

## The Forecast of International Education in Thailand

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### ABSTRACT

Thailand has been a very attractive market for international education. Thai students has been going to study in other countries, primarily the United Kingdom, the United States of America, Australia, New Zealand, and Canada. These five English speaking countries has gained most of the Thai students and still continue to gain substantial student number.

The purpose of this study is to provide statistical analysis, trends and forecast of Thai students studying abroad around the world. It is very useful for any stakeholders in international education market, including higher education institutions, local education businesses, and the government. The analysis in this study will help stakeholders to forecast the trends of Thai students going abroad from the year 2018-2022. This information will be used to predict the numbers of Thai students going abroad in the future as well.

In this paper, the Forecast Formula is used to analyze the statistical data collected from the year 2014-2017. The moving average forecasting, linear forecasting and seasonal forecasting are used as tools to predict the future trends. The accuracy of the tools is tested by Mean Absolute Percentage Error (MAPE) at 0.022%. From the analysis, the United Kingdom and the United States of America are the top most popular destinations for Thai student to further their studies. Stakeholders should be focusing on developing and strengthen the opportunities, either to recruit students to the UK and US or to collaborate in other ways. From this, it is believed that Thailand has very high opportunity for education, international recruitments, collaborations and partnerships with local education businesses. Even though, the trend is decreasing but the issues of quality of education, language skills are not at

satisfying standard. Therefore, it is possible that the international education market in Thailand will grow or there could be other ways to link international education and education businesses to the Thais. The further research will need to identify possibilities for Thai institutions to internationalize and education businesses to find new opportunity.

**KEYWORDS:** Higher Education Institution, Study Abroad, Thai Students, Education in Thailand, International Student Recruitment

## Introduction

There are many obvious benefits of study abroad. Not only to develop oneself as a person but it benefits the student in job opportunities, career path, and social status. Despite the cost of education in other countries and the living cost, which could be much higher than in Thailand, and many issues relating to the safety, staying away from family, around 25,000 Thai students still choose to further their study in other countries according to Nuffic Neso (2010).

## International Student Market in Thailand

Official figures are not available but it is estimated that annually around 20,000 -25,000 Thai students are going abroad for study. (The Statistics Portal, 2013) Most of these students go to 5 English-speaking destination countries i.e. United States of America (US), Australia, United Kingdom (UK), New Zealand, and Canada. Until the mid-nineties the majority of the Thai students went to the US. However, since the financial

crisis in Thailand in the late nineties the numbers of Thai students going to the US have dropped tremendously. According to the National Center for Education Statistics (n.d.), US no longer was the most preferred destination country. Australia became the major destination for Thai students with the UK ranked second. Studying abroad has been a tradition for upper- and middle-income groups in Thailand.

Based on the information available from the Michael and Trines (2018), the ranking of the study abroad countries for Thai students has been increased. However, aside from the traditional 5 English-speaking countries, a growing number of Thai students have then focused on China and Japan as new study abroad destinations. Many Thai student who plans to study abroad seek advices from educational agents. Agents as schools, institutions, or Universities' representative will be able to give advice and help the student through all the processes, the application, the acceptance of Offer, the

Visa processes, tickets, and accommodation booking.

International student market in Thailand is believed to be Postgraduate market. During the first EHEF (European Higher Education Fair) in Bangkok in 2004

(approximately 4,000 visitors) it was recorded that most of the students visiting the fair were interested in postgraduate courses. During the 2006 EHEF (approximately 31,000 visitors), 68.00% of the visitors were interested in postgraduate courses and PhD.

