Effect of Mobile Phone Use While Driving on Driver’s Performance

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Research Background  
Advanced econometric models  
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Factors Affecting Behavior of Mobile Phone Use While Driving and Effect of Mobile Phone Use on Driving Performance

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Mobile Phone Use While Driving

- Mobile phones, especially Smartphones → essential devices in our daily activities.
- Mobile phone subscriptions have increased worldwide since the end of 2015.
- convenience and ability to connect to the Internet and facilitate social networking.
- Mobile phones have been designed to be more user-friendly with less complicated function.
- Therefore, mobile phones can be used at any time, not even, while driving.
- Is it safe to do so?

Reference
Mobile Phone Use While Driving

• The use of mobile phone while driving → normal behavior
• This behavior was reported as one of the riskiest behaviors while driving
• However, most drivers → neglect the impact of using their mobile phone while driving
• Using mobile phone while driving → the decreasing of overall driving skill
• Distracted driving by mobile phone use has become more serious as it increases the likelihood of being involved in the road crashes.
• ‘Cause of severe road accident’
Mobile Phone Use While Driving

- Thailand’s roads are the deadliest in Southeast Asia and among the worst in the world, according to the World Health Organization.
  - Each day, approximately,
  - 60 people die
  - 2,500 are injured – among these number 500 are seriously injured while 20 became disabled
- It has been reported that 68% of car drivers and 38% of motorcycle riders normally use mobile phone while driving whether calling, texting, or using GPS.
- One major cause of Thai’s road accident is related mobile phone use while driving

Reference
WHO, 2017; Thairoads, 2019; TIP Insurance, 2016; Roojai, 2021
Mobile Phone Use While Driving

• Three factors affecting mobile phone use
  • Human characteristics
  • Driving conditions
  • Colloquists and communication types.

• Human factor is the highest influence of mobile phone use while driving behavior; therefore....
  • Driving performance?
  • Driver attitude?

References
Objective and Scope

• Determine factors affecting drivers to use mobile phone while driving.
• Study the effects of using mobile phone while driving on driver’s performance.

• Part A: Factor affecting mobile phone use while driving behavior
• Part B: Driver’s performance while using mobile phone
Part A
Factor affecting mobile phone use while driving behavior

• Methodology: Questionaire survey
• Location: Thailand
• Number of sample: 710 respondents
• Analysis Method: Theory of Plan behavior

Measurements

- Risk Perception
- Attitude
- Norm
- Perceived Behavioral Control
- Law Enforcement Knowledge
- Intention
Key Factors
(Driver’s Behavior)

Law Enforcement Knowledge
• Negative impact

Attitude
• Positive impact

Norm
• Positive impact
Part B
Driver’s performance while using mobile phone

• Methodology: Driving simulator
• Location: Thailand
• Number of respondents: 100 respondents
• Analysis Method: Multiple linear regression

Measurements

- Speed
- Lateral Position
- Steering speed and deviation
- Leading Distance
- Perception – Reaction Time
- Nearmiss
Example of driving simulator scenarios
Part B
Driver’s performance while using mobile phone

• Methodology: Driving simulator
• Location: Thailand
• Number of respondents: 100 respondents
• Analysis Method: Multiple linear regression

Measurements

- Speed
- Lateral Position
- Steering speed and deviation
- Leading Distance
- Perception – Reaction Time
- Nearmiss
Considered driving performance
Key Factors (Driver’s Performance)

**Speed**
- Decrease when texting while driving
- Especially in elderly driver

**Following Distance**
- Increase when using mobile phone while driving
- Especially in elderly driver
- Increase by age
Key Factors
(Driver’s Performance)

Steering speed and Deviation
• Increase when using mobile phone while driving

Lateral Position
• Increase when texting while driving
Key Factors

(Driver’s Performance)

Perception – Reaction Time

• Increase when using mobile phone while driving
• Increase by age

Nearmiss

• Increase when using mobile phone while driving
Mobile phone while driving behavior

Is it safe to do so?

No!
Recommendations

We can consider part of in The ‘6Es’ targeted road safety policies

- **Engineering**
  - Installation of detection devices, for example, Fixed mobile phone camera
  - Installation of warning sign

- **Education**
  - Consider road safety education as part of the official school curriculum.

- **Encouragement,**
  - Produce a strong advertisement or campaign on the risk of using mobile phone while driving

- **Enforcement,**
  - Increase fine of using mobile phone while driving

Reference


Thank You!

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