

A Comparison of Admission Systems, in Predicting Students' Academic Achievement in State Islamic Higher Education Institutions (PTKIN)

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This study compares the accuracy of admission systems at the State Islamic Higher Education Institution (PTKIN) in predicting student achievement. Samples were drawn from five PTKIN in Indonesia. To measure students' academic achievement, GPA data at the end of semester 2 was used. It was taken from student admission channels as selected in 2015, namely SPAN-PTKIN, UM-PTKIN, and Mandiri. Academic data was also taken on the number of prospective students who register after admission through the three channels. Descriptive statistical analysis and inferential statistical analysis techniques were used. ANOVA was applied to examine the differences of academic achievement by students received through the three channels, utilising SPSS. The results proved that the prediction of students' achievement rates on PTKIN students, received through the SPAN-PTKIN channel, is higher and more effective than those received through the UM-PTKIN and Mandiri channels. Further, the Mandiri channel has the most effective registration of prospective students compared to SPAN-PTKIN and UM-PTKIN.

Key words: *Prediction accuracy, students' academic achievement, admission systems of PTKIN, SPAN-PTKIN, UM-PTKIN, and Mandiri channel.*

Introduction

Selection of new students in higher education institutions is a paramount issue which determines the quality of college graduates, affects the learning process at lower levels, and affect the sense of equity regarding the selection system (Asrijanty, 2014: 515–534). Therefore the manner in which colleges select new students attracts enormous attention. That is so not only for prospective students and parents, but also the community as a whole.

Selection of new students for the State Islamic Higher Education Institution (PTKIN) has undergone changes and improvements. Amendments were conducted with the aim of improving the quality and effectiveness of the selection system. In addition, they were adapted to societal developments and demands. Initially the selection system used only 1 (one) channel, but now it has developed into 5 (five) channels, namely SNMPTN (National selection for state university admission), SBMPTN (Joint Entrance Test for State Universities), SPAN-PTKIN (National Academic Achievement Selection of State Islamic Higher Education Institution), entrance admission for the State Islamic Higher Education Institution (UM-PTKIN), and Mandiri Selection.

All college students entering the various channels experience the equal learning and treatment process. In the process of teaching and learning, students are accepted through different channels, given the same assessment through the task, project, midterm exam and final exam for each course taught during the semester. It raises the question of whether entrance admission channels taken by prospective students will give a different impact in terms of student achievement, after pursuing the learning activities in PTKIN.

Several studies have revealed differences of student achievement based on the entrance channel. The research by Ningrum shows that the average GPA of UGM students in SPMB channel is higher than the written test (UTUL) and admission based on student achievement (PBU), with the average GPA of SPMB of 3.33; UTUL, 3.32; and PBU, 3.11. A study by Muslimin indicates that the selection process, through a written test using the academic potential test (TPA), is the best predictor of academic achievement compared to other college admission pathways (Ningrum, 2014). Another research by Usman (2015); Ok, et.al (2018) shows that students received through the SBMPTN have a higher average of learning achievement, compared to the SNMPTN and Mandiri channels, and the students received through the Mandiri channel have the lowest average learning achievement compared to other channels (2015: 40–48). Next, Saputra's (2016) research also discovered differences of student achievement, in terms of the acceptance channels; i.e. the Invitation channel, SNMPTN, and Mandiri channel. The Invitation channel has a mean of 2.8895, SNMPTN a mean of 2.9800, and the Mandiri channel has a mean of 2.8268 with a significance level of 0.001% (2016). Sugiharyanto et al. (2013) proves a significant difference in the students'

academic achievement in terms of college entrance channels (PBUD, Bidik Misi, SNMPTN, and Mandiri channels), where the lowest student academic achievement is from a group of students selected by the Mandiri channel (2013).

Literature Review

In relation to the results of the study, Stemler has used data on First Year Grade Point Average (FYGPA) as an indicator of academic achievement in relation to the entrance exam for higher education. In fact, until now, the size of academic success of FYGPA is still maintained (2012: 5–17). Hence, the results of research conducted by Koretz et al. show that the SAT and HSGPA (High School Grade-Point Average) test scores are still the basis for considering student academic achievement (2014).

