Structural equation modeling of school truancy based on academic self-regulation and academic buoyancy in secondary school students

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A r t i c l e   I n f o

A B S T R A C T

Objective: The purpose of this research was to develop a structural model of school truancy based on buoyancy and academic self-regulation in second year high school students.

Methods and Materials: This research was of the type of descriptive-correlational studies. The current research statistical population includes all the students of the second year of Islamabad Gharb High School in the academic year 2020-21, which numbered 1523 boys, 1453 girls, and a total of 2976 people. The sampling method of this research was two-stage cluster sampling. In this way, 2 districts were randomly selected from among the districts of West Islamabad city, and 5 schools were randomly selected from those 2 districts; which was used by a total of 500 students. Data were collected using Martin and Marsh's academic buoyancy scale (2008), Bouffard et al.'s self-regulation questionnaire (1995) and the learning avoidance scale (Khormai and Saleh Ardestani, 2014). In the current research, SPSS and AMOS software were used to analyze data from Pearson's correlation coefficient and structural equations and to check the proposed research model.

Findings: The results showed that the conceptual model of school truancy based on the components of academic buoyancy and self-regulation in second year high school students is suitable. The path coefficient between academic self-regulation and truancy (p=0.001, β=0.62) and between academic buoyancy and truancy (p=0.001, β=0.57) was negative and significant.

Conclusion: It can be concluded that the conceptual model of school truancy based on academic self-regulation and school truancy in second year high school students had a good fit.

Keywords: Academic buoyancy, Academic self-regulation, Truancy, Student.

1. Introduction

School truancy refers to any deliberate, unauthorized, and illegal absence from school, which is different from chronic absenteeism from school. Additionally, being present at school without participating in classes can also be indicative of school truancy. Generally, school truancy can be defined as behavior involving non-attendance at school and classes. These students may leave home with the intention of going to school but do not attend, or they may run away from school and engage in activities of their own choice outside of school (Saleh Ardestani & Khormaei, 2019). School truancy is a type of deviant behavior that is observed more in higher grade students. Refusal to go to school and avoidance of school are other similar concepts to school truancy. In general, the common aspect of these concepts is the physical absence of students from school. School truancy is a behavioral problem that has negative consequences for society, individuals, and families, in addition to the financial costs and damage to education and training. School truancy is a potentially negative factor for students, families, schools, and society that highlights the need to pay more attention to the background, causes, and factors related to this behavioral phenomenon (Bembenutty, 2010).

School truancy is a phenomenon that occurs in society, and before any preventive action can be taken, it is necessary to identify the causes and factors that contribute to it. In 1996, Smith conducted research on two groups of school dropouts who were registered and unregistered. He classified the reasons for school truancy into 5 categories: 1- negative attitude and hatred towards school, 2- difficulty of lessons, 3- bullying by peers and other school staff, 4- influence of peers, 5- fear of the teacher (Smith, 1996). Some of the effective factors on school truancy include personality variables. One of these factors is self-regulation. Self-regulation is a process of self-guidance in which the learner can use their cognitive abilities to learn (Chmiliar, 2011). Self-regulated learning is the process of beliefs about the ability to perform behaviors, thoughts, feelings, and appropriate behaviors to achieve valuable academic goals (Bembenutty, 2008; Bembenutty, 2010). Although self-regulation has a natural basis and begins in childhood (Crockett, Raffaelli, & Shen, 2006), psychologists believe that environmental and social factors have a significant impact on the formation of self-regulation, and self-regulation is shaped by parental behavior (Saleh Ardestani & Khormaei, 2019).

