



Environmental education and elementary school student's behavior in green schools; Applying TPB Theory

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Article Info	Abstract
Article type: Research Article	The goal of this study was to analyze the environmental behavior of elementary school students in green schools using Ajzen theory of planned behavior (TPB). This quantitative study was conducted through a cross-sectional descriptive survey and using a questionnaire created by the researcher. The study had a statistical population of 229 elementary students. One hundred students were selected as the sample based on the table by Krejcie and <i>Morgan</i> . The data collected were analyzed using SPSS and AMOS software through Path Diagram Analysis. The findings indicated that attitude, subjective norms, and perceived behavioral control (self-efficiency) had a positive and significant association with intention. However, there was no significant relationship between intention and frequency of environmental behavior. The finding in this model suggest that other undiscovered factors may be involved in environmental behavior. Modifying the three components of attitude, subjective norms, and perceived behavioral control will therefore lead to the development and enhancement of intention for environmental behaviors. Other effective factors on environmental behavior, however, should be explored in further studies to minimize environmental damage and modify the course of environmental damage.
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Introduction

Environmental behavior refers to the interaction of a person with the environment. Each person's behavior toward the world is different, depending on their particular social, cultural, and personality conditions. Such behaviors may either be environmentally friendly or not (Foroutankia et al., 2011). Most environmental problems and risks can be

caused by human activity (Ahmadian and Haghghian, 2016). The modification of environmental behavior and attitudes can therefore help resolve multiple environmental problems at various levels of society (Naddafi et al., 2017). Most environmental scholars believe in a transition from physical and ecological sciences to the teaching of behavioral sciences in this area. They believe that

people should be encouraged to follow environmentally responsible behaviors (Safa et al., 2017). Several studies have highlighted the importance of training and its effects on environmental behaviors (Ertepinar et al., 2017; Erdogan, 2015; Salehi et al., 2012; Shirvani Bidabadi et al., 2013; Zsoka et al., 2013). Indeed, documents also show that behavior change will influence people's attitudes and knowledge (Azadkhani et al., 2016; Jafarnia and Afrooz, 2018 and Rajaician et al., 2014). In other words, disposition during such a process leads to an increase in the compatibility of the intentions or actions of the participants versus the environment. This training also promotes environmental awareness among individuals and develops environmentally friendly behaviors (Levine & Strube, 2012). Now the question is which classes to start training it. Elementary schools definitely have a special role in environmental education, Because of their ability (Ertepinar, 2013). Hence, at this point the research is sought to investigate environmental behaviors.

A review of literature suggests that, in addition to attitude, intention can also be effective in environmental behaviors of people. The results of Hejazi and Eshghi

(2014), Hejazi et al. (2017), and Ajan & Fishbein (1980) indicated a positive and significant relationship between the intention of individuals and environmental behaviors; modification of intention develops and strengthens environmental behaviors, thereby minimizing environmental damages and altering their pattern. The values have also a considerable role in the formation of environmental behavior at the societal level (Salehi and Karimzadeh, 2014). Given the importance of the subject, this study aims to analyze the environmental behavior of elementary school students using Ajzen's theory of planned behavior model (TPB) (the aspects of attitude, subjective norms, self-efficacy, environmental intention and behavior) (Figure 1). Indeed, the aim of this study is to answer four that previous authors have collated. The hypotheses are as follows:

H1: There is a connection between environmental attitude and intention.

H2: There is an association between subjective norms and intention.

H3: There is a correlation between perceived behavioral control and intention.

H4: There is a relationship between intention and environmental behavior.

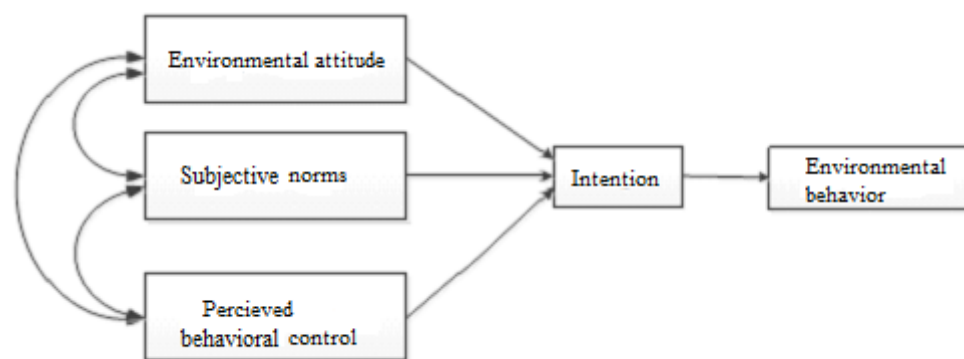


Figure 1. Research model
Adopted from the research of Ajzen (1991)

Materials and Methods

Study area

There are 180 state elementary schools in Kermanshah, of which four (Shahed, Nazparvarian, Basij, and Shahid Bakhtiari) began to educate their students about the environmental. There are 229 girl students

in these schools, studying in grades four and five. We have already implemented environmental programs for optimum use in the fields of waste separation, paper, water, electricity, and gas.

