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# Prediction of Academic Motivation Based on Variables of Personality Traits, Academic Self-Efficacy, Academic Alienation and Social Support in Paramedical Students

**Ahmad Ahmadi[1], Arash Ziapour[2] ⓘ, Javad Yoosefi lebni[3], and Nafiul Mehedi[4] ⓘ**

## Abstract

**Background:** Academic motivation is one of the indices of success in scientific activities. Therefore, the goal of the present research is to predict academic motivation based on variables of personality traits, academic self-efficacy, academic alienation, and social support in students studying in different fields of paramedicine.

**Method:** The research was correlation-descriptive in which 183 paramedical university students in the academic year of 2019-2020 were selected by a two-stage cluster random sampling method, studying in the Kermanshah University of Medical Sciences. The data were collected through the Vallerand Academic Motivation questionnaire, NEO Personality Inventory Test, Sherer Self-Efficacy questionnaire, Fleming Social Support questionnaire, and Johnson Academic Alienation, and the collected data were analyzed (Pearson correlation coefficient and multiple regression) using SPSS V.22 software.

**Findings:** The results showed that personality traits of extroversion ($\beta = 0.255, p < 0.01$), openness to experience ($\beta = 0.185, p < 0.01$), conscientiousness ($\beta = 0.136, p < 0.01$), and self-efficacy could predict academic motivation, significantly; but neuroticism ($\beta = -0.188, p < 0.05$), and academic alienation ($\beta = -0.111, p < 0.05$) reversely related to academic motivation. Self-efficacy ($\beta = 0.121, p < 0.05$) could significantly predict academic motivation. There was also a significant relationship between social support and academic motivation.

**Conclusion:** The results of the research illustrated that some of the personality traits and self-efficacy had a positive role in predicting academic motivation among paramedical students, and neuroticism and alienation had a reverse negative role in academic motivation. Therefore, in order to promote the academic level of students, it is necessary to improve the harmful effects of self-efficacy and some personality traits that improve better learning performance and quality.

## Keywords

academic motivation, personality traits, academic self-efficacy, academic alienation, social support

## Introduction

Motivation is one of the most influential factors for inspiring people to accomplish their goals.[1] It is the heart of learning, and learning is the goal of education. It is considered as a prerequisite of learning in the form of psychological preparedness and quite noticeably affects learning and education.[2] Education involves many personal and social benefits, and like any other human activity, it requires motivation. Student's academic motivation has composed of many complex and dynamic beliefs and opinions, which is formed gradually during education and encourages students to achieve a stable and comprehensive of abilities and competences in

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school learnings.[3–5] Many studies have examined the relationship between academic motivation and various variables. Personality traits, including academic self-efficacy, academic alienation, and social support are among the variables that affect students' academic motivation.[6] The findings of Poorpat's research in studying the relationship between personality and academic performance using meta-analysis showed that academic performance had a significant and positive relationship with adjustment, deontology, and openness to experience.[7] In this regard, Rosandro et al. in their study, Personality traits and Genera Intelligence as Predictors of Academic Performance showed that the results of the structural equation model expressed that general intelligence, deontology, extroversion, and neuroticism had a significant relationship with academic performance.[8] Another single variable examined in this research was academic self-efficacy. Self-efficacy was a key personal source in the evolution, adjustment, and personal change, and it was the person's subjective judgments about her/his abilities and competences to organize and execute the courses of needed actions for upcoming events affecting her/his life. Self-efficacy has been considered as a key structure to improve learning and academic progress; many studies have shown self-efficacy has a positive and significant relationship with academic progress.[9] Students with positive beliefs about their competences had a better academic performance, and conversely, students who had negative judgments about their competences and abilities, such as low self-efficacy, had weak motivation and performance in educational matters.[10,11] Abedini in his study examined the academic progress of high school students, based on self-efficacy in which he concluded there was a significant relationship between self-efficacy and field of study in predicting academic progress of the students.[12]

