

# The Effectiveness of Emotional Appeals in Encouraging Helmet Use Among E-Scooter Riders

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## **Abstract**

This paper explores how persuasion with appeals to emotions can be used to encourage the use of helmets among e-scooter users, a safety behavior that is important but commonly overlooked. Through a randomized controlled experiment involving 80 participants, this research evaluates the effectiveness of an emotionally charged poster that underscores the dangers of riding without a helmet compared to a neutral, non-persuasive image. The degree to which participants perceived the utility of different measures – clarity, influence, and intention to wear helmets was measured by a Likert scale. Statistical analysis revealed that the emotional appeal significantly enhanced positive attitudes and intentions toward helmet use, with all evaluated metrics showing marked improvements in the experimental group over the control group ( $p < 0.001$ ). The results emphasize how effective emotional messaging is at changing safety behaviors and back its wider use in public health campaigns that encourage helmet use among users of e-scooters.

## **Introduction**

One of the measures that e-scooter consumers often fail to put into consideration is wearing a helmet. Crashes of e-scooters often result in head injuries which are quite severe and their incidence has ramped up (Jiho 2024). Despite the cold risk factors/simulation still, most riders go for the ride without helmets as pointed out by (Dannenberg et al. 2011). Some of them include enforceable helmet laws awareness campaigns and great advertisement on helmet usage.

Past studies indicate that stand-alone helmet laws are only moderately effective. For instance, helmet use laws for bicycles in different parts of the world for instance in Australia and New Zealand brought about the increased use of helmets although there were mixed results in minimizing injuries on the head (Robinson, 2006). Educational campaigns that form part of public health interventions have also been assessed with more or less success, especially where children are the target clientele (Dannenberg et al., 2011). But these methods do not usually yield impressive compliance levels especially not from a ridership of all adults.

In this paper, the we looks at our next approach, which is making use of appeals to emotions. Cognitive and emotional interventions have been proved to work in different settings, for instance, public health and choice-making (Zinn & Manfredi, 2000). The present investigation seeks to establish if emotional appeals can promote helmet use among e-scooter using population which has not been targeted in similar efforts.

## **Literature Review**

### **Behavioral Interventions to Encourage Helmet Use**

Various approaches have been used on use of helmets including legislation and health education. Dannenberg et al. (2011) have compared laws and education as strategies to influence children's helmet wear. Research done in Howard County, Maryland showed that legislation when complemented with education had a great influence and aggregated to helmet usage than just education only. In the same way, comprehensive legislation such as helmet laws in New Zealand and Australia have given impaired outcomes.

## Emotional Appeals and Behavioral Change

The key persuasion technique that emotional appeals use is fear-triggering, empathy, and appeals to moral responsibility. Often, emotional appeals have been seen as more competent than reason-based appeal in many public health campaigns (Zinn & Manfredi, 2000). In their study of emotional versus rational appeals where recreational issues were used, Zinn and Manfredi, (2000) revealed that while emotional appeals were more recalled than rational appeals they were not more convincing. But when it comes to specifics, such as the safety issues surrounding e-scooters that can be manifestly dangerous to the individual, the equation may be different.

## Methodology

“An experiment was conducted to address my hypotheses. 80 participants were recruited from Prolific. Participants were randomly assigned to one of two conditions. In the experimental condition participants, participants viewed a poster that showed the importance of helmets when riding e-scooters and highlighted that approximately 94% of the riders don’t wear helmets seeking to emphasize how important it is to wear a helmet. In the control condition participants, the participants viewed a cartoon drawing of a man riding an e-scooter without a helmet. This poster provided a neutral baseline for comparison by omitting any extra messaging or data regarding helmet safety.

See Appendix A for stimuli.

Participants then reported on the following statements using a 1-5 scale.

1. This advertisement will encourage e-scooter riders to wear helmets.
2. The message in the advertisement is clear and easy to understand
3. The message in the advertisement would make me more likely to wear a helmet when riding an e-scooter.
4. After going through the advertisement, I believe wearing a helmet is crucial/essential when riding an e-scooter.
5. The advertisement effectively shows how crucial a helmet is for the e-scooter rider's safety.

After completing the experimental portion of the study, I examined how often e-scooter riders wear helmets when riding e-scooters, and how often they ride e-scooters. Also, the survey asked the participants to rank the following issues associated with e-scooters from 1 to 3, with 1 being the most significant concern and 4 being the least significant concern, the issues are as follows:

1. Riding e-scooters without a helmet
2. Double-Riding
3. Ghost parking (Parking in random places)
4. Underage riding

After that, I examined where the participants are from as well as their opinions on the reason why e-scooter riders should wear helmets.

## Results

### *Demographics*

51% of the participants were female with 48% of them male and 1% identifying as non-binary/third gender. 38% of participants were aged 18-24 and 62% were 25-34. Participants were from a variety of locations with the majority from the UK and the US. Participants also were from Estonia, France, Latvia, Mexico, the Philippines, and Portugal.