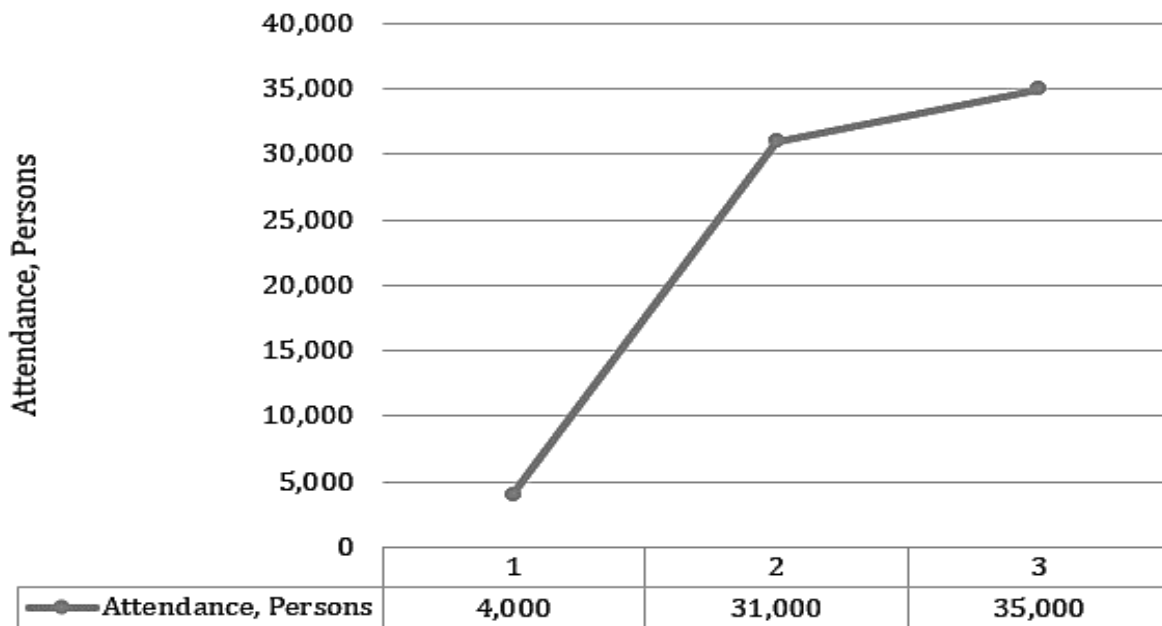
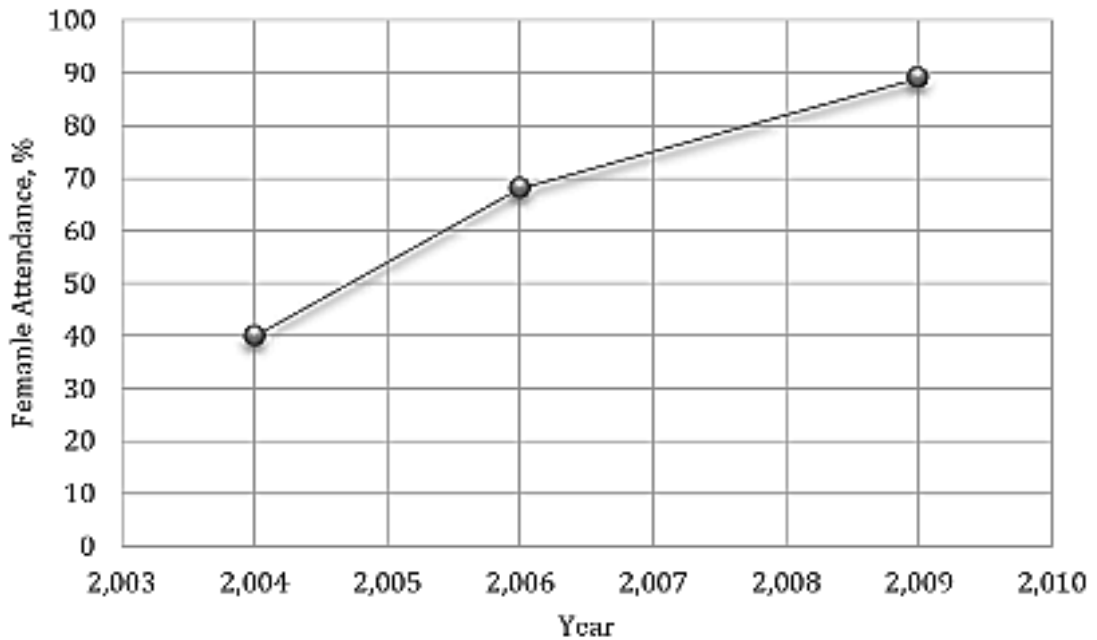


Figure 1 Attendance to European Higher Education Fair

Source: Nuffic Neso Thailand (2010)



**Figure 2** Percent of female attendance to European Higher Education Fair

**Source:** Nuffic Neso Thailand (2010)

A survey at the Dutch pavilion during the last EHEF in 20 (approximately 35,000 visitors) revealed that the number of Thai students interested in postgraduate courses and PhD has increased to nearly 89.00%. (Nuffic Neso Thailand, 2010). The EHEFs in 2006 and 2009 were organized in collaboration with Office of The Civil Service Commission. Figure 1 illustrates the trend of number of visitors. The international student market in Thailand is dominated by female students (Nuffic Neso Thailand, 2010). In 2004, the majority of the visitors were female students and in 2006 this was also the same, 60.00% female and 40.00% male students. In 2009 the number of female students visiting the Dutch pavilion

at the EHEF has increased tremendously to 73.00% compared to male students, 27.00%. 79.00% of the students were in the age group 18-30 year. It was noted by the participating universities that the majority of the visitors were proficient in the English language and very focused in collecting information on particular courses. As reported in the evaluation, the universities participating in the EHEF were very content with the overall increased quality (educational background, English proficiency) of the visitors. (Nuffic Neso Thailand, 2010).