Academic alienation refers to emotional or cognitive separation from different contextual aspects of education like the procedure of learning and education, the atmosphere of the university, lecturers, and other students as well as the sense of separation from their scientific products or to be concise "academic human."[13] In their study, Hematti et al. categorized academic alienation into five dimensions: powerlessness, meaninglessness, anomaly, pessimism, and social isolation. Powerlessness refers to the student's perception of a lack of personal control over learning; anomaly illustrates a lack of appropriate acceptable behavior, including academic dishonesty; meaninglessness refers to students' interpretation regarding the fact that their curriculum is not related to the needs of present and future; social isolation is marked by loneliness and separation of students from lectures and their peers, and in general, separation from society. Therefore, academic alienation has a great impact on the academic motivation of the students.[13] Etanfo reported a negative correlation between alienation and motivation of progress in mathematics, gender, and academic alienation, which was significant at the level of 0.05.[14]

One of the social determinants of academic motivation is social support, which refers to a social network that provides individuals with sensible and psychological resources. It has a deep impact on a student's everyday life. Lack of on-time and enough social support to the person when she/he does need it, contribute to negative impacts such as isolation, depression, decreased self-esteem, academic burn out, and helplessness.[15] Another positive impact of social support is student's improved adaptation with university.[16] Although social support is in a positive correlation with academic self-efficacy, it received feedback from others and the amount of received reassuring from them regarding an individual's competences to accomplish academic activities can improve her/his academic self-efficacy.[17] Since paramedical academic disciplines deal with human life, therefore decreased students' motivation in this field can have catastrophic consequences on the community's health, which in turn wastes a lot of resources. One of the most important problems is the high rate of abandonment in this field of study by students. Each year, about 15 to 20 percent of paramedical students around the world drop out of university, which can lead to a shortage of paramedical staff.[18] In other words, a high decline of paramedical students and reluctance of continuing in this profession has led to many studies on academic motivation of paramedical students; the reports presented about the students purports that many students have not had enough motivation during their studies and their desire to work in this profession has decreased. Any deficiency and inadequacy on the part of paramedical students will affect the quantity and quality of health care and endanger the health of all the members of society.[19] Based on what was presented and regarding previous researches, the goal of the present research is to predict academic motivation based on variables of personality traits, academic self-efficacy, academic alienation, and social support in students studying in different fields of paramedicine in year of 2019–2020.

## Methods

### Study Design

This is a descriptive-correlation study. In this study, the statistical population was selected among the paramedical students of Kermanshah University of Medical Sciences located in western Iran studying in the school year of 2019–2020, 183 students were selected using a two-stage cluster random sampling method. Questionnaires were distributed at the university and Data collection took 6 months and 8 questionnaires were incomplete therefore were not reviewed. The volume of the sample was selected based on Kerjecie-Morgan Model. The inclusion criteria for the study included bachelor and master students of paramedical disciplines and their willingness to participate in the survey. We excluded some participants who showed no interest in the study or returned incomplete questionnaire forms. The collecting tools of the