*Effectiveness of Message Framing*

To test my hypotheses, I ran several independent t-tests comparing the control group’s response to the advertisement to the experimental group’s response to the advertisement. See Table 1 for the results. Results reveal that participants in the experimental group had more positive attitudes toward the advertisement as well as the behavior. Specifically, they believed the advertisement would encourage riders to wear helmets, that the message was easily understood, that the message would encourage helmet wearing, that they believed helmet wearing was crucial, and that the advertisement did a good job showing the importance of helmet wearing. All of the scores for the experimental group were above or close to a 3 suggesting the advertisement was overall effective as a 3 represented neutral and a 4 represented “agree.”

**Table 1**

Dependent Variable	Control Group Mean	Experimental Group Mean	T-value	P-Value
This advertisement will encourage e-scooter riders to wear helmets.	2.41	3.33	-3.30	.001
The message in the advertisement is clear and easy to understand	1.86	3.40	-5.00	.001
The message in the advertisement would make me more likely to wear a helmet when riding an e-scooter.	2.35	3.38	-4.35	.001
After going through the advertisement, I believe wearing a helmet is crucial/essential when riding an e-scooter.	2.51	3.53	-3.67	.001
The advertisement effectively shows how crucial a helmet is for the e-scooter rider's safety.	1.95	2.93	-3.30	.001

*Understanding Participants Scooter and Helmet Wearing Behavior*

To better understand participant behavior I asked a number of questions. The first, “How often do you wear helmets when riding an e-scooter?” The majority of people indicated they never wear helmets (36%), while fewer said always (27%). The remaining participants indicated sometimes or that sometimes they don’t ride e-scooters.

The second is “How often do you ride e-scooters?” There were a variety of answers here, most participants had some experience with e-scooters, but their use varied from never to almost every day.

Next, participants were asked, “Please rank the following issues associated with e-scooters from 1 to 4, with 1 being the most significant concern and 4 being the least significant concern.” Participants ranked riding e-scooters without a helmet as the most important concern (M = 1.67, SD =.88) followed by double-riding (M = 2.33, SD = .89), underage riding (M = 2.61, SD= 1.08), and finally ghost parking (M = 3.39, p =.90).

Finally, participants were asked, “In your opinion, what is the reason why e-scooter riders should wear helmets?” The following themes emerged from the responses:

- Safety issues (40%)
- Cause of trauma, brain damage, injuries, car accidents, etc... (58%)

### **Discussion**

Accordingly, the findings of this study show that the emotional message is an appropriate way to alter people's perceptions and behavior regarding helmets when riding an e-scooter. A push appraisal was observed where the participants that received the emotionally charged message viewed the advertisement as having a greater influence on their behavior. These observations are in consonance with other studies carried out in the past that have established the fact that there are times when emotional appeals are more effective as compared to rational appeals (Zinn & Manfredi, 2000). Yet, contrary to research where both cognitive and affective messages were equally effective in some contexts (Zinn & Manfredi, 2000), we found that humanities' bias for emotional messaging served helmet use promotion better.

The results are in well accord with the study of Dannenberg et al. (2011) who proved that legislative efforts are useful but the efforts do require emotional and educational campaigns. Due to the specific concerns present with e-scooters these appeals appear to be more effective for reaching this group; they are thus useful for public health interventions.

### **Practical Implications**

Self-identification or identifying with key demographic groups that would resort to e-scooter service would also have to be appealed to emotionally in relation to helmets. Such an approach could be applied to other types of safety behaviours such as cycling and motorbike riding to expand the success of the interventions. Moreover, the use of such social media channels to share emotionally charged material might be useful in targeting younger riders who use e-scooters often.

### **Limitations and Future Research**

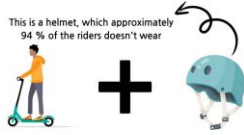
However, there are a few limitations that have to be mentioned. First, this research focused on intentions and not actual behavior. Since the helmet usage was monitored after the appeal, future studies should follow up the survey to see the long-term effect of the emotional appeal. Second, the number of participants, 80 people, is not very large which is why the results of the research cannot be considered fully representative of the total population. Perhaps, if the study samples are much larger, and monetary reward offered to the participants are employed, then the results will be more meaningful. Last but not least, it is also important in future research to investigate how emotional and rational factors interact to present the perfect combination that may elicit appropriate safety behavior among target groups.

### **References**

1. Dannenberg, A. L., Gielen, A. C., Beilenson, P. L., Wilson, M. H., & Joffe, A. (2011). Bicycle helmet laws and educational campaigns: An evaluation of strategies to increase children's helmet use. *American Journal of Public Health*, 83(5), 667-674.
2. Jiho, P. (2024). Persuasion and emotional appeals to helmet use in e-scooters. Unpublished manuscript.
3. Robinson, D. L. (2006). Do enforced bicycle helmet laws improve public health? *BMJ*, 332(725), 722-725.
4. Zinn, H. C., & Manfredi, M. J. (2000). An experimental test of rational and emotional appeals about a recreation issue. *Leisure Sciences*, 22(3), 183-194.

## Appendix

What do you think?



**=** 2007-N/A

A Helmet Can Save More Than Just Your Head