Methodology

A cross-sectional descriptive survey was conducted to assess the environmental behaviors of elementary school students in Kermanshah green schools, located in the west of Iran. The overall statistical population consisted of 229 students from 4 green schools, of whom 100 were studied using Krejcie and Morgan table and stratified random sampling (63 of 4th grade, and 37 of 5th grade). Research was to develop a self-designed questionnaire using the Ajzen's theory of planned behavior (1991). The questionnaire contained 34 questions and was split into five sections: attitude (5 items), subjective norms (7 items), perceived behavioral control (5 items), intention (8 items), and student's environmental behavior (8 items). This

questionnaire showed acceptable reliability ($\alpha > 0.7$) and validity. The data were eventually analyzed using SPSS and AMOS software.

Results

The average age of the participants was 11.5 years. Specifically, 58% of students lived with the families of two or fewer, and 42% in families of three or more. Also, 52% of participants were the first-born and 44% - third- born, fourth-born, or fifth-born. Further, 80% of participants rated good and very good economic status, while an average of 13% showed a weak and 7% very weak status. The level of education of the parents is shown in Figure 2.

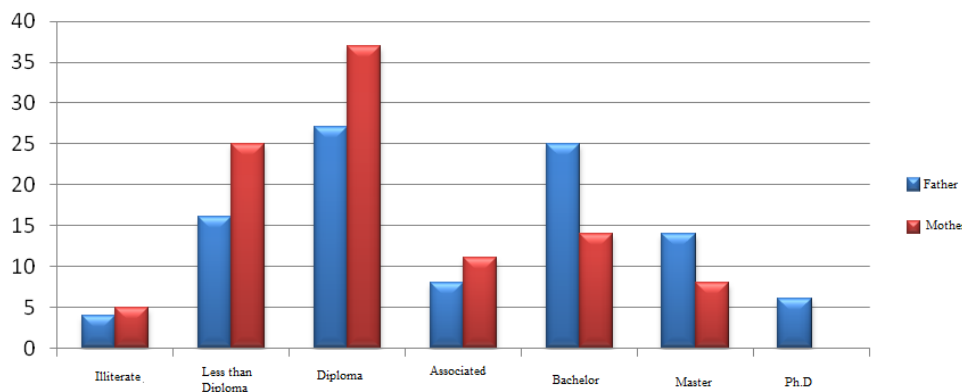


Figure 2. Educational status of the parent of the students in the study

The values for goodness fit are listed in Table 1. The chi-square ratio was 0.702, indicating fitness of the model. The normal fit index (NFI) was 0.973, suggesting

appropriate model fitness. The comparative fit index (CFI) was also 1, confirming the model properness. Finally, given the RMSEA index as 0.000, the model is fit.

Table 1. The values of goodness of fit

Model fit summary								
Absolute			Comparative		Parsimony			
CMIN	Df	P	NFI	CFI	CMIN/df	PNFI	PCFI	RMSEA

The model fit obtained is shown in Figure 3. As shown in this figure, the digits on the paths are coefficient of path or beta coefficients, while the digits on the rectangles indicate the rate of explained variance. In the following model, the variables of environmental attitude, mental norms, and perceived behavior control

regulation only explain 35% of intention, while 65% of intention in the population will be explained by other variables not included in the current study environmental behavior was not explained by intention as shown in the figure. Table 2 shows that the research hypothesis focused on the intention-behavior relationship has been

rejected as well. It can therefore be concluded that the factors in the model have

not led to the occurrence of environmental behavior in the students.

