Original Article

Structural Equation Modeling of Influential Factors on Academic Well-being of Students in Islamic Azad University-Kerman

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Abstract

Background and Objective: Academic well-being is a great matter of concern for the researchers interested in the quality of life. The present study aimed to assess and develop an effective model of influential factors on students' academic well-being.

Materials and Methods: This descriptive correlational study was conducted using structural equation modeling. The statistical population of this study included all 22,907students of the Islamic Azad University of Kerman during the 2018-19 educational year. Out of this population, 400 subjects were selected using stratified random sampling. A researcher-made questionnaire and educational well-being questionnaire (Tuominen-Soini et al.) were used to assess the influential factors on academic well-being. Data analysis was performed in SPSS software (version 23) and Amos software (version 20) using statistics methods, such as mean, standard deviation, Pearson's correlation coefficient, multivariate regression, and modeling structural equations.

Results: The data obtained from structural equation modeling indicated that the extracted conceptual model had acceptable fitness and mentioned variables described influential factors on academic well-being.

Conclusion: As evidenced by the obtained results, it can be concluded that stress, personality, achievement goal orientation, emotional achievements, psychological capitals, internal emotions, self-esteem, environmental supports, class management, and academic achievement were significant predictors of academic well-being.

Keywords: Structural equation modeling, Students, Well-Being

Background

The investigation of influential factors affecting educational success has been always one of the great concerns of researchers in the educational system, and these factors have been identified in several studies proportional to their importance and effect on the educational success [1]. Academic well-being has been long recognized as deriving educational satisfaction-that is to say, an individual's enjoyment and satisfaction of his/her role and experiences as a student [2]. Students who make good educational progress can perform their role more efficiently in their future life. On the other hand, academic failure imposes millions of dollars annually. Therefore, in light of academic well-being, human potentials are allowed to flourish, and society marches toward progress and development. The influential factors on students' well-being can be divided into personal and contextual factors [3].

Low levels of academic well-being can lead to educational dysfunction, interruption in learning, weakened ability, and hampered talents. They harm students' mental health, deprive them of a prosperous life, and lead them to illness instead of development, growth, and personality dynamics [4]. Students are one of the key beneficiaries of the higher education system, and their low quality of life or life satisfaction can be a starting point of deviation from their prophecy, ideals, and strategies to develop learning and higher education [5]. Academic education is a stressful period due to the presence of several factors which expose vulnerable students to the risk of special mental diseases. Among these factors, we can refer to life satisfaction, social support, inefficient attitudes, special attribution styles, special personality traits [6-7].

In recent years, researchers have used two initial conceptual approaches, namely virtualism and epicureanism to assess academic well-being. The virtualism has been designed as a psychological approach to mental health [8]. In this regard, Robert Lent [9] tried to provide a theoretical fraework to study mental well-being. He integrated virtualism and Epicureanism approaches in psychological well-being, providing a basis for inferring practical implications with the aim of individuals' well-being. Lent and Brown provided a cognitive-social well-being model, which is indicative of an effort to expand and develop Social Cognitive Career Theory [10]. Consequently, the identification of all influential factors on students' academic well-being is a matter of concern.

Objectives
The current study aimed to assess and develop an effective model of influential factors on students' academic well-being.

Materials and Methods
This descriptive correlational study was conducted using structural equation modeling. The statistical population of the present study included all 22,907 students of the Islamic Azad University of Kerman during 2018-19 academic year. To determine the sample size, 10-15 subjects were required for each latent variable in the research model, and based on the available variables, 380 cases were selected by stratified random sampling [11]. Therefore, 380 students of the Islamic Azad University of Kerman were selected as participants. The sampling method in the present study was stratified random sampling-that is to say, stratified randomization of three classes of bachelor's, Master's, and Ph.D. To this end, firstly, the list of bachelor's, Master's, and doctoral students was received; thereafter, 358 cases were randomly selected in proportion to the number of students in each faculty.
Influential factor on academic well-being questionnaire: In the present study, a researcher-made questionnaire was used to evaluate influential factors on academic well-being. To make this questionnaire, the following 10 effective factors were firstly identified by the Delphi method: stress, personality, achievement goal orientation, achievement emotions, psychological capitals, internal motivations, self-esteem, environmental supports, class management, and academic achievement. Total mean scores were used to measure students' academic achievement, and the research-made questionnaire was employed to assess other factors. This 106-item questionnaire was rated on a 5-point Likert scale ranging from

