

## Comparative Study of Student Learning Achievement through Different Admission Method of B.Ind.Tech. program, Faculty of Industrial Technology and Management, KMUTNB

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**Abstract:** This research aimed to study and compare student learning achievement through different admission methods, the proportion of graduation and the proportion of drop out student. Student groups are from the undergraduate students of Bachelor of Industrial Technology (Information Technology for Industry) program, Faculty of Industrial Technology and Management, King Mongkut's University of Technology North Bangkok. It was carried out by studying a population of 413 enrolled students from 2011-2016. The study used the statistics of frequency, percentage moreover, analyze and compare the grade point average (GPA) with One-Way ANOVA statistics and then using the Scheffe's test method to find out which pairs of means are significant. After that using Chi-Square statistics method for comparative analysis of the proportion of graduation and dropout students.

The study indicated that the GPA of the first-year student with different enrollment methods is different with statistically significance (Sig=.00). When considering the differences between pairs, found that the group of student from outstanding achievement are the difference from a group of direct admission with statistical significance (Sig=.00), a difference from district quota (Sig=.00) and difference from other admission systems (Sig=.03). The study of the academic results when graduating with different enrollment methods are different with statistically significance (Sig=.03). And the outstanding achievement group has a different academic result when graduating with direct admission group (Sig. = .04). And the proportion of graduation and dropout is the difference with statistical significance (Sig =0.00). The group of student from outstanding achievement has the highest number of graduation (90.5%), graduate on time (34.5%) and the lowest number of dropout (9.5%).

**Keywords:** Admission System Comparison, Academic Achievement, GPAX Analysis.

### 1. Introduction

Faculty of Industrial and Technology Management King Mongkut's University of Technology North Bangkok Prachinburi campus is an educational institution that provides higher education to develop advanced workers with specialized knowledge (Ma-Oon, 2016 ). Our duty is to produce graduates at the undergraduate and graduate level. One of the main missions is to produce graduates with quality, morality, and ethics for sustainable development. At present, the faculty has conducted teaching and learning to produce graduates at the undergraduate level. The undergraduate degrees are offered in both 4-year and 2-year continuing programs. The faculty has the admissions policy in accordance with the policy of King Mongkut's University of Technology North Bangkok with the different admissions methods. The admissions methods for a bachelor's degree program include the quota system, direct admission system, central admission. Currently, we call this collective admission system that the

TCAS system. The TCAS system divides the reception into 5 rounds follow the Council of University Presidents of Thailand (CUPT) policy. Accepting new students at the bachelor degree level for 4 years, having received all 5 rounds. But accepting 2 years of undergraduate courses with continuously or transferring students can do only TCAS1, TCAS2, and TCAS5 because TCAS3 and TCAS4 receive only 4 years program.

We can see that there are many admission systems. Therefore, the researcher is interested in comparing the learning achievement of students through different admission methods. The selected example in this research is the students from the information technology for industry program, department of information technology which is a 2-year undergraduate continuing program. In this program, there are many methods of admission, including direct admission, district quota, outstanding achievement quota and other small amounts of students systems.

**2. Objectives**

(1) To study and compare student learning achievement through different admission methods.

(2) To study and compare the proportion of graduation and the proportion of drop out through different admission methods.

**3. Delimitation of the study**

A research population is newcomer students who enroll in information technology for industry program, department of information technology in the academic year 2011-2016, the number of students is 413. The content scope of the study is to compare the grade results of the 413 first-year students and the achievement results of students who have graduated (Graduated within the academic year 2017), 304 persons. For the comparison study of the proportion of graduation and the proportion of dropout at different admission, systems are studied from the number of students who have a graduated status, both graduating on time or spend more time than given in the curriculum and the falls out status which total number of 393 (Not including 20 people who are still studying in the academic year 2018).

**4. Methodology**

Grade information and academic results for each semester of these 431 populations were collected from the database system of KMUTNB’s academic services division from the first semester in the academic year 2011 to the second semester in the academic year 2017. Admission type data were collected from the announcement of a list of qualified candidates for new students of the Faculty of Industrial Technology and Management.

**5. Results and Discussion**

**5.1 The study of the number of students admitted**

A newcomer students who enroll in information technology for industry program, department of information technology in the academic year 2011-2016, the number of students are 413 and has a detail as shown in table.1.

