
<td><strong>Extroversion</strong></td>
<td>Joiner, Talkative, Active, Affectionate</td>
<td>Trusting, Lenient, Soft-Hearted, Good-natured</td>
</tr>
<tr>
<td><strong>Agreeableness</strong></td>
<td>Suspicious, Critical, Ruthless, Irritable</td>
<td>Worried, Temperamental, Self-conscious, Emotional</td>
</tr>
<tr>
<td><strong>Neuroticism</strong></td>
<td>Calm, Even-tempered, Comfortable, Unemotional</td>
<td></td>
</tr>
</tbody>
</table>
Methodology

• Utilized a likert-scale survey to identify TWD perceptions
  – Administered to young drivers, age 15-21 years old
  – Administered online
  – Included screening questions
    • Age
    • Own Cell Phone
    • Own/Drive a Vehicle
    • Have a Driver’s License/Learner’s Permit

• Analyzed with multiple regression analysis
Sample

- $N = 105$
- 80% of the sample is 15 – 19 years old
- 76% of the sample is Caucasian
- 70% of the sample is female
- 75% of the sample drives 3 – 10 hours/week
Sample

- 59% have read a text message while driving
- 53% have sent a text message while driving
- 22% have been so distracted by TWD that they believed they were being reckless
- 18% have drifted into another lane due to TWD
- 8% have ran a stop sign due to TWD
What are the restrictions on using a cell phone while driving in your state?

<table>
<thead>
<tr>
<th>Restriction</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>There are no restrictions on using a cell phone while driving.</td>
<td>4%</td>
</tr>
<tr>
<td>Drivers under 18 are allowed to talk on a cell phone as long as they use a</td>
<td>11%</td>
</tr>
<tr>
<td>hands-free device.</td>
<td></td>
</tr>
<tr>
<td>Drivers under the age of 18 are not allowed to use a cell phone while</td>
<td>20%</td>
</tr>
<tr>
<td>driving.</td>
<td></td>
</tr>
<tr>
<td>No drivers in my state are allowed to use a cell phone, including adults.</td>
<td>44%</td>
</tr>
<tr>
<td>I don’t know.</td>
<td>21%</td>
</tr>
<tr>
<td>Total</td>
<td>100%</td>
</tr>
</tbody>
</table>
## Reliability Analysis

<table>
<thead>
<tr>
<th>Variable</th>
<th># of items</th>
<th>Alpha</th>
</tr>
</thead>
<tbody>
<tr>
<td>BFEXTRA</td>
<td>5</td>
<td>.755</td>
</tr>
<tr>
<td>BFAGREE</td>
<td>5</td>
<td>.692</td>
</tr>
<tr>
<td>BFCONSCIEN</td>
<td>5</td>
<td>.722</td>
</tr>
<tr>
<td>BFNEURO</td>
<td>3</td>
<td>.655</td>
</tr>
<tr>
<td>BFOPEN</td>
<td>8</td>
<td>.826</td>
</tr>
<tr>
<td>SELFEFF</td>
<td>3</td>
<td>.860</td>
</tr>
<tr>
<td>RESPEFF</td>
<td>7</td>
<td>.874</td>
</tr>
<tr>
<td>THREATSEV</td>
<td>4</td>
<td>.762</td>
</tr>
<tr>
<td>THREATSUS</td>
<td>6</td>
<td>.867</td>
</tr>
<tr>
<td>SANCSEV</td>
<td>6</td>
<td>.797</td>
</tr>
<tr>
<td>SANCCER</td>
<td>9</td>
<td>.753</td>
</tr>
<tr>
<td>RESPRESS</td>
<td>7</td>
<td>.836</td>
</tr>
</tbody>
</table>
Regression Analysis Results

- Adjusted Rsquare = .413
- F = 6.227
- p < .001
Significant Results

Response Cost → Sanction Certainty
\[ t = 3.925, \ p < 0.001 \]

Sanction Certainty → TWD
\[ t = -2.861, \ p = 0.005 \]

TWD → Neuroticism
\[ t = -2.572, \ p = 0.012 \]
Discussion

• Implications for Research
• Implications for Practice
• Limitations
• Directions for Future Research
  – Theory of Planned Behavior
  – Humanitarian Technology Conference
Conclusion

• We integrated general deterrence theory, protection motivation theory and the big five personality traits to identify factors that impact TWD behavior.

• The results indicate that elements of each theory impact TWD behavior.
NC Cell Phone Use & Driving Laws

• **Cell Phone Use**
  – School bus drivers and novice drivers in North Carolina - drivers under the age of 18 with provisional licenses – are prohibited from using cell phones (handheld or hands-free) while driving.

• **Texting Laws**
  All drivers are prohibited from texting while driving.
General Deterrence Theory Items

- SANCSEV1 - If I were caught texting while driving, I think the punishment would be high.
- SANCSEV2 - If I were caught texting while driving, I would be severely punished.
- SANCSEV3 - It would create a problem in my life if I were arrested for texting while driving.
- SANCSEV4 - It would create a problem in my life if I received a ticket for texting while driving.
- SANCSEV5 - It would create a problem in my life if I lost the respect of my peers for not following the texting while driving laws.
- SANCSEV6 - It would create a problem in my life if I lost the respect of my family/legal guardians for not following the texting while driving laws.