One of the concepts involved in the personality variable is the concept of educational buoyancy. Educational buoyancy refers to the student's ability to overcome difficulties and challenges that typically arise in academic life, such as low grades, exam pressure, difficult assignments, teacher-student feedback, competition, and loss of motivation (Hoseinkhani, Ghasemi, & Hejazi, 2021). Therefore, it can be said that educational buoyancy is an important factor that forms the basis and foundation of a positive relationship between the student and their school and academic life. The student's ability to persevere in the face of small and large academic problems and return to their normal academic routine is an important part of their academic progress. In fact, through cognitive growth and positive emotional and behavioral orientations towards the school, as well as positive perceptions of oneself and cognitive growth processes in academic terms, the student can become more resilient (Martin et al., 2010; Martin & Marsh, 2008).

Therefore, based on previous empirical research, which did not provide a model showing self-regulation and educational buoyancy as predictors of school truancy in high school students, the goal of this study was to develop a structural model of school truancy based on educational buoyancy and self-regulation in high school students.

2. Methods and Materials

2.1. Study Design and Participants

This research was of the type of descriptive-correlational studies. The study population included all high school second-grade students in Islam Abad Gharb city during the academic year of 2020-21, with 1523 male students, 1453 female students, and a total of 2976 students. The sampling method used in this study was two-stage cluster sampling. Two regions of Islam Abad Gharb city were randomly selected, and five schools were randomly selected from these two regions, a total of 500 students were used in the study. The sample selection criteria for the research were: high school students, willingness to participate in the study, no serious medical illness, no major psychiatric disorder, and no substance dependence. The exclusion criteria included: psychiatric disorders, substance abuse, and failure to respond to all questionnaire questions.

The research was conducted in the following steps: after preparing the questionnaires and selecting the participants, the research questionnaires were provided to the students. Then, necessary explanations about how to complete the

questionnaires were provided by the researcher. Participants were asked to ask for more information if they encountered any problems in completing the questionnaires. The selected students completed the questionnaires after consenting to participate in the research and receiving the necessary assurance that their information would remain confidential. After the completion of the questionnaires by the respondents, the research questionnaires were collected. In the next step, the questionnaires were scored, and the data were entered into the software for statistical analysis.

2.2. Measures

2.2.1. Academic Buoyancy

Martin and Marsh (2008) buoyancy questionnaire scale was used in this study, which has four items and measures the level of agreement or disagreement using a seven-point Likert scale, ranging from strongly agree to strongly disagree. The reliability calculated by Cronbach's alpha coefficient was reported at 0.80, and its validity was confirmed using confirmatory factor analysis (CFA) and the 4-1-specificity criteria were respectively 0.66, 0.67, 0.73, and 0.75 (Martin et al., 2010; Martin & Marsh, 2008). In Iran, the reliability calculated using Cronbach's alpha coefficient for the overall scale was 0.87, and its validity was reported at 0.568 using criterion-related validity with the Pintrich's (2000) scale (Feizi, Heydari, & Rostaei, 2021).

2.2.2. Academic Truancy

The academic truancy scale was developed by Khorramaei and Saleh-Ardakani (2015) and consists of 21 items. The items were extracted through interviews with students and the analysis of these interviews. Then, the scale was administered to 237 students who were randomly selected through cluster sampling. The results of the factor analysis showed that this questionnaire has two sub-scales: academic disgust and school truancy. The academic disgust subscale is measured by items (2, 4, 6, 7, 9, 16, 18, 19), and the school truancy subscale is measured by items (1, 3, 5, 10, 11, 12, 13, 14, 15, 18). Saleh-Ardakani and Khorramaei (2019) used confirmatory factor analysis for the validation of this tool. The fit indices (Chi-square= 58.2, df= 06, RMSEA= 0.06, CFI= 0.96, and TLI= 0.97) indicated that the model fit the data well. Cronbach's alpha coefficient was used to calculate the reliability, which was 0.92 for the academic disgust subscale, 0.83 for the school truancy

subscale, and 0.93 for the overall scale (Saleh Ardestani & Khormaei, 2019).