Some previous literatures uses certain pre-college characteristics as predictor variables to foretell the success of college student studies. Yorke points out that pre-college factors influence the success of college student studies, such as the academic achievement index, and efforts to improve student academic achievement (1998: 189–201).

Previous studies often test the variables of pre-college characteristics as predictor variables that influence the success of first year college students. There are three pre-college characteristics, namely the student's background, self-perception as to ability, and achievement orientation and motivation (Bauer & Liang, 2003: 277–290). As identified by Terenzini, there are 6 (six) pre-college characteristic factors that can be used as predictor variables to measure the success of student study in the first year: (1) the score of school achievement; (2) gender; (3) scholastic talent test scores (SAT); (4) ethnicity; (5) family care education; and (6) family income levels (1984: 178–194).

A pre-college characteristic, the student's background may be the value of academic achievement in school such as the score of the school exam. Previous studies have shown that the score of school exams, which students acquire before entering college, significantly predicts the academic achievement of college students (Daugherty & Lane, 1999: 355–362). In fact, the academic achievement of the school (SMA), such as the score of the final exam (national exam), student report cards, etc. can be used as variables to predict the success of college students.

The results of Newton and Moore's research indicate that academic achievement at the previous level of education is a significant predictor of students' academic achievement in college (2009: 273–278). The results show that the Graduate Point Average (UGPA) score and the academic talent test Graduate Record Examination (GRE) is very significant in predicting success at the next level of study. But of the predictor variables, and UGPA score

variables, are the most significant predictor variables in foretelling the success of later studies.

The research by Kimberly S. Brown shows that the variable characteristics of student backgrounds such as gender, school academic achievement, race, and family education significantly affect student achievement in the first year (2009). Other studies have shown that academic intelligence, as measured by the Scholastic Aptitude Test (SAT) scores, is the greatest influence on academic achievement in the first level of financial accounting students at Purdue University (Eskew & Faley in Benford & Newsome, 2006). The results of Kruck and Lending showed that SAT scores significantly predicted academic achievement in male students, but were unable to predict the academic achievement of female students in Introductory College-Level IS Course (2003).

The research of Evans et al. also consistently shows that GPA for undergraduate students (UGPA) is a good predictor of the success of graduate students. The following studies give examples: (1) a combination of GRE and GPA from graduate programs is a strong predictor of the academic success of both postgraduate and doctoral students; (2) UGPA is the most important and significant predictor of overall academic performance (Evans et al., 2007: 544–567); (3) UGPA is the most valid predictor and has the most significant relationship to student success (Omizo et al, 1997: 947–953); (4) GRE and UGPA are generally valid predictors of the first year S2 GPA and graduation GPA, of graduate programs (Kuncel et al, 2001: 162–181).

Based on those studies, the academic success of university students is expected to be predicted by a series of antecedents, attached to prospective students. Considering that the selection of university entrance in PTKIN is diverse (there are five channels), the effectiveness of various channels needs to be studied, to obtain evidence of the predictive validity of the five channels as a selection tool. This study focused on the entrance channels of religious study programs (SPAN-PTKIN, UM-PTKIN and Mandiri channels).

Methodology

This study examines whether there are differences in students' academic achievement in terms of student admission through SPAN-PTKIN, UM-PTKIN, and Mandiri channels based on Student's Grade Point Average (GPA), and how the effectiveness of prospective students through SPAN-PTKIN, UM-PTKIN, and Mandiri channels.

The population in this study are all students of State Islamic Higher Education Institutions (PTKIN) in Indonesia. PTKIN in Indonesia can be categorized as State Islamic University (UIN), State Islamic Institute (IAIN) and State Islamic High School (STAIN). The sample of

this research is UIN, IAIN and STAIN students on the third semester of the academic year 2016/2017, representing all PTKIN in Indonesia, namely UIN Sunan Ampel Surabaya, UIN Syarif Hidayatullah Jakarta, IAIN Lampung, IAIN Mataram, and STAIN Kudus.