disagree=1 to strongly agree=5. Standard available questionnaires about each factor were used to make this questionnaire. Meanwhile, 10 academic experts and professors in educational sciences were interviewed; subsequently, the desired items were extracted and finalized. The content validity of the questionnaire was obtained at 0.87 based on the opinions of 10 experts, and the reliability coefficient of the whole questionnaire was gained using Cronbach's alpha.

Academic well-being questionnaire (Tuominen-Soini et al., 2012)
Tuominen-Soini et al. expanded the academic well-being questionnaire by modeling psychological well-being indices related to the school context. This 31-item self-report questionnaire is rated on a Likert scale. This questionnaire contains dimensions of school value (9 items which are rated on a 7-point Likert scale ranging from strongly disagree=1 to strongly agree=7), educational satisfaction (4 items which are rated on a 7-point Likert scale ranging from never=1 to always=7). Tuominen-Soini et al. reported that the validity of this scale is desirable. The factor loads of the emotional expression components, namely school value, academic burnout, educational satisfaction, and involvement in school activities, were obtained at 0.59, 0.69, 0.82, and 0.66, respectively. Therefore, factor loads of emotional expression components were higher than 0.3, indicating that factor loads for academic well-being components were acceptable as reported by Moradi et al. [12, 13].

For data collection, 445 copies of the above-mentioned questionnaires were distributed among the students in mentioned universities during 2019-2020 educational years after coordination with university authorities. A number of 400 complete questionnaires were obtained after correcting and ruling out incomplete ones. The date of the questionnaire was entered in SPSS software (version 22) to analyze data. Multiple regression was used for data analysis, and the structural equations model (SEM) was applied to fit the conceptual research models.

Results
Out of 400 respondents, 52.5% (n=210) were female and 47.5% (n=190) were male. In terms of age, subjects were in the age groups of ≤25 (42.3%), 26-30 (35.5 %), 31-35 (14.8%), and ≥35 years (7.5%). Regarding education, 55%, 31%, and 14% of subjects were bachelor's, master's, and doctoral students, respectively.
For the fitness index of X2/Df, values lower than 5 are suitable and indicative of goodness-of-fit of the

model as they approach zero. For indices of Goodness of Fit index (GFI), Incremental Fit Index (IFI), comparative fit index (CFI), and Tucker–Lewis index (TLI), the values of almost 0.90 and higher are regarded as acceptable goodness fit, indicating that the model is good. In relation to RMSEA, the value near 0.05 or lower indicates that the fitness of the pattern is good, and the value of 0.08 or lower is suggestive of the logical error of approximation. Therefore, given the values of fitness indices of the final pattern (formulated model) and the acceptable boundaries as mentioned above, it can be concluded that the provided model in this study is acceptable. Regression coefficients of the model indicated that the mentioned variables described the

factors that affect academic well-being properly. According to the obtained results of this model, it can be observed that regression coefficients for the susceptibility of influential factors from stress, personality, achievement goal orientation, emotion achievements, psychological capitals, internal emotions, self-esteem, environmental supports, class management, and academic achievement were obtained at 0.52, 0.42, 0.35, 0.46, 0.46, 0.38, 0.35, 0.3, 0.35, 0.39, respectively. Given that the significance level is lower than 0.05 ($\alpha = 0.05$), it can be argued that capitals, internal emotions, self-esteem, environmental supports, class management, and academic achievement are external hidden variables of the influential factors.