International education seems to be growing in Thailand. Both international programs offered at major universities in

Thailand and also the study abroad trend is also growing rapidly. While there are many factors affecting the students plan to study abroad, for example: immigration rules, visa, limits over the number of students into the particular countries, and marketing plans of institutions from other countries.

The policies of universities and higher education institutions from the 5 English-speaking countries toward different countries are not the same. For example, international education in Malaysia consists of many link programs between local institutes and institutes in the UK, US, and Australian. This prevents the Malaysian students from going to study abroad because the education system abroad is already established in the country. The government encouragement of the link program policy may be caused by the fact that there are a large number of Malaysian students going abroad for

education. The number became so large that the reduction of number of students going abroad became necessary. On the contrary, The Thai government seems to encourage the strengthening of Thai universities and institutions to take the incoming students with or without link programs.

### **Research Objective**

The objective of this research is to provide statistical analysis, trends and forecast of Thai students studying abroad around the world. It is very useful for any stakeholders in international education market, including higher education institutions, local education businesses, and the government. Given that the education service exports the Thai economy, the supply side is highly competitive for this market. Education providers around the world should capitalize opportunities in this potential market.

## Conceptual Framework

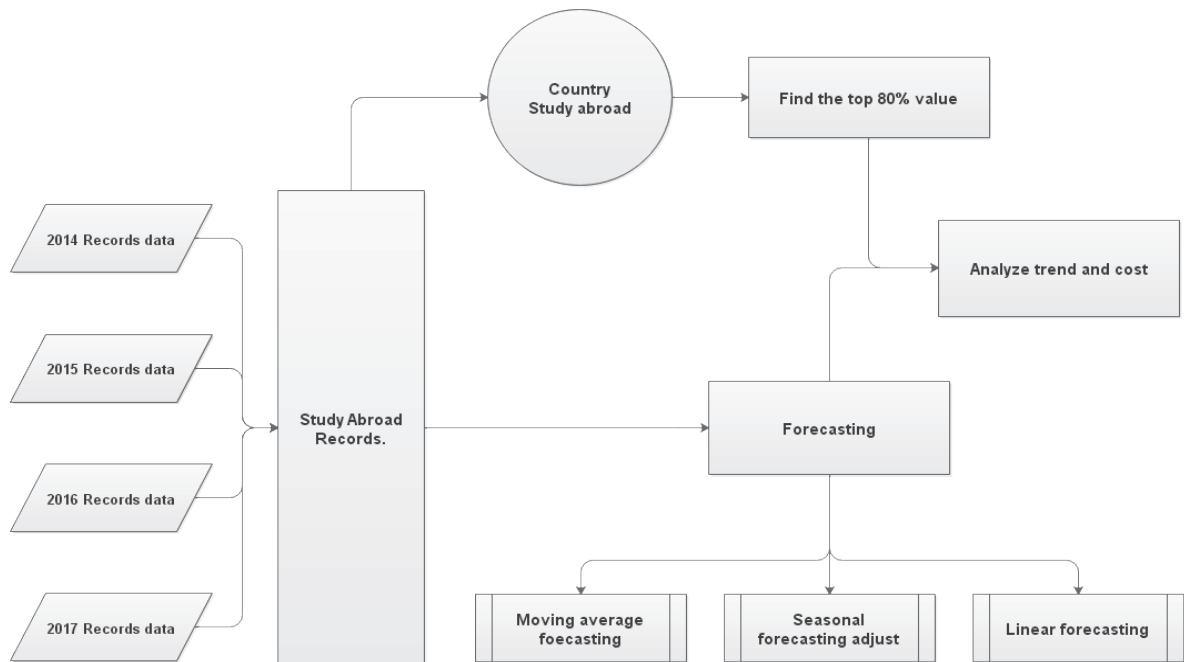


Figure 3 Conceptual framework

## Methodology

In this paper, the Forecast Formula (Armstrong, 1988) is used to analyze the statistical data collected from the year 2014 -2017. This analysis will forecast the number of Thai students going to study abroad in the year 2018–2022. The forecast formula, seasonal forecasting, linear forecasting, mean absolute percentage error and moving average is illustrated below.

