COMPARATIVE STUDY OF SELECTION OF PERSONS TO ENTER HIGHER EDUCATION IN DIRECT SELECTION SYSTEM AND TCAS SELECTION SYSTEM OF FACULTY OF SCIENCE AND TECHNOLOGY, SUAN SUNANDHA RAJABHAT UNIVERSITY.

Warong Chuenkrut[*] **& Adisai Thovicha**[**]

[*], [**] *Faculty of Science and Technology, Suan Sunandha Rajabhat University, Bangkok, Thailand*
Email: [*]warong.ch@ssru.ac.th, [**]adisai.th@ssru.ac.th

ABSTRACT

The purpose of this research are 1) To study the student selection process, application and enrollment to study in direct selection system and TCAS selection system. 2) To compare the number of applicants and enrollment to study in direct selection system and TCAS selection system, Faculty of Science and Technology, Suan Sunandha Rajabhat University. This research was divided into 2 parts. Part1, data collection, the student selection process, application and enrollment to study in direct selection system and TCAS selection system. Recorded as a summary report of the comparative studies according to the process. In part 2, empirical comparative studies, samples of the research were the summary reports of the number of applicants and enrollment to study at the bachelor's degree level in the regular program from the academic year 2013 – 2017 in direct selection system and the academic year 2018 – 2019 which is TCAS selection system of Faculty of Science and Technology, Suan Sunandha Rajabhat University.

Researchers found that comparative study according to the student selection process, application and enrollment to study in direct selection system and TCAS selection system in all six aspects as a whole. Which is considered by each aspect. The result aspects that are different clearly 2 aspects. The first aspect is characteristics and process for admission and the second aspect is confirming rights, canceling rights and enrollment to study for admission. For empirical comparative studies that are considered overall. We found the number of applicants and enrollment in TCAS selection system has tended to decrease continuously when compared with direct selection system that was overview consider of Faculty of Science and Technology.

Keywords: Direct selection system, TCAS selection system, Faculty of Science and Technology

INTRODUCTION

The system for recruiting people to study in Thai higher education institutions during 2013-2017, Suan Sunandha Rajabhat University have selective personnel to study by using the direct selection system. There are principles that the university will issue a schedule, the application process, and selection by oneself without reference to the student selection criteria for the central system. This student selection period has started before the student selection of the central system for many universities. The Faculty of Science and Technology, Suan Sunandha Rajabhat University has reported the number of applicants and the enrollment report is higher than the target number of admissions, causing the administrators of the Faculty of Science and Technology have a high-income budget enough to manage within the faculty and the cost of doing activities to promote knowledge for students. Later there was a

change in the selection of people to study at a new higher education institution called TCAS selection system (Thai University Central Admission System). It has been used since the academic year 2018 until now. Council of University Presidents of Thailand is responsible for considering the characteristics and criteria for admission with important principles [1]. In detail is students must study in the classroom until graduation, and then arrange the examination for selection by using the central exam, and to have the administration of the right to apply to the university.

At present, the Faculty of Science and Technology has been applications and selection of students according to the TCAS (Thai University Central Admission System) selection system in 2018 – 2019. This selection system causes problems with the number of students enrolled to study every year, compared to the yearly targets of student enrollment. It affects the budget of the faculty income, expenses for the activities of the program and the students that needed to use.

However, the researchers are aware of the problem of the number of applicants and enrolling to study the Faculty of Science and Technology which has been reduced from the TCAS selection system by comparison with the direct selection system (old). This research focuses on the comparative study of the selection of persons to enter higher education in direct selection system and TCAS selection system of Faculty of Science and Technology, Suan Sunandha Rajabhat University. Researchers would like to understand the principles and student selection process comparison of 2 systems, including inform information for university administrators and the Faculty of Science and Technology in the development of the student selection process in the future.

OBJECTIVES

1. To study the student selection process, application and enrollment to study in direct selection system and TCAS selection system.

2. To compare the number of applicants and enrollment to study in direct selection system and TCAS selection system, Faculty of Science and Technology, Suan Sunandha Rajabhat University.