standard questionnaire data were as follows: in order to measure academic motivation, Valrand Academic Motivation Scale was used, which is based on the Self-Determination Theory of Deci and Ryan and was designed and validated by Valrand, Blais, Briere & Pelletier in Canada.[20] This questionnaire has 28 items, in which the respondent specifies her/his level of agreement and disagreement for each item based on a 7-point Likert Scale. The reliability of this tool in Cronbach's Alpha Coefficient was 0.87.[21] In this continuum, "1" indicates "strongly disagree" and "7" indicates "strongly agree" and "4" indicates the middle and measures the three components of intrinsic motivation, extrinsic motivation, and academic lack of motivation. Neo-FFI short-form questionnaire was used to measure personality traits. This questionnaire includes 5 domains and 60 items. These domains are respectively, neuroticism (N), extroversion (E), openness to experience (O), agreeableness (A), and conscientiousness (C). Each of the five domains is measured with 12 items (questions). Each question should be responded on a Likert scale as strongly disagree, disagree, undecided, agree, and strongly agree. The reliability of all subscales was obtained with Cronbach's alpha above 0.70.[22] Sherer's self-efficacy questionnaire was used to measure the self-efficacy variable. This questionnaire has 17 items and measures the individual's ability to overcome different situations.[23] Sherer et al. (1982) without specifying the items and factors believe that this scale measures three aspects of behavior including, tendency to initiate, continuing to try to complete the behavior, and resistance against obstacles. Sherer's general self-efficacy scale has 17 items. On a 5-point Likert scale, the items are scored from 1 to 5. Items number 1, 3, 8, 9, 13, and 15 are scored as "strongly agree, agree, neither agree nor disagree, disagree, strongly disagree" and the remaining items are scored conversely. The lowest score on this scale is 17, and the highest score is 85; higher scores indicate a higher sense of self-efficacy. The reliability of this tool was 0.83, according to Cronbach's Alpha coefficient.[24]

To examine the academic alienation of students Johnson's academic alienation questionnaire[25] was used. This questionnaire is composed of 4 items, and they are based on a 5-point Likert scale ranging from "totally wrong" to "totally correct." In one research, Cronbach's alpha was 0.79, which indicated good reliability for this tool.[26] Also, the confirmatory factor analysis method was used to examine its validity, and fit indices indicated a good validity for this questionnaire.[27] In the present research, Cronbach's alpha coefficient was obtained 0.89 for this questionnaire. The social support scale developed by Fleming, Baum, Gasril, and Gachal was used to measure social support.[27] This questionnaire has 25 items. The reliability of the social support questionnaire was 0.86, using Cronbach's alpha coefficient.[28] The content validity of this questionnaire was inspected by faculty members and professors. Finally, after the distribution of questionnaires among students, data was collected and analyzed by SPSS V. 22 software, and the statistical

test of multiple regression was performed. Ethical approval was obtained from the Ethical Review Committee of KUMS (IR.KUMS.REC.1398.703). The purpose of the study was explained to all participants. Written informed consent was obtained from all participants, and they were assured of anonymity and confidentiality.

## Results

Table 1 illustrates the demographic characteristics of paramedical students of Kermanshah University of Medical Sciences.

Table 2 Depicts mean and standard deviation of personality traits scale of academic self-efficacy, academic alienation, and social support with the academic motivation of paramedical students.

The Pearson regression for examining the relationship between personality traits, self-efficacy, academic alienation, and social support are presented in Table 3. Between personality traits, there is a negative correlation between neuroticism with academic motivation, and the correlation is positive and significant ($p < 0.05$) between extroversion, openness to experience, and conscientiousness with academic motivation (Table 3).

Multiple regression test was used to predict academic motivation according to variables of personality traits, academic self-efficacy, academic alienation, and social support in students of paramedicine. Table 4 presents the results of step-by-step regression analysis to predict academic motivation by personality traits, academic self-efficacy, academic alienation, and social support. According to the results of the table, the coefficient of determination (R squared) is equal to 0.476, which indicates that predictor variables have defined 47.6 percent of the academic motivation variance of the students (Table 4).

## Discussion

The present research aimed to examine the role of personality traits such as academic self-efficacy, academic alienation, and social support in predicting students' motivation. A total of 81 male and 102 female formed the population of the study.

**Table 1.** Demographic Characteristics of Paramedical Students.

| Variable | Groups | Frequency % |
|---|---|---|
| Gender | Male | 81(44.27) |
| | Female | 102(55.73) |
| Age | 19–20 | 66(36.06) |
| | 21–23 | 83(45.35) |
| | 24–26 | 24(18.57) |
| Education | Bachelor | 138(75.40) |
| | Master | 45(24.59) |
| Marital status | Single | 124(68) |
| | Married | 59(32) |

Also, the age of the studied population was ranging from were at the master's level. The mean and standard deviation of the indices, such as social support, academic motivation, and self-efficacy respectively constituted the highest values.