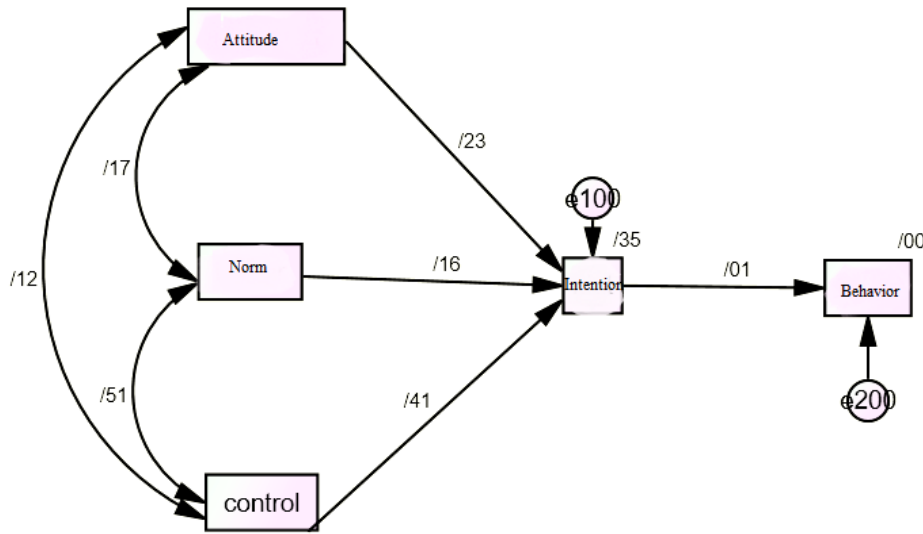


Figure 3. Research model retrieved from AMOS

After model confirmation, two partial indices of critical ratio (CR) and P were used to check the significance of the hypothesis. The values smaller than 0.05 for P indicate a significant difference in the calculated value at 95% for zero regression weights. If the value of the critical ratio of each variable is at 5% level within the range of (-1.96) to (1.96), it indicates that its effect on the dependent variables is not significant. (Momeni et al., 2013). Accordingly, the results indicate that the critical ratio of the relationship between subjective norms and intention as well as environmental intention is less than 1.96,

and the rest of relationships are significant. In addition, the results of research hypotheses are summarized in Table 2. As seen, there is a positive and significant relationship between environment attitude and perceived behavior control with the intention of 95% environmental behavior. The study’s first and second hypotheses are thus verified but the third and fourth hypotheses are dismissed based on the positive and significant relationship between subjective norms and intention, as well as between environment intention and environmental behavior.

Table 2. The values of model significant

Index		variables	Estimation	CR	P	Explanation
Intention	<---	Attitude				Accepted
Intention	<---	Norm				Rejected
Intention	<---	Control				Accepted
Behavior	<---	Intention				Rejected

Discussion

The results generally showed that the model is fit based on some fit indices such as CMIN, NFI, CFI, and RMSEA. Based on the results obtained from two partial indices of CR and P, the study’s first hypothesis has been confirmed so that the has a positive effect on the intention of

environmental behavior. That is how optimistic the attitude of the individual towards the environment is, the intention to perform environmental behavior is more likely. A large body of literature has documented the impact of attitude on behavior (Azadkhani et al., 2016; Ajzen, 2012; Jafarnia and Afrooz, 2018; Levine &

Strube, 2012; Rajaeian et al., 2015; Salehi and Ghaemi, 2013).

Based on the study's second hypothesis, which was rejected, subjective norms towards environmental behavior cannot have a positive and significant effect on the intention of environmental behaviors. In general, subjective norms reflect the social pressures that the person receives from society for doing a particular behavior (Zalli et al., 2010). The set of person's beliefs and values, their consistency and specific values with environmental behavior cannot, however, affect the increase of intention for environmental behaviors. Yet et al., (2014) discovered a positive and significant relationship between subjective norm and intention.

The study's third hypothesis was confirmed, where the perceived influence of attitudes toward environmental behavior had a positive and significant effect on environmental behavior intent. This indicates that students with strong beliefs and positive environmental thoughts have stronger intentions for environmental behaviors. In other words, such a feeling and perception is seen as a powerful prerequisite for occurrence of environmental behavior. Similarly, the results of studies by Zare Shahabadi et al. (2016) and Wilvoit (2009) indicated a positive and significant relationship between perception and the supporting behaviors for the environment.

The results showed that the study's fourth hypothesis was rejected and there was no significant relationship between intention and environmental behavior. In other words, the intention of environmental behavior will not lead to such behavior. However, Hejazi et al., 2017; Fishben and Ajzen, 1980; Hejazi and Eshaghi, 2014 discussed that intention of behavior will lead to its occurrence.

Conclusion

This study examined the role of environmental education in intention and

environmental behaviors of elementary school students. The researchers' main motive for such a subject was first to answer to the degree to which environmental education in green schools influences the intention of environmental behaviors, and secondly what factors pave the way for environmental behaviors in elementary school students to occur. The researchers thus tried to use the Ajzen model to investigate the case for study. Since there was no similar study in Iran in this regard, the results of this study offer a profound insight for the planners, experts, teachers, and managers of elementary schools. The research data typically suggested that society's mentalities towards environmental behavior could not have a positive effect on the students' intention for doing environmental behaviors and any intention will not lead to the same behavior. In other words, although the students' attitude is positive towards environmental behavior and they feel empowered for environmental behaviors, the occurrence of environmental behavior cannot be probable. The result may indicate that the something other than what was described in this study is effective in the occurrence of environmental behaviors. This means that that other factors not captured in this model can be effective when environmental behavior occurs. Modifying and changing the three components of attitude, subjective norms, and perceived behavior control will therefore lead to the development and reinforcement of intent for environmental behaviors. Other effective factors on environmental behavior occurrence, however, are to be explored in further studies to reduce environment damage and modify the course of environmental crisis. To control the training variable, it is recommended that researchers examine the behavior of the students so that they can comfortably sat that to what extent the behavior that occurred has been effective in the training process of schools.

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