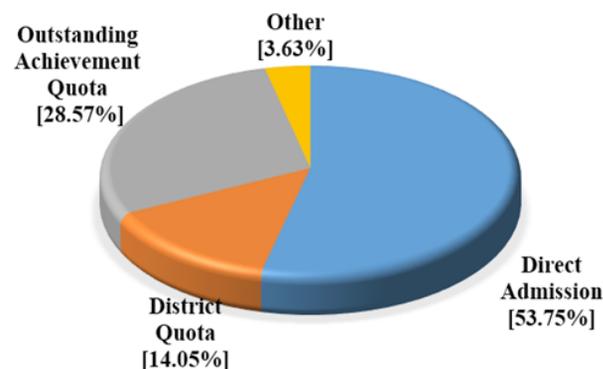
**Table.1** Details of the number of students admitted since the academic year 2011 -2016.

Admissions	academic year						Total
	2011	2012	2013	2014	2015	2016	
Direct Admission	15	39	51	56	30	31	222
District Quota	12	12	9	10	4	11	58
Outstanding Achievement Quota	35	19	16	14	20	14	118
Other	0	0		4	3	8	15
<b>Total</b>	<b>62</b>	<b>70</b>	<b>76</b>	<b>84</b>	<b>57</b>	<b>64</b>	<b>413</b>

Table.1 shown the Number of new student admission since the academic year 2011 - 2016, the total number is 413 people. The most number of student are from direct admission method with a number of 222. Followed by Outstanding Achievement Quota, district quota, and other methods respectively. When considering the proportion of admissions in the overall picture, it was found that the direct admission system had the highest proportion at 53.75 percent as detailed in Figure. 1

**5.2 Comparative Study of Student Learning Achievement through Different Admission Method result**

The highest first-year student GPA is 3.68 is from direct admission method. Followed by Outstanding Achievement Quota, district quota, and other methods respectively. The detail is shown in Table.2. The first-year GPA is related to academic achievement at graduation. We found that the achievement on graduation at the highest GPA is 3.64, from direct admission method. Followed by Outstanding Achievement Quota, district quota, and other methods respectively. The detail is shown in Table.2.



**Figure.1** Percentage of students admitted

**Table. 2** Table Mean and Standard Deviation of Student’s Academic Achievement from Different Admission System

Admissions	N	Min	Max	Mean	S.D.
<b>GPA 1st year</b>					
Direct Admission	222	.80	3.68	2.27	.4897
District Quota	58	.65	3.35	2.08	.6045
Outstanding Achievement Quota	118	1.14	3.52	2.44	.5022
Other	15	1.20	2.84	1.96	.6247
Total	413	.65	3.68	2.28	.5302
<b>GPA Graduation</b>					
Direct Admission	158	2.00	3.64	2.58	.3839
District Quota	37	2.05	3.42	2.58	.3524
Outstanding Achievement Quota	105	2.00	3.53	2.71	.3725
Total	304	2.63	3.64	2.63	.3781

When applying the results of the students to study and compare the learning achievement of the students admitted to the system, the results can be found in Table 3-5.

**Table. 3** Statistics for Grade Point Average of Students from Different Admission System

Source of Variation		df	SS	MS	F	p
GPA 1 <sup>st</sup> year	Between Groups	3	7.014	2.338	8.787	.000*
	Within Groups	409	108.824	.266		
	Total	412	115.838			
GPA Graduation	Between Groups	3	1.252	.417	2.977	
	Within Groups	300	42.074	.140		
	Total	303	43.326			

\*p < .05

**Table. 4** Comparison pair difference of first-year student GPA

Admission	$\bar{X}$	Direct Admission	District Quota	Outstanding Achievement Quota	Other
		2.27	2.08	2.44	1.96
Direct Admission	2.27	-	-	-	-
District Quota	2.08	-	-	-	-
Outstanding Achievement Quota	2.44	.031*	.000*	-	.009*
Other	1.96	-	-	-	-