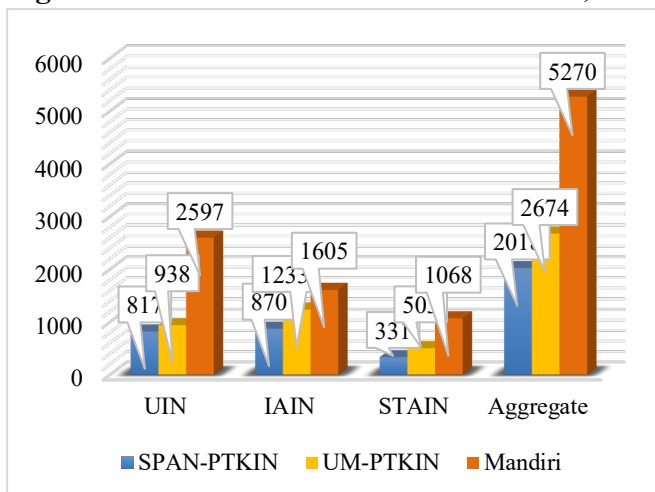
To measure students' academic achievement, Grade Point Achievement (GPA) data at the end of semester 2 was used. It was based on the student admission channels on selection in 2015 on PTKIN, as the sample in this research. In addition, the data is also taken from the academic section on the number of prospective students who have done registration, during the admission of new students, through the three admission channels in each PTKIN.

The data analysis techniques used are descriptive statistical analysis and inferential statistical analysis techniques. Descriptive analysis in this study is a comparative study, a type of descriptive research that aims to compare the relationships among the variables. Descriptive analysis is also used to describe the effectiveness of prospective students who register from those admission channels, namely SPAN-PTKIN, UM-PTKIN, and Mandiri channels. Meanwhile, the inferential statistical analysis used is the Analysis of Variance (ANOVA), to examine the differences of academic achievement of students received through the three admission channels, by applying SPSS for Windows program version 19.

Results

Based on the student admission channels in PTKIN, the students in each PTKIN are dominated by students accepted through Mandiri channels, with the percentage reaching 59.67% in UIN, 43.28% in IAIN, and 56.15% in STAIN. In second place are students accepted through the UM-PTKIN channel. The number of students received through SPAN-PTKIN is the lowest.

Figure 1. Student numbers of SPAN-PTKIN, UM-PTKIN, and Mandiri.



The following is data of Academic Achievement of PTKIN Students presented in Table 1.

Table 1:Data of Students' Academic Achievement in PTKIN based on Admission Systems

| Admission Systems | N | Mean | Std. Deviatn | Min | Max | Range | % |
|-------------------|------|-------|--------------|------|------|-------|--------|
| SPAN-PTKIN | 2018 | 3.388 | 0.341 | 0.79 | 4.00 | 3.21 | 20.26% |
| UM-PTKIN | 2674 | 3.320 | 0.391 | 0.47 | 4.00 | 3.53 | 26.84% |
| Mandiri | 5270 | 3.289 | 0.410 | 0.28 | 4.00 | 3.72 | 52.90% |
| Total | 9962 | 3.317 | 0.394 | 0.28 | 4.00 | 3.72 | 100% |

Based on Table 1, overall, the academic achievement of PTKIN students on SPAN-PTKIN, UM-PTKIN, and Mandiri channels reached the highest score of 4.00 and the lowest score of 0.28. It can be seen that there is a very far range, between the highest and lowest score achieved by students, equalling 3.72. Moreover, the average of academic achievement of PTKIN students was 3.317 with a standard deviation of 0.394. The amount of data is 9962 students. This indicates that the majority of PTKIN students achieved academically around 2.90–3.70.

Table 2:Results of ANOVA Test on Academic Achievement of PTKIN Students Received through SPAN-PTKIN, UM-PTKIN, and Mandiri channels

| | Sum of Squares | df | Mean Square | F | Sig. |
|----------------|----------------|------|-------------|--------|------|
| Between Groups | 14.380 | 2 | 7.190 | 46.758 | .000 |
| Within Groups | 1531.447 | 9959 | .154 | | |
| Total | 1545.827 | 9961 | | | |

Based on the results of ANOVA test analysis as shown in Table 2, the value of F arithmetic is 46.758, with a significance is 0.000. It exhibits a significant difference in the academic achievement of PTKIN students received through SPAN-PTKIN, UM-PTKIN, and Mandiri channels.