METHODOLOGY

Data Collection and Evaluation

The researchers divided data collection and evaluation into 2 parts.

Part 1: The student selection process, application, and enrollment to study in direct selection system during 2013-2017 and the TCAS selection system during 2018-2019 recorded as a result table of comparative studies according to the process in each aspect [2]. Including the points that different of the study selection systems by using data collection of characteristics and process for admission, a number of rounds of selection, the time period of the selection process, principles for student selection, limiting the student number target each round, confirming rights, canceling rights and enrollment to study for admission of Faculty of Science and Technology [3].

Part 2: The empirical comparative studies by summary of a number of applicants and enrollment to study Bachelor degree level of the regular program during 2013-2017 in the direct selection system, compared to during 2018-2019 in the TCAS selection system both in the overall of the Faculty of Science and Technology. For the results of statistical analysis, compared to the average, and percentage, including the regression equation and coefficient of determination (R^2) that compared to the percentage (Barbara G. Tabachnick and Linda S. Fidell.2007) [4].

RESULTS

The researchers divided the study into 2 parts. The researchers are summarized in Part 1 as follows

Part 1: The student selection process, application, and enrollment to study in direct selection system and the TCAS selection system.

We recorded as a result table of comparative studies according to the process in each aspect. It shows follows in table 1.

Table 1. Comparative of the student selection process in direct selection system during 2013-2017 and the TCAS selection system during 2018-2019.

Aspect no.	Direct selection system during 2013-2017	TCAS selection system during 2018-2019	Different points
1.Characteristics and process for admission	- Applicants apply directly through the university. - The university determines the student characteristics of the selection and the examination. - Able to apply to many universities Because the selection period does not match - The rights management system for selection is not *Clearing House.* (*The system used to confirm rights in the selection every round)	- Applicants apply through the TCAS website which is a central system. - Selection characteristics are divided into specific qualifications and have different selection criteria for each format as follows Round 1: Portfolio Round 2: Quota Round 3: Co-Direct Admission Round 4: Admission Round 5: Direct Admission - The examination of some rounds is a central exam that is used in all universities. - Applicants can choose from many places But have to go to only one place for examination. The rights management system for selection is *Clearing House.*	Different is the application, the division of selection rounds and the rights management system for selection is Clearing House.
2. A number of rounds of selection.	- There are 2 rounds. **Remark:** *University can add more rounds depending on the university.*	- There are 5 rounds.	Differences in the number of rounds.
3.The time period of the selection process	- The timing period of selection, application, selection, and enrollment to study. Round 1: November – February Round 2: April - July	- The timing period of selection, application, selection, and enrollment to study. Round 1: December - February Round 2: February - May Round 3: April - May Round 4: May - June Round 5: June - July	Overall is no different.

Aspect no.	Direct selection system during 2013-2017	TCAS selection system during 2018-2019	Different points

4. Principles for student selection	- Principles for student selection use multiple-choice exams, special skill examination, and interview test issued by the university.
	- The university is considering the results of self-selection.
		Principles for student selection follow different formats as below.
		    Round 1: Portfolio by considering portfolios and interviewing.
		    Round 2: Quota from the ability quota by selection from area quota, sports ability quota and scholarships in which the selection depends on the university will determine.
		    Round 3: Co-Direction Admission by applicants must pass scores of the central multiple-choice exam, 9 general subjects. GAT PAT O-net, ranked by preference no more than 6. The selection system can select only 1 ranked in the ranking.
		    Round 4: Admission by setting a 50% ratio of the GAT + PAT exam, 30% O-net exam of central systems and 20% GPAX of the school. The selection principle according to the criteria of each university. Applicants ranked by preference no more than 4. The selection system can select only 1 ranked in the ranking.
		    Round 5: Direct Admission that setting principle for selection by the university independently.
			Slight differences in round 3 and round 4, applicants must pass scores of the central multiple-choice exam.