2.2.3. Academic Self-Regulation

Bouffard Academic Self-Regulation Questionnaire (1995) is a 14-item questionnaire designed based on Bandura's social cognitive theory. The questions are scored on a Likert scale ranging from completely agree (score 5) to completely disagree (score 1), and questions 5, 13, and 14 are scored in reverse. Factor analysis has shown that this tool can explain 0.52 of the variance in self-regulation (Zarenezhad, Soltanikouhbanani, & Karshki, 2019).

2.3. Data analysis

SPSS and AMOS software were used for data analysis and to examine the proposed model of the research. For obtaining primary information regarding the measured variables, statistical indices such as mean, standard deviation, and correlation matrices were calculated. Structural equation modeling was also used to examine the relationships in the proposed model.

3. Findings and Results

The mean (standard deviation) age of the participants in the present study was 16.45 (5.29). Descriptive indices of research variables are presented in Table 1.

Table 1

Descriptive findings

Variable	Mean	SD	Max.	Min.
Academic buoyancy	18.50	4.52	27	9
School truancy	47.59	12.82	89	28
Academic self-regulation	39.63	9.41	67	18

The correlation matrix between research variables is presented in Table 2.

Table 2

Correlation matrix

Variable	1	2	3
Academic buoyancy	1		
School truancy	-0.61[**]	1	
Academic self-regulation	0.59[**]	-0.56[**]	1

**p<0.01

According to Table 2, the correlation coefficients between the educational self-regulation, school truancy, and educational buoyancy scales were statistically significant (p<0.05). The skewness and kurtosis coefficients of the distributions of research variables indicate that, due to their being normal, all research variables have an absolute value of skewness coefficient less than 3 and an absolute value of kurtosis coefficient less than 1, and thus no violation of normality of data can be observed. Therefore, it can be said that the distribution of research variables is normal. In the present study, the collinearity of variables was examined using the variance inflation factor (VIF) and tolerance statistics, indicating no multicollinearity among variables.

Table 3

Fit model indices

Value	Acceptable fit range	Index
0.96	0.90 -1	GFI
0.97	0.90 -1	AGFI
0.95	0.90 -1	CFI
0.75	0.50-1	TLI
0.94	0.90 -1	IFI
0.95	0.9-1	RFI
0.92	0.90 -1	NFI
0.53	0.50 -1	PNFI
0.54	0.50 -1	PCFI
0.081	0 -0.1	RMSEA
3.88	< 5	DF.CMIN

According to the results presented in Table 3, it can be said that the values of each of the fit indices are between 0 and 1 and are mostly higher than 0.90, indicating the desirability of the model. In the presented model, the absolute fit indices (GFI, AGFI) considered have values greater than 0.90, which are considered desirable values. The incremental fit indices, normed fit indexes and parsimony-adjusted measures (PNFI and PCFI), also indicate acceptable values, with values of each of these indices between 1 and 0.50. The root mean square error of approximation (RMSEA) also showed a value of 0.081, indicating a good fitting of the model. The standardized root mean square residual (SRMR) also had a desirable value of 0.088. Finally, the comparison of absolute fit indices for evaluating the overall model fit with the cut-off points for each of them shows that, overall, the collected data have been within the acceptable range and support and confirm the model developed. Therefore, the structural model of school truancy

based on educational self-regulation and educational buoyancy in high school students fits.

Table 4

Direct effects results

Path	b	S.E	β	P
Academic self-regulation to school truancy	-0.71	0.171	-0.62	0.001
Academic buoyancy to school truancy	-0.64	0.047	-0.57	0.001

According to the results presented in Table 4, the path coefficients between educational self-regulation and school truancy (p=0.001, β=-0.62) and between educational buoyancy and school truancy (p=0.001, β=-0.57) are significant and negative. Based on this, it was concluded that educational self-regulation and educational buoyancy have a significant negative relationship with school truancy.