## Forecast Formula (Armstrong, 2001)

$$\text{forecast} = a + bx$$

$$a = \bar{y} - b\bar{x}$$

And

$$b = \frac{\sum(x - \bar{x})(y - \bar{y})}{\sum(x - \bar{x})^2}$$

Y = previous months data

X = previous students was aboard data

## Trend line

$$y = \beta x + c$$

## Linear equation

$\beta$  = Slope of line

C = slack variable

## Mean Absolute Percentage Error

$$MAPE = \frac{100\%}{n} \sum_{a=1}^n \left| \frac{X_a - X_f}{X_a} \right|$$

n = number of record

$X_a$  = actual number of study abroad

$X_f$  = forecast number of study abroad

## Root Mean Square Error

$$RMSE = \sqrt{(f - o)^2}$$

f = forecasts (expected values or unknown results),

o = observed values (known results).

$$RMSE_{fo} = \left[ \sum_{i=1}^N (Z_{fi} - Z_{oi})^2 / N \right]^{1/2}$$

$\Sigma$  = summation (“add up”)

(zfi – Zoi)Sup>2 = differences, squared

N = sample size.

$$RMSE_{error} = \sqrt{1 - r^2} SD_y$$

$SD_y$  is the standard deviation of Y.

## R Square

$$R^2 = 1 - \frac{SS_{res}}{SS_{tot}}$$

$$SS_{res} = \sum_t (y_i - f_i)^2 = \sum_t e_i^2$$

$$SS_{tot} = \sum_t (f_i - \bar{y})^2$$

$$\bar{y} = \frac{1}{n} \sum_{i=1}^n y_i$$

## Forecasting Weight Moving Average

$$F_{t+1} = W_1 D_t + W_2 D_{t-1} + \dots + W_n D_{t-n+1}$$

Forecasting using simple straight line equation

$$y = a + bx$$

where

$$a = \bar{y} - b\bar{x}$$

and

$$b = \frac{\sum (x - \bar{x})(y - \bar{y})}{\sum (x - \bar{x})^2}$$

## Additive Seasonality

$$a_t = \alpha(X_t - F_{t-s}) + (1 - \alpha)(a_{t-a} + b_{t-1})$$

$$b_t = \beta(a_t - a_{t-1}) + (1 + \beta)b_{t-1}$$

$$F_t = \gamma(X_t - a_t) + (1 - \gamma)F_{t-s}$$

$\alpha$ ,  $\beta$ , and  $\gamma$  are smoothing constants which are between zero and one. Again, the  $y_{t+1}$  (or level) at time t, while  $b_t$  is the slope at time t. The letter s represents the number of periods per year, so the quarterly data is represented by  $s = 4$  and monthly data is represented by  $s = 12$ . The forecast at time is t for the value at time.