5. Limiting the student number target each round.	- The university can set and change student number target each round freely - The university can increase the application rounds if the number of students is less than the targets.	- There is a limit to the student number target divided a ratio within 5 rounds. - The university can change student number target each round by request though the TCAS Selection system. - Unable to increase the application rounds.	Differences Unable to increase the application rounds.
6. Confirming rights,	- No confirming rights process, when passing	- Must have confirmed rights. - Canceling rights can only 1	Differences Confirming

Aspect no.	Direct selection system during 2013-2017	TCAS selection system during 2018-2019	Different points
canceling rights and enrollment to study for admission.	the selection, can report being a student. - Canceling rights can be made at any time without prior notice. - The selected persons can enrollment to study the university without disqualifying selection at other universities.	time, and must be done through the central system according to the time period. - When enrollment to study, will not be able to apply for selection in other rounds, must first canceling rights.	rights, canceling rights and enrollment to study.

From **Table 1** The results of the process study show that the different aspects were aspect 1 Characteristics and process for admission, aspect 2 A number of rounds of selection, aspect 4 Principles for student selection, aspect 5 Limiting the student number target each round, and aspect 6 Confirming rights, canceling rights and enrollment to study for admission. But for aspect 3 the time period of the selection process overall is no different. However, from studies, the aspects that were clearly different were aspect 1 Characteristics and process for admission, and aspect 6 Confirming rights, canceling rights and enrollment to study for admission.

Part 2: The empirical comparative studies by comparing the number of applicants and enrollment to study in direct selection system and TCAS selection system, Faculty of Science and Technology, Suan Sunandha Rajabhat University.

We summary of a number of applicants and enrollment to study for a bachelor's degree in the regular program during 2013-2017 in the direct selection system, compared to during 2018-2019 in the TCAS selection. It shows in the form of a table as shown in table 2-4

From **Table 2** Summarize the number of applicants and enrollment to study for a bachelor's degree in the regular program during 2013-2017 in the direct selection system by rounds. It consisting of 2 rounds, Round 1 and Round 2. The result shows that enrollment student number of round 1 was more than round 2 every year. The most different of enrollment student number between round 1 and 2 was observed in 2017. Round 1 has the enrollment to study 744 people, compared to 138% of the student number target. Round 2 has the enrollment to study 116 people, compared to 50% of the student number target.

Table 2. The number of applicants and enrollment to study for a bachelor's degree in the regular program during 2013-2017 in the direct selection system by rounds.

Year		2013			2014			2015			2016			2017		
		Round 1	Round 2	Total	Round 1	Round 2	Total	Round 1	Round 2	Total	Round 1	Round 2	Total	Round 1	Round 2	Total
Direct Selection system	Student number target	520	215	735	534	221	755	562	233	795	570	240	810	540	230	770
	Applicants	2440	1463	3903	3264	825	4089	2470	1620	4090	3024	990	4014	3543	920	4463
	Enrollment	702	128	830	616	221	837	685	141	826	635	103	738	744	116	860
	Enrollment compared to student number target (%)	**135**	**60**	**112.9**	**115**	**100**	**110.9**	**122**	**61**	**103.9**	**111**	**43**	**91.1**	**138**	**50**	**111.7**

Table 3. The number of applicants and enrollment to study for a bachelor's degree in the regular program during 2018-2019 in the TCAS selection system by rounds

Year		2018						2019					
		Round 1	Round 2	Round 3	Round 4	Round 5	Total	Round 1	Round 2	Round 3	Round 4	Round 5	Total
TCAS Selection system	Student number target	288	36	252	108	36	720	280	32	212	89	23	635
	Change student number target	288	36	252	108	**295**	**979**	**322**	**84**	**408**	**108**	**320**	1242
	Applicants	885	101	869	420	69	2344	689	144	1311	32	203	2379
	Enrollment	263	37	182	64	61	607	190	39	195	9	87	520
	Enrollment compared to student number target (%)	**91**	**103**	**72**	**59**	**169**	**84**	**68**	**123**	**92**	**10**	**382**	**82**

From Table 3 Summarize the number of applicants and enrollment to study for a bachelor's degree in the regular program during 2018-2019 in the TCAS selection system by rounds. It consisting of 5 rounds, Round 1 to Round 5. Results show that most enrollment to study was round 1. But in 2019, the student number target has been adjusted every round, causing round 3 to be enrollment to study the most, but near to round 1.

