

The Predictive Validity of the University Student Selection Examination

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Abstract

The main purpose of this study is to investigate the predictive validity of the 2003 University Student Selection Examination (ÖSS). For this purpose, freshman grade point average (FGPA) in higher education was predicted by raw scores, standard scores, and placement scores (YEP). This study has been conducted on a research group. In this study, six programs –which accept students by verbal, numerical and equal weighted scores– were selected. These programs are agricultural engineering, civil engineering, law, business administration, social studies education, Turkish Language and Literature. The study was conducted with 2103 students from these programs. Data related with dependent variables used in this study has been gathered from universities' student affairs information centers. Data related with independent variables has been received from the Student Selection and Placement Center (OSYM). Stepwise regression analysis was used in order to analyze the data. It was found that the significant predictors of students' FGPA is YEP which is used for the placement of agricultural engineering, civil engineering, and social studies education program students, Y-OSS SAY scores which is not used for the placement of business administration program students and three YEP's (Y-OSS SOZ, Y-OSS SAY, Y-OSS EA) which is used for the placement of law program students.

Key Words

Predictive Validity, Student Selection Examination, Grade Point Average Regression Analysis.

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Attending to universities is only possible by taking the University Student Selection Examination (ÖSYS) in Turkey. Students take different exams in different levels of the educational system until they attend to universities, and are evaluated depending on the results of the exams they take. The number of students who graduate from secondary educational institutions and those who apply for higher education programs exceeding the higher education placements or the existence of the conditions that are prerequisite for education programs make the selection process compulsory. Table 1 presents the number of candidates who applied for the ÖSYS between 2003 and 2006 according to their states of education and the number of candidates who were placed into higher education programs as the result of ÖSYS

Table 1

Candidates Who Applied for the ÖSYS between 2003 and 2006 and Were Placed in Any Higher Education Programs

	2003	2004	2005	2006
Candidates Applied for the SSPE	1.502.644	1.786.963	1.730.876	1.678.383
Candidates Applied for the Examination in the Last Year (3) of High School	521.331	711.287	639.024	720.671
Candidates Who Were Not Placed in Previous Years	635.134	704.472	796.138	695.894
Candidates Placed Previously	238.177	245.361	155.274	220.978
Candidates Completed a Higher Education Program	57.018	66.821	50.886	40.840
Candidates Placed in Higher Education	567.511	574.867	543.035	590.509

* Reference: Baykal (2006), ÖSYM (2007b).

As seen in Table 1, the number of individuals applied for the ÖSYS has increased in general terms, though it differs according to years. Parallel to that situation, it is also seen that the candidates who were placed in a higher education program have partially increased. 31% - 37 % of the candidates who had applied in order to be placed in higher education programs between 2003 and 2006 were placed in higher education

on programs (associate degree, bachelor's degree, the open university, etc.). The rest of the candidates were not placed in any higher education programs. Those candidates, who were not placed in any higher education program, cause a particular pile-up in universities year by year. This situation positively contributes into the programs to select qualified students for their purposes yet it becomes harder for the students to be placed in the higher education programs, and this situation consequently raises the importance of the student selection system for universities.

The quota of university programs being less than the number of secondary school graduates who attend these programs or the main requirements for the education programs make the selection process compulsory.

In the selection process, it is only possible to choose the students who meet the desired requirements by using a valid, reliable and available testing instrument. To be aware of the psychometric properties of tests like validity and reliability not only helps to come to some conclusions about these tests but also gives information about the appropriateness of the decisions given on students.

The center of Selection and Placement of Students in Higher Education Institutions in Turkey aims to choose students who are supposed to be successful in University Education Programs. In other words, it aims to choose the students whose possibilities of being successful are more than other students in a University Education Program (ÖSYM, 1982). This is only possible by using valid and reliable tests.

The scientific evidence of to what extent the Student Selection and Placement Center (OSYM) could reach this aim is acquired by the studies conducting on the validity studies. The validity studies of the Selection tests are mostly being conducted on the predictive validity (Baykal, 2006).

Various research has been done about the validity of the tests which have been used for selection and placement of students (Aşkar, 1985; Tezbaşaran, 1991; Büyüköztürk, 2004; Yağımlı, 2004; Gülleroğlu, 2005). The most comprehensive research among them is the one which has been done by ÜSYM in 1979 and the one which has been done by ÖSYM in 1982 (ÜSYM, 1979; ÖSYM, 1982). The studies related to the validity of the tests which have been used for selection of students have been done since 1950s in abroad. Recently in USA it has been

seen that so many predictive validity studies have been done related to SAT, ACT, MCAT on wide samples (Breland, Kubota & Bonner, 1999; Garton, Dyer, King and Ball, 2000; House, 2000; Geiser and Studly, 2002; Armstrong and Carty, 2003). Results of those studies show that relationships among variables and ratio of variance in dependent variable explained by predictive variables are higher than those of in Turkey.