\*p < .05

**Table. 5** Comparison pair difference of Academic achievement upon graduation

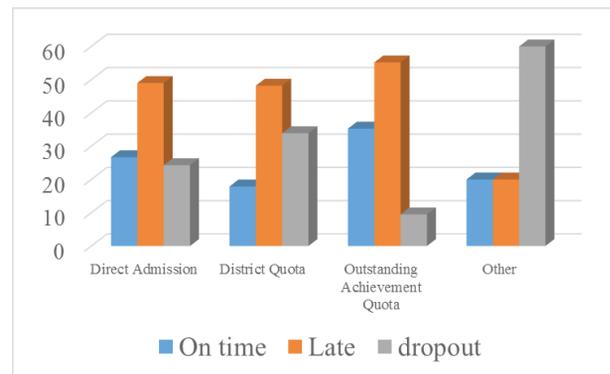
Admission	$\bar{X}$	Direct Admission	District Quota	Outstanding Achievement Quota	Other
		2.58	2.58	2.71	2.69
Direct Admission	2.58	-	-	.046*	-
District Quota	2.58	-	-	-	-
Outstanding Achievement Quota	2.71	-	-	-	-
Other	2.69	-	-	-	-

\*p < .05

From Table 3-5 shows the results of the study comparing the learning achievement of students admitted to the system. Found that the results of the first year students has the different with statistically significance (Sig=.03). When considering the differences between pairs, found that the group of student from outstanding achievement are difference from other group such as difference from direct admission (Sig=.04). But after they pass through year 1, Learning achievement upon graduation has a positive correlation as shown in figure.2 with Pearson Correlation value 0.903 (Sig=.00).



**Figure.2** Relationship of first-year grade result and learning achievement



**Figure.3** Proportion of graduation status

**5.3 The result of the study comparing the proportion of graduation and dropout**

**Table.7** Proportion of graduation and dropout

Admissions	Graduation						Dropout		Total	
	On time		Late		Total		n	percent	N	percent
	n	percent	n	percent	n	percent				
Direct Admission	55	26.8	103	50.2	158	77.1	47	22.9	205	100
District Quota	9	15.8	28	49.1	37	64.9	20	35.1	57	100
Outstanding Achievement Quota	40	34.5	65	56.00	105	90.5	11	9.5	116	100
Other	2	1.3	2	13.3	4	26.7	11	73.3	15	100
Total	106	27.0	198	50.4			89	22.6	393	100

$\chi^2 = 38.519$  Sig. = .00

From table.7, found that students from outstanding achievement quota had the highest educational attainment with 90.5%. Followed by direct admission, district quota, and other methods respectively. When considering graduation by using the study time according to the curriculum, found that students from outstanding achievement quota also had the highest proportion of graduation with 34.5% and the follower are as same as the previous result. For the proportion of dropout, found that students from other method the highest proportion of dropout with 73.3% and the lowest is from outstanding achievement quota with 9.5%.

The result of the study comparing the proportion of graduation and dropout through Different Admission Method, found that students who entered with different systems had different levels of graduation and fall out with statistically significance (Sig=.00). Or we can said that the success and fall of the student depends on the admission

method.

**6. Conclusion and Discussion**

Number of students admitted to the Bachelor of Industrial Technology Program In Information Technology for Industry (Continuing Program) in academic year 2011-2016, total 413 consists of 222 students direct admission (53.75%) followed by student from outstanding achievement quota (28.57%), district quota (14.05%) and from other method (3.67%). According to studies, found that the highest first-year student GPA is 3.68 is from direct admission method. Followed by Outstanding Achievement Quota, district quota, and other methods respectively. And the achievement on graduation at the highest GPA is 3.64, from direct admission method. Followed by Outstanding Achievement Quota, district quota, and other methods respectively. The result shows that Learning achievement upon graduation has a positive correlation the first-year

student GPA with Pearson Correlation value 0.903 (Sig=.00). Corresponding to the study of Lertwiryaprapa, T. et al. (2011) which found that quota students had slightly better average academic results than direct admission students.

The result of this study showed that Outstanding Achievement Quota students got the highest number of graduation and the lowest number of dropout. Corresponding to the study of J. Srikamta (Srikamta, 2017) which found that student from outstanding achievement quota of industrial management program also got the highest number of graduation and the lowest number of dropout. And It is also consistent with S. Congmuang (Congmuang et al., 2001) which found that student from quota admission has a high proportion of graduation than other admission systems.

From the study, this research can be used as a data for faculty's administrator to decide the new student admission policy in prioritizing in the admission process. Admission should be emphasized by the group: 1. Outstanding Achievement Quota, 2. Direct Admission and 3. District Quota respectively.

## **7. Acknowledgments**

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