The results of the present research indicated that from personality traits, neuroticism was in a significant inverse relationship with academic motivation. This finding is in line with Lidera's research, conducted in one of the universities in the Republic of Estonia.[29] It was also matched with the finding of Komarraju et al.,[30] and Freund and Holling.[31]

Neuroticism is a component of personality, in which at one end, stability and anxiety are low, and at the other end, stability and anxiety are high. Therefore, it is clear, individuals with high levels of neuroticism, anxiety, and arousal cannot have the proper academic motivation and academic performance.

The results of the research showed openness to experience, conscientiousness positively predicted academic motivation. In line with these findings, Farnham and Promozik found this relationship meaningful, in a study on student's individuals with a high level of openness to experience were more willing to help others.[31] In a study in New Jersey University conducted by Liao et al.[32] reported that the personality trait of openness to experience led to creating and maintaining a useful relationship with classmates, and lectures. Conard[33] in his study in 2006 stated that the personality trait of agreeability was in a positive and significant relationship with success, and academic motivation and thus, it verified the results of the present research. In analyzing these findings, it can be said individuals with elevated academic motivation who are successful in their profession can increase their levels of aspiration realistically. They tend to do jobs that are more competitive and harder to do and cannot be adapted to the current situation.

**Table 2.** Mean and Standard Deviation of Indices.

| Variable | | Mean ± SD | Rank |
|---|---|---|---|
| | Neuroticism | 25.10 ± 3.54 | Ninth |
| Personality | Extroversion | 32.38 ± 5.41 | Forth |
| Traits | Introversion | 28.97 ± 4.15 | Sixth |
| | Agreeability | 31.14 ± 6.82 | Fifth |
| | Conscientiousness | 27.50 ± 4.38 | Eighth |
| Self-efficacy | | 35.08 ± 7.12 | Third |
| Academic alienation | | 28.19 ± 4.73 | Seventh |
| Social support | | 46.95 ± 9.39 | First |
| Academic motivation | | 37.61 ± 8.91 | Second |

**Table 3.** Correlation Coefficients Matrix Between the Variable of the Research.

| Variable | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 |
|---|---|---|---|---|---|---|---|---|---|
| 1. Nerouticis | 1 | | | | | | | | |
| 2. Extrovorsion | −0.282** | 1 | | | | | | | |
| 3. Oppenness to experience | −0.306** | 0.452** | 1 | | | | | | |
| 4. Agreeability | −0.339** | 0.298** | 0.327** | 1 | | | | | |
| 5. Conscientiousness | −0.244** | 0.340** | 0.409** | 0.511** | 1 | | | | |
| 6. Self-efficacy | −0.280** | 0.217** | 0.346** | 0.277** | 0.286** | 1 | | | |
| 7. Academic alienation | 0.140* | −0.306** | −0.325** | −0.275** | −0.275** | −0.414** | 1 | | |
| 8. Social support | −0.223** | 0.217** | 0.325** | 0.148* | 0.156* | 0.274** | 0.181** | 1 | |
| 9. Academic motivation | −0.368** | 0.391** | 0.457** | 0.122 | 0.464** | 0.503** | −0.429** | 0.097 | 1 |

*Meaningfulness at 0.05 level. **Meaningfulness at 0.01 level.

**Table 4.** Regression Analysis for Prediction of Academic Motivation Through Personality Traits, Academic Self-Efficacy, Academic Alienation, and Social Support.

| Model>> | Unstandardized coefficients | | Standardized coefficients | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | B | Standard error | Beta | t | Level of meaningfulness | R | R squared | F value | Level of meaningfulness |
| Stability | 31.134 | 2.740 | | 11.364 | 0.001 | 0.690 | 0.476 | 54.881 | 0.01 |
| Neuroticism | −0.568 | 0.169 | −0.188 | −3.353 | 0.001 | | | | |
| Extroversion | 0.685 | 0.161 | 0.225 | 4.260 | 0.001 | | | | |
| Openness to experience | 0.446 | 0.115 | 0.158 | 3.893 | 0.001 | | | | |
| Conscientiousness | 0.280 | 0.107 | 0.136 | 2.604 | 0.010 | | | | |
| Self-efficacy | 0.358 | 0.151 | 0.121 | 2.377 | 0.018 | | | | |
| Academic alienation | −0.335 | 0.153 | −0.111 | −2.194 | 0.029 | | | | |