Up to now, it has not been encountered a predictive validity research by using the students' raw scores that belong to ÖSS, standard scores and the scores relating to placement together. Therefore it is important to know which of the point types predict the academic success of the students who are accepted to University Education programs better. For the reasons explained above, the present study tries to determine the differences in relations between the dependent variables (criteria) and independent variables (predictor) by studying on the heterogeneous groups about the different point types of ÖSS's and Primary school achievement grades' power on predicting the academic success at University.

Method

This relational descriptive study has been conducted on a research group. In this study, six programs –which accept students by verbal, numerical and equal weighted scores–, were selected. These programs are agricultural engineering, civil engineering, law, business administration, social sciences teaching, Turkish Language and Literature programs of State Universities. The study was conducted with 2103 students from these programs.

Data used in this study were collected from two sources. It related with dependent variables used in this study has been gathered from Data related with independent variables have been received from OSYM.

The academic grade point averages of the students in the programs have been tried to taken out of 100's grade system. Since some educational programs use the 4's grade system, the final general average points of the students in these programs at the end of the year has been converted in to the 100's grade system. The collected data have been transferred in to the SPSS 13.00 packet program.

In data analysis, SPSS 13.00 was used. The data obtained from faculties', student affairs departments and universities' student affairs information

centers and OSYM was conducted with stepwise regression analysis. Before this analysis conducted in our investigation, the assumptions of the analysis were investigated.

Results

The findings in this study are as follow: The Freshman Grade Point Average (FGPA) of the students who are already placed in programs, that is 8 % in agricultural engineering program, 40 % in civil engineering program, 35 % in law program, and 4,5 % in social studies education program, are announced according to the points that are basic to the replacement. In business program, 27% of students' FGPA is explained in Y-ÖSS SAY point and in Law program 35 % of FGPA is explained in all three points that are basic for placement. In predicting the FGPA in Law Program; the point of Y-ÖSS EA is the first, Y-ÖSS SÖZ is the second and Y-ÖSS SAY is the third important predictive variable. It showed that the FGPA of the students in Turkish Language and Literature program was announced in raw score which mostly belong to the sub-tests of social sciences and Turkish but when looking at the regression co efficiencies, it is concluded that the relations is negative.

Discussion

Results of the regression analysis which was done to predict students' academic achievements showed that the FGPA was mostly explained in placement points in all programs except for the Turkish Language and Literature program, and raw scores and standard scores were generally explained similar. Having the placement scores of students explained more is due to the contribution of HSGPA. As mentioned in the researches conducted by Hanford (1985), Baron and Norman (1992), Myers, & Pyles (1992), Wolfe and Johnson (1995), Deaton and Schutz (2001), House and Xiao (2001), and Noble and Sawyer (2002), this result shows that FGPA is explained more together with the SSE scores of the students and HSGPA. Besides, this result shows that the test scores and FGPA, which belong to their high school education together, are considered to explain the academic success in universities much more, and it shows parallelism with the findings of the studies by Widerstrom, Jengeleski and Chansky (1979), Deaton and Schutz (2001), Geiser and Studly (2002), Armstrong and Carty (2003), and Zwick and Sklar (2005).

Considering the academic achievement predictions of the students in its general terms, it is seen that the FGPA of the students in the programs that gather students by numeric and equal weight scores is explained more. The significant predictive variable in predicting the academic achievements of students is the scores based on placement. Only a little part of the academic achievement in social sciences teaching program, which is one of the programs that gathers students by verbal scores, is explained by the placement based scores, whereas placement based scores in explaining the academic achievement score means in Turkish Language and Literature program are not seen as a significant variable. It was seen that the FGPA of the students who were placed in Turkish Language and Literature and social sciences teaching higher education programs with ÖSS SÖZ scores was explained more by raw scores yet the regression coefficient sign was negative. This situation draws a parallel line with some national research (Erdoğan, 1999; Gülleroğlu, 2005) findings, and it contradicts with some foreign research (Feldhusen & Jarvan, 1995; Breland, Kubota & Bonner, 1999; Geiser and Studly, 2002; Armstrong and Carty, 2003; Zwick and Sklar, 2005) findings. Moreover, since FGPA of students were not explained by raw scores or standard and placement scores, it can be said that it is essential to do research about predictive validity of administered tests and the factors predicting FGPA of students. Research results show that raw scores, standard scores and placement scores explain FGPA of students in civil engineering, business administration and law programs more when compared to other programs. It can be said that these results show parallelism with the findings of the study by Yağımlı (2004), yet they were generally higher than the findings of the previous researches by USYM (1979), Tavşancıl (1989), Tezbaşaran (1991) and Büyüköztürk & Deryakulu (2002). It can be suggested that one of the reasons for this situation is the study's wide range of predicted and predictive scores in variables.

This study showed that raw scores, standard scores and placement scores explains academic achievement average of students in civil engineering, business administration and law programs more when compared to other programs. Also the programs mentioned above being among the programs which accept the students with the highest scores of the scores types they belong to, might be shown as an important finding of the students on the validity of ÖSS.

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