Table 3:Results of Differences Test on Average Score of Academic Achievement on PTKIN students received through SPAN-PTKIN, UM-PTKIN, and Mandiri channels

| (I) admission systems | (J) admission systems | Mean Difference (I-J) | Std. Error | Sig. | 95% Confidence Interval | |
|-----------------------|-----------------------|-----------------------|------------|------|-------------------------|-------------|
| | | | | | Lower Bound | Upper Bound |
| SPAN | UMPTKIN | .06793* | .0115 | .000 | .0453 | .0906 |

| | | | | | | |
|---------|---------|----------|-------|------|--------|--------|
| | Mandiri | .09917* | .0102 | .000 | .0791 | .1193 |
| UMPTKIN | SPAN | -.06793* | .0115 | .000 | -.0906 | -.0453 |
| | Mandiri | .03124* | .0093 | .001 | .0130 | .0495 |
| Mandiri | SPAN | -.09917* | .0102 | .000 | -.1193 | -.0791 |
| | UMPTKIN | -.03124* | .0093 | .001 | -.0495 | -.0130 |

*. The mean difference is significant at the 0.05 level.

Based on the mean difference between SPAN-PTKIN and UM-PTKIN, UM-PTKIN and Mandiri, and Mandiri and SPAN-PTKIN, SPAN-PTKIN is the most effective compared to the UM-PTKIN and Mandiri channels. This is exhibited in the mean difference column in Table 3, where the SPAN-PTKIN channel has a greater margin than the other admission channels.

The results of the data analysis can be explained as follows: (1) in general, there is a difference in average of academic achievement of PTKIN students received through SPAN-PTKIN, UM-PTKIN, and Mandiri; (2) based on the mean difference between SPAN-PTKIN and UM-PTKIN, UM-PTKIN and Mandiri, and Mandiri and SPAN-PTKIN, it can be seen that SPAN-PTKIN is the most effective compared to UM-PTKIN and Mandiri channels; and (3) the prediction of the achievement rate of PTKIN students received through SPAN-PTKIN is higher than UM-PTKIN and Mandiri channels, because it is proven to be more effective than those channels.

In addition, this study also examined the data on the effectiveness of prospective students who register after being received through SPAN-PTKIN, UM-PTKIN, and Mandiri channels. Table 4 describes the data for the number of participants who passed selection and registered in PTKIN in every student admission channel in the last 3 years.

Table 4: Summary of Participants who Pass the Selection and Register in PTKIN

| Year | SPAN-PTKIN | | UM-PTKIN | | Mandiri | |
|------|-------------|------------|-------------|------------|-------------|------------|
| | <i>Pass</i> | <i>Reg</i> | <i>Pass</i> | <i>Reg</i> | <i>Pass</i> | <i>Reg</i> |
| 2014 | 2520 | 1340 | 2299 | 1675 | 7660 | 5868 |
| 2015 | 3422 | 1694 | 2866 | 2147 | 6157 | 5244 |
| 2016 | 3738 | 1960 | 3369 | 2546 | 6629 | 5772 |

Overall, the number of participants who pass the selection and register in PTKIN through SPAN-PTKIN and UM-PTKIN always increases every year. In the Mandiri channel, there was a decrease in 2015 then an increase in 2016. Nevertheless, the most effective channel for registering prospective students is the Mandiri channel. It means that the percentage of

registrants in Mandiri channel is higher than SPAN-PTKIN and UM-PTKIN. It was proved by the percentage of registrants; up to 87% in 2016.

Discussion

This study proves a significant difference in the average academic achievement of students received through SPAN-PTKIN, UMPTKIN, and Mandiri. The average academic achievement of students received through SPAN-PTKIN channel is higher than that of the students received through UM-PTKIN and Mandiri channels. These findings corroborate the Triyuni and Bagiatuti studies showing that the average student achievement received on the PMBT channel is higher than UMPN and UMPN-Invitation (TBS) (Triyuni & Bagiatuti, 2013: 3). PMBT is a student admission channel based on academic achievement and supporting achievement at high school (Triyuni & Bagiatuti, 2013: 3).

This study also found that the average academic achievement of students received through Mandiri channel is lower than SPAN-PTKIN and UMPTKIN. This finding verifies the results of Sugiharyanto et al. which proves that there are significant differences in student achievement in terms of college entrance channel (PBUD, Bidik Misi, SNMPTN, and Mandiri channels), where the lowest student academic achievement is from a group of students selected by Mandiri channel (2013).