In 2018, results show that most enrollment to study was round 1. It has enrollment to study 744 people, compared to 138% of the student number target. But in round 5, the student number target has been adjusted, causing can enrollment to study 61 people, compared to 169 % of the old student number target. In 2019, the student number target has been adjusted every round. The most enrollment to study was round 3. It has enrollment to study 195 people, compared to 92% of the student number target. But in round 5, the student number target has been adjusted, causing can enrollment to study 87 people, compared to 382% of the old student number target.

From Table 4 The result shows the most student number target is in 2016, has 810 people and the lowest is in 2019, has 635 people. There are the most applicants is in 2017, has 4,463 people and the lowest is in 2013, has 3903 people. There is the most enrollment to study is in 2017, has 860 people and the lowest is in 2019, has 520 people.

For the comparison of enrollment to study and student number target, calculated to percentage was the highest in 2013, was 112.9% and the lowest was in 2019, was 81.9%.

Table 4. The total number of applicants and enrollment to study for a bachelor's degree in the regular program during 2013-2017 in the direct selection system and the TCAS selection system during 2018-2019.

Year		2013	2014	2015	2016	2017	2018	2019	Average
Direct Selection system	Student number target	735	755	795	810	770	nil	nil	**773.0**
	Applicants	3,903	4,089	4,090	4,014	4,463	nil	nil	**4111.8**
	Enrollment	830	837	826	738	860	nil	nil	**818.2**
	Enrollment compared to student number target (%)	**112.9**	**110.9**	**103.9**	**91.1**	**111.7**	nil	nil	**106.1**

Year		2013	2014	2015	2016	2017	2018	2019	Average
TCAS Selection system	Student number target	nil	nil	nil	nil	nil	720	635	**677.5**
	Applicants	nil	nil	nil	nil	nil	2,344	2,379	**2361.5**
	Enrollment	nil	nil	nil	nil	nil	607	520	**563.5**
	Enrollment compared to student number target (%)	nil	nil	nil	nil	nil	**84.3**	**81.9**	**83.1**

*nil = no information data

Finally, a comparison between the direct selection system and the TCAS system by considering the average of data. We found that the student number target, applicants, and enrollment to study are different, with a significant decrease. The average percentage of comparing the enrollment to study and student number target in the direct selection system was 106.1%, but the TCAS selection system was 83.1%.

From the result of the comparison of enrollment to study and student number target (%) by plot the graph. It shows statistical analyses are Regression equation (or Linear equation) and R2 values (Coefficient of Determination). After that when Regression equation has been calculated. We will know that the forecast data for 2020 will be how many percent of the number of enrollments to study compare with student number target is shown in Graph of Figure 1.
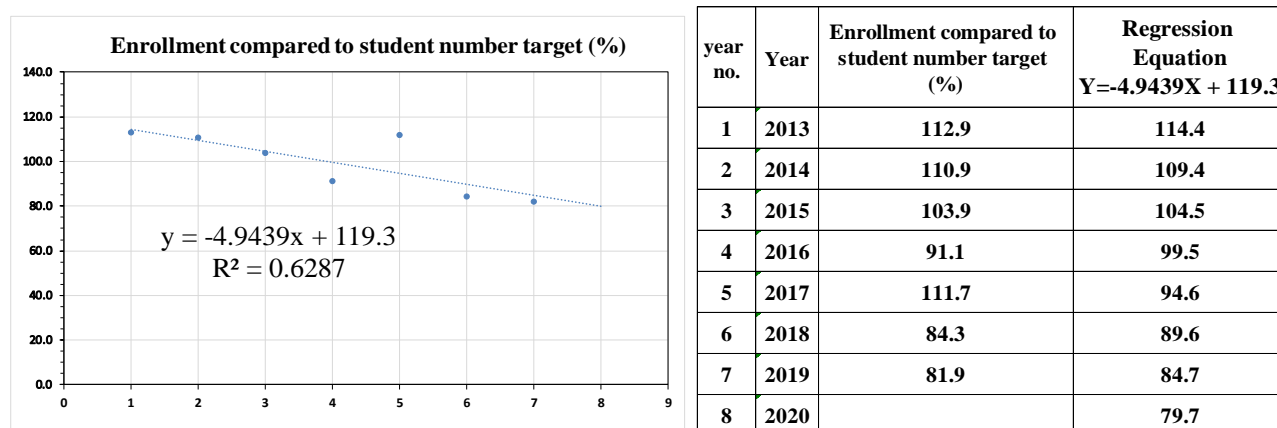