Table 1. descriptive indices of the study variables

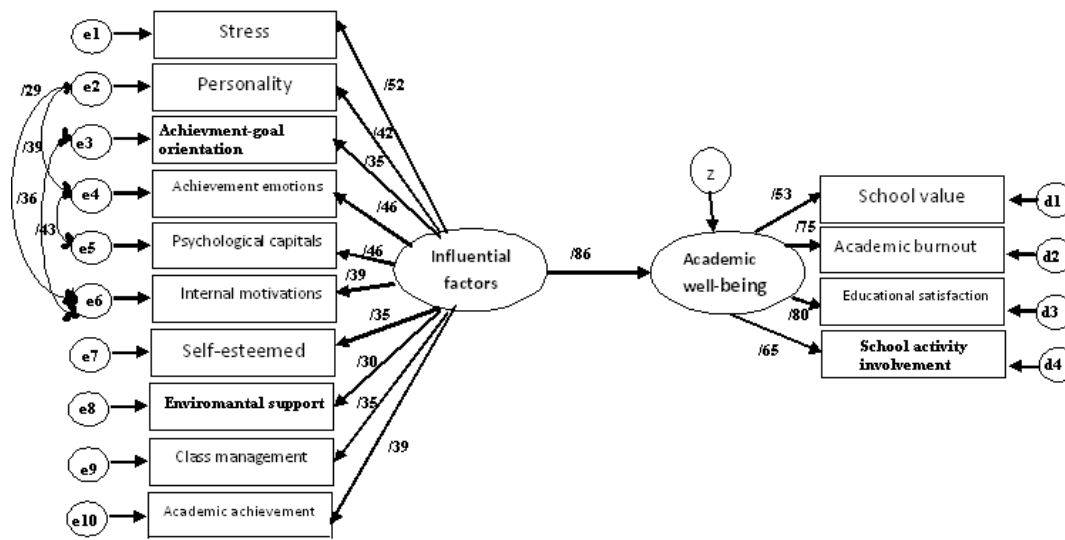| Variable	Mean	Sd.	Min	Max
Personal factors	3.07	0.255	1.9	3.8
Environmental factors	2.93	0.527	1	4.3
Educational factors	2.89	0.617	1	4.5
Stress	3.41	0.566	2	5
Personality	2.99	0.875	1	4.8
Achievement goal orientations	2.93	0.952	1	5
Achievement emotions	2.99	0.489	1.4	4.3
Psychological capitals	3.19	0.659	1	5
Internal motivations	3.06	0.752	1.3	5
Self-esteemed	3.01	0.494	1	4.3
Environmental supports	2.93	0.527	1	4.3
Class management	2.89	0.617	1	4.5
Educational achievement	16.37	1.776	10.2	
Academic well-being	4.2	0.84	2.1	7
School Value	4.34	0.893	1.2	7
Academic burnout	4.04	1.135	1	7
Educational satisfaction	4.12	1.175	1	7
School activities involvement	4.27	1.129	2	7

Figure 1. Amended patterns of influential factors on students' academic well-being in the present study

Table 2. Fitness indices for formulated patterns and the final pattern

Fitness indices of the pattern	X²	Df	X²/Df	NPAR	GFI	IFI	TLI	CFI	RMSEA
Formulated model	849.28	76	26.46	29	0.755	0.54	0.445	0.536	0.16
Amended Model (Final)	540.7	71	4.62	34	0.936	0.922	0.939	0.918	0.089
Independence model	1758.15	91	59.01	14	0.533	0.001	0.001	0.001	0.214

Table 3. Path structural pattern and their standard coefficients in the final model