Figure 1

Model with direct effects
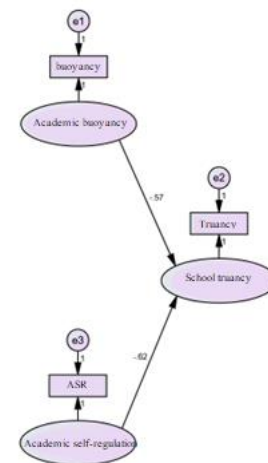
4. Discussion and Conclusion

The aim of the present study was to provide a structural model of school truancy based on academic buoyancy and academic self-regulation in high school students. The findings showed that the conceptual model of school truancy based on academic buoyancy and academic self-regulation in high school students fit well. The results were consistent with some previous studies (Hoseinkhani, Ghasemi, & Hejazi, 2021; Safarzadeh & Jayervand, 2019; Saleh Ardestani & Khormaei, 2019; Ziegler & Opdenakker, 2018).

In explaining these findings, it can be said that in the type of repetitive school truancy, the individual often wants to comply with someone more powerful and wants to be seen as glamorous alongside them. This can lead to more school truancy and may not be related to the individual's personality, but rather to the adolescent environment. It can be argued that for adolescents, school is the place where the first mistakes occur. Disrespect towards the teacher, bad behavior, and ultimately the suspension of the adolescent from school lay the foundation for delinquency. The delinquent adolescent becomes a disruptive finger-pointing individual. Suspension from school in the adolescent's thinking is equivalent to not seeing oneself as correctable or believing that parents have lost all hope of guiding them, and that only punishment can bring them back on track. The location of the school, its environment, and its classes are important for interest in the school. Crowded and populous schools where teachers are faced with numerous duties and obligations leave little opportunity for them to pay attention to the problems and needs of each student. Students who need help in their academic, social, or personal situation and have no hope of assistance may resort to compensatory behavior to some extent to attract attention and feel successful. Low teacher commitment to teaching is one of the causes of school truancy. The student may turn into a school escape when teachers do not care how their teaching is appropriate or how much students have understood, or when they do not realize how important their role is for the future of students. When such conditions prevail in schools, students gradually move away from school and, in other words, their environmental conditions turn them into school escapees. In school, incompatible students find serious problems in that school. Parents may consider compatibility and education responsibilities to be due to the teacher and the teacher may delegate education responsibilities to the parents, so that a consistent personality is not formed in the student and as a result, we will have students who will experience psychological problems. With these statements, it can be said that the issue of school truancy largely stems from the school environment and the unsuitable environment of the school can to a large extent predict school truancy.

5. Limitations & Suggestions

One of the limitations of the study is that it was conducted during the COVID-19 pandemic, which presented numerous challenges for the researcher, including the lack of cooperation from the target sample, limited resources such as school truancy, and limited collaboration from education personnel with the critical and sensitive issue of school truancy. It is recommended that future research be conducted to generalize findings in other cities and even countries and to compare the results with those of the pre-COVID era. Additionally, primary and middle schools should be examined, as well as different types of schools such as non-profit, government-run, Shahed, university-affiliated, and so on. Some of the recommendations should be geared toward educational policies in the form of a macro perspective, while others should be closer to the school environment and families, in a micro perspective. Fundamental changes in the educational system should be considered to provide more enthusiasm, motivation, and passion for students, for instance, updating the teaching content, paying attention to diversity, and emphasizing the concept of humanity and being human-centered rather than subject-centered. In the educational system, special attention should be paid to the economic, cultural, and social status of teachers, which could give them more motivation, leading to more motivation for students. In the micro perspective, the learning environment should be more encouraging, livelier, and more cheerful, to avoid the sense of being a stranger in school, and to avoid seeing it as a military camp from which one has to escape. Additionally, numerous workshops, seminars, and congresses should be held to move the educational environment in this direction.

Declaration of Interest

The authors of this article declared no conflict of interest.

Ethics Considerations

Ethical considerations were observed in this study, including confidentiality, privacy, and honesty.

Authors' Contributions

All authors equally contributed to this study.

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