In essence, the three admission channels held by PTKIN have different mechanisms and levels of competition. Students received through SPAN-PTKIN pass the selection through a national non-test channel which emphasizes school achievement (grades taken from a report). The students accepted through UM-PTKIN channel pass through a national written test. Meanwhile, Mandiri channel students pass through a written test managed by each PTKIN.

Based on differences in the mechanism and level of competition above, there is also a difference of student input quality from the channels. The better the selection mechanism, the better the quality of the input. Therefore, it is reasonable that there is a difference in average academic achievement, between students received through the SPAN-PTKIN, UM-PTKIN, and Mandiri channels.

Students received through SPAN-PTKIN had the highest academic achievement. The main underlying reason is good learning achievement during high school. Achievements in a report's score can be converted, as the result of a reflective assessment of the student's personality. This achievement can also encourage students' self-confidence to be more proficient than others. This is in accordance with the theory of self-efficacy expressed by Bandura. Individuals who have high self-efficacy will achieve a better performance because

the individual has a strong motivation, clear goals, stable emotions, and the ability to deliver performance on activities or behaviours successfully (Bandura in Veronika, 2013: 61).

In addition, students' choices may also affect their academic achievement. Students in the SPAN-PTKIN channel pass according to their preference. The choice could be a field mastered during high school, especially for students from Islamic boarding schools who choose religious programs. Of course, all of these factors contribute to a high level of academic achievement of students received through SPAN-PTKIN channel, compared to other channels.

The second highest academic achievement was by students received through UM-PTKIN. UM-PTKIN is an alternative admission channel that can be taken by participants who have not passed SPAN-PTKIN selection. They are the participants who can be displaced by other, more talented participants. This could be the reason for the lower average academic achievement of students received through UM-PTKIN, compared to the average of students received through SPAN-PTKIN.

Next, the Mandiri channel is in the third or last position in the averages of academic achievement of PTKIN students. Although the Mandiri and UM-PTKIN channels are both passed by selection through written tests, there is a difference between the average academic achievement of the students. This is possible because the scale of the two channels is different. UM-PTKIN is conducted on a national range; the selection participants must compete nationally. Mandiri channel is local. The selection participants compete at a local level or in each PTKIN.

The Mandiri channel is also the last period admission channel held by PTKIN. This channel is the last alternative for participants who have not passed through SPAN-PTKIN and UM-PTKIN. This indicates that the Mandiri channel has lower student inputs than the students received through the SPAN-PTKIN and UM-PTKIN channels. Thus, it is not surprising that the average academic achievement of students received through Mandiri channel is lower than the other two channels.

However, based on the effectiveness of the registration of prospective students, the Mandiri channel is the most effective channel compared to SPAN-PTKIN and UM-PTKIN. That is because this is the last channel that can be taken by participants in the selection of student admissions, especially for participants who still want to be accepted at university and for their favourite major when they do not qualify in the previous admission channel.

In accordance with the previous discussion, SPAN-PTKIN and UM-PTKIN channels effect the registration of prospective students at a low level. Many prospective students who pass



through both channels choose not to register. There are at least five reasons, namely: (1) they are not accepted in their first choice of program; (2) there is no interest in the program; (3) there are still many opportunities or possibilities to select other avenues of admission; (4) the choice of parents or school teachers, even if the students do not know whether they are enrolled by the school; and (5) they just follow friends. Another reason for the resignation of new student candidates is they have since been accepted for work, received in an official school, and so on. These conditions cause prospective students to not register, although choosing not to register is the right of prospective students when determining their own choices.

Conclusions

Based on the results of this study, it can be concluded that generally there is a difference of average academic achievement of PTKIN students received through SPAN-PTKIN, UM-PTKIN, and Mandiri admission channels. Based on the difference of average scores of student academic achievement, between student groups received through SPAN-PTKIN with UM-PTKIN, UM-PTKIN with Mandiri, and Mandiri with SPAN-PTKIN, SPAN-PTKIN is the most effective admission channel. The predicted achievement rate of PTKIN students received through SPAN-PTKIN is higher and more effective than UM-PTKIN and Mandiri. In addition, the study also found that the Mandiri channel has become the most effective registration channel for participants, compared to SPAN-PTKIN and UM-PTKIN.



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