In this research, extroversion directly had a significant relationship with academic motivation. In a study, conducted in 2003, Farnham and Promuzik on the students concluded that academic motivation was higher among extrovert students.[31] The role of conscientiousness (being conscionable) in academic motivation was found significant in this study, and it was in line with Petska's study at Lincoln University.[34] It is also matched with the findings of researches conducted by Camro, Prumuzik, Farnhaum, quoted in Zhang,[35] Pourmirza Kalhori et al.,[36] and Wagerman and Funder.[37] Given that people with high scores on conscientiousness had characteristics such as order, effort, and responsibility. It was inferred that these characteristics influenced the person to continue studying with more perseverance and responsibility, and as a result, achieved higher success and progress.[38]

According to the findings of the present research, there was a significant relationship between academic self-efficacy and students' academic motivation. In other words, self-efficacy predicted academic motivation, this finding is in line with studies conducted by Tirgari et al.[39] Tella and Tella,[40] Hayashi et al.[41] Yazici et al.[42] Tabernero and Hernandez[43] also reported that self-efficacy was one of the academic motivation predictors. Niehahaus et al. confirmed the effective role of self-efficacy in the prediction of academic motivation. By explaining this finding, it can be said that high self-efficacy leads to high levels of motivation and continuous effort; Effective ideas can also determine the direction and path of people's lives.[4,11] Since the students participating in the present study had a high level of self-efficacy and according to the results of Betoret's research,[44] people with high levels of self-efficacy had more adaptive resources than stress in work and study situations and enjoyed more from their academic performance. Accordingly, the high level of self-efficacy of paramedical students helped them to enjoy their academic activities more and improved their motivational orientation. The results of this study also showed that the correlation between the variables of academic alienation and academic motivation was inversely significant. These results are consistent with the studies conducted by Atnafu,[14] Huscher and Hagenauer[45] Barnhardt and Gins.[46] Because students with academic alienation felt a lack of personal control in the learning process, and they did not see legitimacy in the learning process as well as isolated themselves from others. So a lack of academic motivation was not out of the question.

According to the findings, social support could not predict students' academic motivation. The results of the studies conducted by Gao et al.[47] and Adler et al.[48] showed that there was no direct relationship between social support and academic motivation, rather indirectly and through intermediary variables, it was self-efficacy beliefs that exerted their influences. Marsh[49] found that students with high self-esteem appeared to be more energetic in their educational processes, and as a result, their academic motivation increased indirectly.

## Strengths and Limitations

Among the strengths of the present study, the four variables of personality traits, academic self-efficacy, academic alienation, and social support were examined simultaneously on academic motivation, while in other studies, the effect of one or two variables was measured. One of the limitations of the present study was that the statistical population was limited, who were students studying in paramedical disciplines. Also, the use of semester grades (scores) as an indicator of academic achievement was associated with the limitations. So, it is recommended that researchers use standardized test scores in future research. It is also suggested that the current issue be addressed in other universities and disciplines.

## Conclusion

The results of the present research illustrated that openness to experience, conscientiousness, and self-efficacy meaningfully predicted academic motivation in paramedical students but neuroticism, and alienation conversely affected academic motivation. Besides, social support and agreeability did not play any role in predicting students' academic motivation. Therefore, in order to improve the academic motivation of students, and to prevent harmful effects of academic alienation and neuroticism in creating academic problems, it is necessary to provide a setting to improve self-efficacy and some other personality traits.

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### Declaration of Conflicting Interests

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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