year no.	Year	Enrollment compared to student number target (%)	Regression Equation $Y=-4.9439X + 119.3$
1	2013	112.9	114.4
2	2014	110.9	109.4
3	2015	103.9	104.5
4	2016	91.1	99.5
5	2017	111.7	94.6
6	2018	84.3	89.6
7	2019	81.9	84.7
8	2020		79.7

Figure 1. Graph and regression equation of the percent comparison of enrollment to study number and student number target

Regression equation of the percent comparison of enrollment

From the figure 1, the data shows the relationship of percent comparison of enrollment to study number and student number target during 2013-2019 when plot graph. The graph is a straight line that has a tendency to down. It shows as a Regression equation (Linear equation), y =-4.9439x + 119.3 and R^2 values (Coefficient of Determination) was 0.6287. It compared to percent, was 62.87 %. Meanwhile when substituting the year in the Regression equation, Replace to variable x. It will get the forecasting of percent comparison of enrollment to study number and student number target every year. For the forecast data in 2020 was 79.7%

CONCLUSION AND FUTURE WORK

In conclusion, the comparative study of the selection of persons to enter higher education in direct selection system and TCAS selection system of Faculty of Science and Technology, Suan Sunandha Rajabhat University. The researchers used knowledge about trends in university application of Faculty of Science and Technology, Suan Sunandha Rajabhat University [5] to be reference some information. The research found that the student selection process in the direct selection system during 2013-2017 and the TCAS selection system during 2018-2019. There are many differences by comparing content in each aspect. The aspects that were clearly different were aspect one, Characteristics and process for admission, and aspect six, confirming rights was canceling rights and enrollment to study for admission. In the aspect two shown a number of rounds of selection, aspect four the principles for student selection, and aspect five the limiting the student number target each round was a little different. Otherwise for the aspect three the time period of the selection process overall was not different.

However, the difference between the student selection process in the direct selection system during 2013-2017 and the TCAS selection system during 2018-2019. We have the empirical comparative studies by comparing the number of applicants and enrollment to study in direct selection system and TCAS selection system. The research founds the number of enrollments to study was decreased. We explain the direct selection systems have the number of enrollments so much. When compared to the student number target, it has the number of enrollments more than the target. But the TCAS selection systems have the number of enrollment small. When compared to the student number target, it has the number of enrollments less than the target. In the year 2018 and 2019, the administrators of the Faculty of Science and Technology, there is an adjustment of the student number target in each round in the TCAS selection system. The number of students in round 5 has the enrollment number more than the target, but the other rounds are almost no effect. Finally, student number trends of the selection system since 2013-2019 tends to decrease. Especially in 2020 could be forecast the enrollment number of the student was a decrease and less than the student number target.

The researchers hope that this research will benefit the administrators of the Faculty of Science and Technology, Head of the program and those involved in the student selection system to be used as basic information to improve the Faculty of Science and Technology to be consistent with the TCAS student selection system. Then used in advertising and public relations planning for students applying for the Faculty of Science and Technology, Suan Sunandha Rajabhat University in the following years.

ACKNOWLEDGMENTS

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