Path	B	R^2	P
Influential factors→ stress	-0.52	0.27	0.001
Influential factors→ personality	0.42	0.18	0.001
Influential factors→ achievement goal orientation	0.35	0.12	0.001
Influential factors→ achievement emotions	0.46	0.21	0.001
Influential factors→ psychological capitals	0.46	0.21	0.001
Influential factors →internal motivation	0.38	0.14	0.001
Influential factors→ self-esteemed	0.35	0.12	0.001
Influential factors→ environmental supports	0.3	0.09	0.001
Influential factors →class management	0.35	0.12	0.001
Influential factors→ educational achievement	0.39	0.15	0.001
Academic well-being→ school value	0.53	0.28	0.001
Academic well-being→ academic burnout	0.75	0.56	0.001
Academic well-being→ educational satisfaction	0.64	0.64	0.001
Academic well-being→ school activity involvement	0.42	0.42	0.001
Influential factors →academic well-being	0.74	0.74	0.001
Personality↔ internal motivation	-0.29	-	0.001
Personality ↔ achievement goal orientation	0.36	-	0.001
Achievement emotions ↔ psychological capitals	-0.43	-	0.001
Achievement emotions ↔ personality	0.39	-	0.001
Personality ↔ psychological capitals	-0.34	-	0.001

Discussion

As evidenced by the obtained results, stress is a predictor of academic well-being affecting it in such a way that academic well-being is lower among those who have more stress and vice versa. In line with these results, Gustomes Carnier et al. [14] concluded that students' academic well-being is affected by the amount of stress they experience. In a similar vein, the results of a study by Jiang Xin et al. [15] pointed out that stress level predicted the initial level of psychological well-being of the students. Meanwhile, the changes in stress as time passes negatively predicted the alteration of psychological well-being. Karman et al. [16] concluded that academic stress describes a 6% variance in students' life satisfaction. Along the same lines, in their study, Choi et al. [17] referred to the significant effects of stress on academic well-being.

Other results suggested that personality is a predictor of academic well-being. It means that students' educational well-being is affected by personality traits in such a way it is experienced less frequently in neurotic persons, compared to those with other personality traits. These findings are consistent with the results of the studies conducted by Xio, Lui, lee [18], and Verburgen & Seles [19] who indicated that personality is one of the influential factors on academic well-being. It can be argued that personality traits affect behavior and understanding sometimes directly and immediately and sometimes through affecting intermediately factors that lead to the emergence of cognitive and behavioral consequences. In addition, there is a unique relationship between five major personality traits and academic well-being dimensions [7].

According to the findings of the present study, achievement-goal orientation is a predictor of academic well-being. In this regard, students' academic well-being will be higher when they specify their goals during the educational period and develop effective plans to attain these goals. Achievement-goal orientation in an educational situation indicates one's attitude to education, affecting his/her reactions in learning conditions [3].

Among the limitations of the present study, we can refer to data collection through questionnaires which might not have reflected realities due to different reasons. To overcome this limitation, it was better to use interviews or observations which were not possible due to lack of time, resources, and facilities. Another limitation was the lack of control over environmental factors since in some cases, two or more cases filled the questionnaire in cooperation with each other. In this respect, they might have been affected by their colleagues and do not fill the questionnaire based on reality. It is suggested that future studies be conducted in other public universities in Kerman province and the results be compared in order to reassure the findings. To increase the generalization capability of the study results to all statistical populations of higher education, it is recommended to recruit statistical samples with varied cultures and geographies. Furthermore, it is suggested that the same studies be performed in other provinces of the country and their results be compared with the findings of the current study.

Conclusion

It can be concluded that stress, personality, achievement goal orientation, emotional

achievements, psychological capitals, internal emotions, self-esteem, environmental supports, class management, and academic achievement are significant predictors of academic well-being.

Compliance with ethical guidelines

All ethical principles were considered in the current research. The participants were informed about the purpose of the research and its stages. Informed consent was obtained from the subjects. They were also assured of the confidentiality of their information. Moreover, the subjects were free to withdraw from the study if desired. They were also informed that they would be provided with the results of the research.

Authors' contributions

Conceptualization [Esmat Hassanpour]; Methodology [Amanullah Soltani]; Investigation [Zahra Zainuddin Meymand]; Writing – Original Draft [Alireza Manzari Tavakoli]; Writing – Review & Editing, Author names [all author]; Funding Acquisition, [all author]; Resources, [all author]; Supervision, [Amanullah Soltani].

Conflicts of Interest

The authors declare that they have no conflict of interest regarding the publication of the present study.

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