Table 1 Number of Thai students studied abroad in 2014-2017 by month

Month	Year	Country										Total
		UK	USA	JAPAN	GERMANY	AUSTRALIA	FRANCE	CHINA	ETHERLAN	THAILAND	Other	
Jan	2014	1,359	1,309	300	246	163	127	112	98	65	259	4,038
	2015	1,348	1,195	274	233	160	120	96	95	78	245	3,844
	2016	1,353	1,124	255	224	155	108	116	89	70	238	3,732
	2017	1,427	1,149	252	191	142	110	105	91	81	191	3,739
Feb	2014	1,303	1,307	301	245	169	125	110	96	60	268	3,984
	2015	1,323	1,174	273	234	165	119	95	97	78	240	3,798
	2016	1,337	1,103	252	226	155	107	111	89	67	233	3,680
	2017	1,439	1,152	254	191	139	111	107	93	81	192	3,759
Mar	2014	1,347	1,303	298	242	169	128	110	96	58	266	4,017
	2015	1,341	1,202	271	231	168	115	95	97	70	241	3,831
	2016	1,330	1,105	251	230	156	109	110	90	63	226	3,670
	2017	1,423	1,140	247	185	138	107	104	95	74	186	3,699
Apr	2014	1,282	1,305	297	243	170	126	111	95	54	267	3,950
	2015	1,340	1,197	262	230	169	115	96	98	68	241	3,816
	2016	1,315	1,097	249	229	155	109	110	89	63	223	3,639
	2017	1,416	1,132	247	185	136	105	103	95	72	185	3,676
May	2014	1,295	1,297	296	243	169	126	108	93	48	296	3,971
	2015	1,346	1,185	258	229	168	114	95	99	67	237	3,798
	2016	1,306	980	258	240	153	107	110	88	63	221	3,526
	2017	1,409	1,097	249	180	137	105	102	94	70	181	3,624
Jun	2014	1,332	1,281	296	240	170	125	108	92	31	298	3,973
	2015	1,394	1,174	258	226	165	113	95	99	61	236	3,821
	2016	1,359	1,085	274	239	150	108	110	88	59	210	3,682
	2017	1,451	1,093	249	178	137	102	102	93	68	177	3,650
Jul	2014	1,376	1,294	298	238	169	117	105	90	27	297	4,011
	2015	1,456	1,167	254	225	164	114	95	99	57	236	3,867
	2016	1,381	1,090	270	242	148	107	109	86	56	214	3,703
	2017	1,466	1,112	250	175	133	95	101	90	61	179	3,662
Aug	2014	1,407	1,327	294	235	169	118	104	92	28	266	4,040
	2015	1,377	1,269	255	232	161	113	94	112	70	246	3,929
	2016	1,394	1,150	270	239	147	112	107	87	95	214	3,815
	2017	1,475	1,143	246	172	127	90	98	89	37	190	3,667
Sep	2014	1,449	1,329	297	243	169	119	107	90	27	268	4,098
	2015	1,448	1,199	260	233	164	113	92	107	62	238	3,916
	2016	1,427	1,146	237	222	145	112	108	83	86	214	3,780
	2017	1,490	1,114	242	175	118	84	91	92	25	193	3,624
Oct	2014	1,404	1,310	288	242	171	119	107	90	15	270	4,016
	2015	1,418	1,176	261	230	163	112	92	108	64	231	3,855
	2016	1,373	1,139	241	220	142	110	106	83	84	211	3,709
	2017	1,459	1,111	239	174	125	81	87	94	84	190	3,644
Nov	2014	1,345	1,220	264	233	155	115	97	90	79	240	3,838
	2015	1,403	1,165	259	224	162	120	89	107	61	228	3,818
	2016	1,280	1,097	238	221	141	108	108	80	83	206	3,562
	2017	1,346	995	218	178	201	67	85	83	80	258	3,511
Dec	2014	1,357	1,241	279	228	152	114	97	89	79	244	3,880
	2015	1,371	1,153	255	224	159	117	89	107	60	227	3,762
	2016	1,452	1,177	263	227	151	110	112	108	82	201	3,883
	2017	1,447	1,072	242	176	117	74	85	93	77	183	3,566
Total	2014	16,256	15,523	3,508	2,878	1,995	1,459	1,276	1,111	571	3,239	47,816
	2015	16,565	14,256	3,140	2,751	1,968	1,385	1,123	1,225	796	2,846	46,055
	2016	16,307	13,293	3,058	2,759	1,798	1,307	1,317	1,060	871	2,611	44,381
	2017	17,248	13,310	2,935	2,160	1,650	1,131	1,170	1,102	810	2,305	43,821

Source: Office of the Civil Service Commission (2018)



