

## Research Paper

## Predicting Helmet Use Among Farmers Motorcycle Drivers in Shushtar District Through Psychological Models

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**ABSTRACT**

Among road users, motorcyclists are called the most high-risk drivers. In Iran, the number of motorcyclists killed accounts for 23.8% of all traffic deaths. Therefore, this study aims to investigate the factors influencing farmers' intention toward using helmet when driving motorcycle. The study applied Health Beliefs Model (HBM) and a modified Theory of Planned Behavior (TPB), with self-identity and habit as two new and additional determinants of intention. The study instrument was a face-to-face survey (N=220) undertaken in Shushtar district, in southwestern Iran. The reliability and validity of the instrument were already examined and approved. The obtained data were analyzed using Structural Equation Modeling. Self-efficacy in HBM and self-identity, perceived behavioral control and habit in TPB were found to be significant predictors of intention, while attitude and subjective norms were not. The findings of this study provided preliminary support for the HBM and an extended model being used as an effective framework for examining helmet use among Iranian farmers.

**Key words:**

Helmet use, Traffic accidents, Theory of planned behavior, Health beliefs model, Shushtar

**Extended Abstract****1. Introduction**

**A**mong road users, motorcyclists are called the most the high-risk drivers. In Iran, the number of motorcyclists killed accounts for 23.8% of all traffic deaths. Therefore, this study aims to investigate the factors influencing farmers' intention toward using helmet when driving motorcycle by application of Theory of Planned Behavior (TPB) and Health Beliefs Model (HBM). HBM is one of the oldest and most widely used

theories in health psychology. It associates psychological theories of decision making to individual's decisions about health behaviors. This model would seem ideal for communication research. It can explain and predict a variety of health-related behaviors which has been validated across various domains and across a wide range of populations. HBM seeks to interpret and or analyze health behaviors at the individual level, regardless of others' overt actions.

The model's ability to explain and predict a variety of behaviors related to positive health outcomes has been replicated successfully over and over. The original HBM postulates that individuals' perceptions of four variables

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can predict their behaviors: 1. Perceived susceptibility, i.e., the perceived risk of facing a serious health condition; 2. Perceived severity, i.e., how severe the consequences of contracting a serious health condition would be perceived; 3. Perceived benefit, i.e., the perception of the benefits resulting from undertaking certain behaviors; and 4. Perceived barrier i.e., the perception of the costs and difficulties of undertaking certain behaviors.

Later, the original model was revised and modified. Rosenstock (1966) added “cue to action” to the model. He argued that combination of threat and behavioral evaluation variables could escalate considerably without resulting in overt action, unless occurring an event to trigger the action. Champion and Skinner (2008) addressed the factors within one’s own environment that can affect the final action taken. Then, they added “self-efficacy” to the model. It refers to an individual’s belief about his/her ability to perform a given behavior. HBM also comprises other additional cognitive or motivational components to change or predict behavior; for example, “general health orientation” was added to the original model to improve its ability to predict. It refers to an individual’s concern about health matters in general. However, it has rarely been included in HBM studies so far. In this study we call it “general beliefs.”

TPB, as an important social cognitive model, tries to explain variance in volitional behavior which was successful in this goal. TPB was developed as an extension of the Theory of Reasoned Action (TRA). Based on TPB, a person’s actual behavior in performing a certain action is directly guided by his or her behavioral intention (i.e., a motivation or plan) as a central factor, which in turn is jointly determined by the attitude, subjective norm, and perceived behavior control toward the behavior. Attitude is the degree of a person’s evaluation or appraisal of the behavior in question. Subjective norm points out to the perceived social pressure to perform or decline the behavior and finally, perceived behavioral control refers to people’s perception of ease or difficulty in performing the behavior of interest, or how much individuals perceive the behavior to be under their volitional control.

Although the success of TPB in terms of predicting behavior has been proven, it has been frequently criticized for its inadequacy. Ajzen (1991) argued that the model was in principle, open to add more predictors if they capture a significant proportion of the variation in intention or behavior. Therefore, the theory is still evolving and other researchers in various fields believe that adding other variables may increase the predictive ability of

the model. In this regard, we used an expanded version of TPB, adding two other variables as the predictors of behavioral intention and behavior: self-identity (how one perceives oneself) and habit (how one perceives routine behavior).

## 2. Methodology

Study population comprised farmers who were driving motorcycle in Shushtar district (N=4500) and study sample consist of 220 farmers who were selected through random sampling method. The sample size was determined using the Morgan Table. The study data were collected using a structured questionnaire. The data analyses were carried out by means of Structural Equation Modeling (SEM) using AMOS 20. In SEM, the measurement model is a Confirmatory Factor Analysis (CFA) model and the theoretical constructs are latent factors extracted from the manifest variables (Bagozzi, 1994). The measures that were theoretically assumed to be indicators of each construct must be acceptably one-dimensional.

## 3. Results

A structural equation modelling using AMOS 20, was applied to test the underlying hypotheses. The theory of planned behavior accounted for 80% of variance in intentions toward use a helmet. In This theory, self-identity ( $\beta=0.46$ ,  $P<0.0001$ ), Perceived Behavior Control (PBC) ( $\beta=0.31$ ,  $P<0.004$ ) and habit ( $\beta=-0.16$ ,  $P<0.019$ ) were identified as the predictors of intention. While in HBM, only self-efficacy was the predictor of intention. This theory accounted for 65% of variance in intention to use a helmet.

## 4. Discussion

Both TPB and HBM can explain farmers’ intention toward helmet use. However, the predictive power of the TPB is more than HBM.

## 5. Conclusion

This paper carried out based on two social-psychological models to examine decisions regarding use a helmet among Iranian farmers. These models successfully accounted for the intention to use a helmet, explaining a total 80% of variation in the intention variable for theory of planned behaviour and 65% of variation for health beliefs model. Therefore, the study results suggested that both frameworks are effective tools for the study question.

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### Conflict of Interest

The authors declared no conflicts of interest.