- SANCCER1 - If I were to text while driving, the probability I would be caught is low.
- SANCCER2 - If I were to text while driving, I would probably be caught.
- SANCCER3 - I would be punished if I did not follow the texting while driving laws.
- SANCCER4 - I would lose my driving privileges if my parents/guardians learned that I had been texting while driving.
- SANCCER5 - I would face criminal charges if the police caught me texting while driving.
- SANCCER6 - I would lose the respect of my peers for not following the texting while driving laws.
- SANCCER7 - I would be restricted from participating in extracurricular opportunities if my parents/guardians learned that I did not follow the texting while driving laws.
- SANCCER8 - I would lose the respect of my parents/guardians if they learned that I had been texting while driving.
- SANCCER9 - There is a strong chance that I would be punished if I were caught texting while driving.
Protection Motivation Theory Items

- SELFEFF1 - I am likely to follow texting while driving laws
- SELFEFF2 - It is possible that I will follow texting while driving laws in order to protect other people
- SELFEFF3 - I am certain that I will follow texting while driving laws

- THREATSEV1 - If I were to have an accident while texting and driving, it would be severe
- THREATSEV2 - If I were to have an accident while texting and driving, it would be serious
- THREATSEV3 - Texting while driving can cause harm to other drivers
- THREATSEV4 - Texting while driving can result in damage to vehicles

- THREATSUS1 - I am putting myself at risk when I text and drive
- THREATSUS2 - I am likely to get into an accident if I text while driving
- THREATSUS3 - It is possible that I will have an accident if I text while driving
- THREATSUS4 - It is likely that texting while driving will result in a traffic accident
- THREATSUS5 - It is likely that texting while driving will cause harm to other drivers
- THREATSUS6 - It is likely that texting while driving will cause damage to other vehicles
Protection Motivation Theory Items

- RESPEFF1 - Not texting while driving will successfully prevent traffic accidents
- RESPEFF2 - Not texting while driving is the best solution for preventing traffic accidents
- RESPEFF3 - If we refrain from texting while driving, we can minimize the threat of traffic accidents
- RESPEFF4 - If I follow the texting while driving laws, I can make a difference in helping to secure the highway systems
- RESPEFF5 - Texting while driving laws work to protect people from getting involved in traffic accidents
- RESPEFF6 - Texting while driving laws effectively protect people from getting into traffic accidents
- RESPEFF7 - When following texting while driving laws, drivers are more likely to be protected from being involved in traffic accidents

- RESPCC0ST1 - Not avoiding texting while driving is difficult to do.
- RESPCC0ST2 - I would have to make major changes to how I communicate if I could not text and drive.
- RESPCC0ST3 - Not texting while driving will cause me to miss important messages from my friends and family.
- RESPCC0ST4 - Following the texting while driving laws is difficult for me.
- RESPCC0ST5 - Following the texting while driving laws is challenging for me.
- RESPCC0ST6 - Following the texting while driving laws would impact me negatively.
- RESPCC0ST7 - Following the texting while driving laws would create disadvantages for me.
I see myself as someone who...

- BFEXTRA1 - Is outgoing, sociable.
- BFEXTRA2 - Is talkative.
- BFEXTRA3 - Has an assertive personality.
- BFEXTRA4 - Generates a lot of enthusiasm.
- BFEXTRA5 - Is full of energy.

- BFAGREE1 - Is considerate and kind to almost everyone.
- BFAGREE2 - Likes to cooperate with others.
- BFAGREE3 - Is helpful and unselfish with others.
- BFAGREE4 - Has a forgiving nature.
- BFAGREE5 - Is generally trusting.

- BFCONSCIEN1 - Does a thorough job.
- BFCONSCIEN2 - Does things efficiently.
- BFCONSCIEN3 - Makes plans and follows through with them.
- BFCONSCIEN4 - Is a reliable worker.
- BFCONSCIEN5 - Perseveres until the task is finished.
Big Five Items

I see myself as someone who...

- BFNEURO1 - Can be moody.
- BFNEURO2 - Is depressed, blue.
- BFNEURO3 - Gets nervous easily.
- BFNEURO4 - Can be tense.
- BFNEURO5 - Worries a lot

- BFOPEN1 - Is inventive.
- BFOPEN2 - Is original, comes up with new ideas.
- BFOPEN3 - Values artistic, aesthetic experiences.
- BFOPEN4 - Has an active imagination.
- BFOPEN5 - Likes to reflect, play with ideas.
- BFOPEN6 - Is sophisticated in art, music, or literature.
- BFOPEN7 - Is ingenious, a deep thinker.
- BFOPEN8 - Is curious about many different things.
References (Selected)