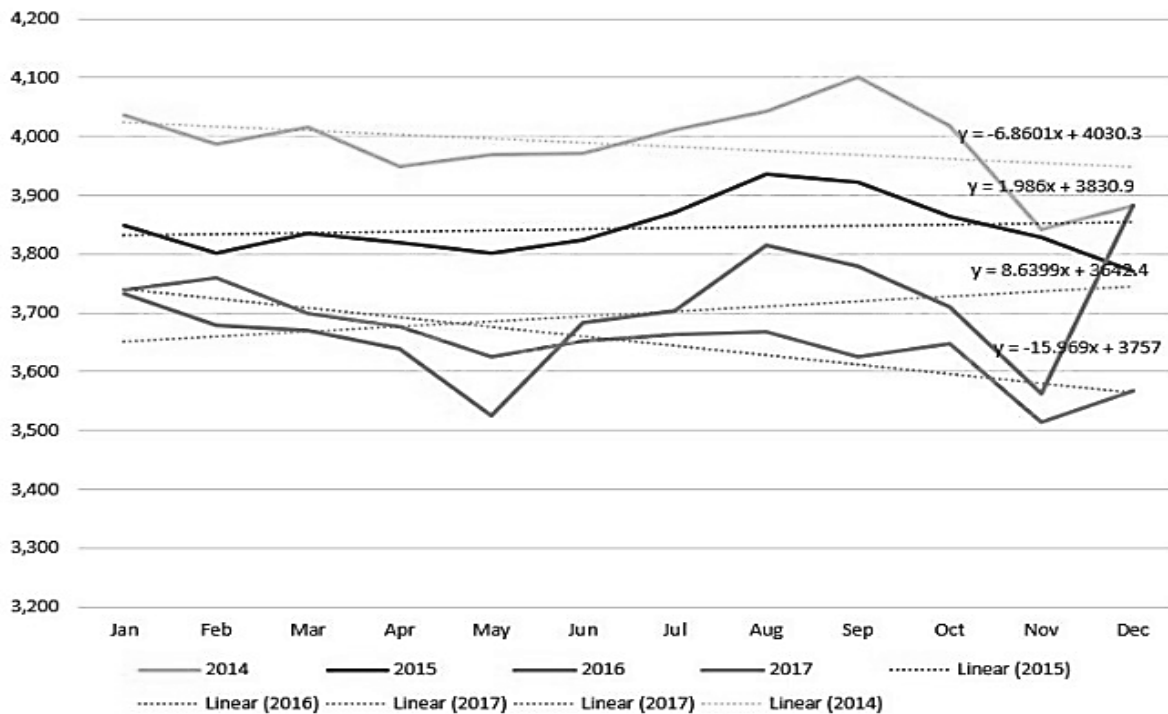


Figure 4 Trend of Thai students studied abroad in 2014-2017

Source: Office of the Civil Service Commission (2018)

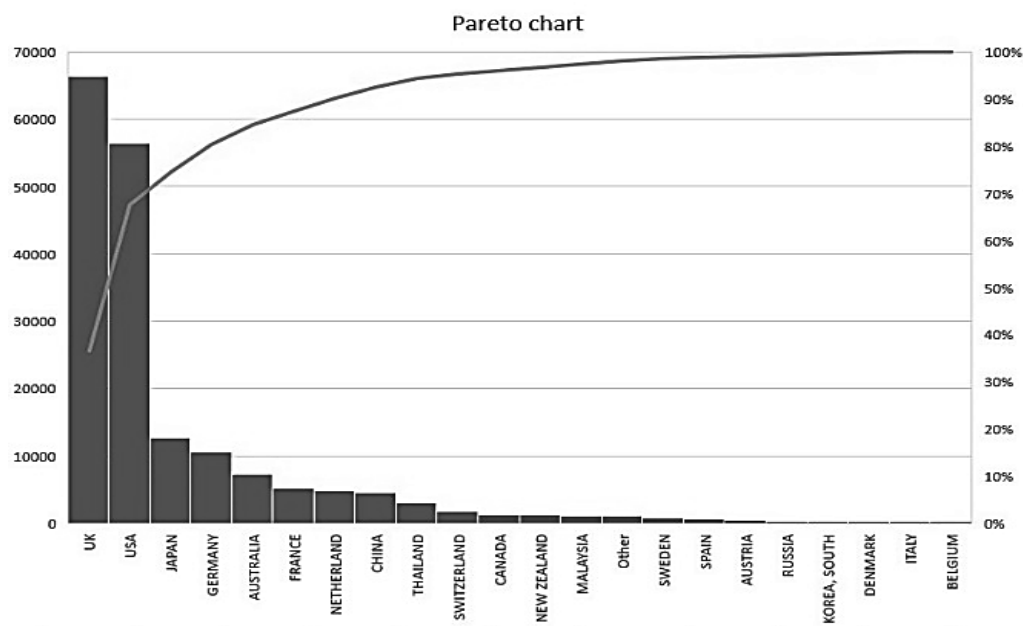


Figure 5 Pareto chart of Thai students studied abroad in 2014-2017

Source: Office of the Civil Service Commission (2018)

Pareto principle is used in this analysis. It also known as the 80/20 rules, or the law of the vital few, or the principle of factor sparsity. For most cases, roughly 80.00% of the effects come from 20.00% of the causes. Juran (2009), suggested the principle and the name is from an Italian economist Vailfredo Pareto.

Over the last decades, study abroad has been a growing business resulting from the globalization. Stakeholders in education need to improve the quality of education and be competent to educational developments. The statistical information above shows Thai student flows for overseas education. By looking at the educational development issue, education is very important especially issues with human capital, quality of education and market development.

Including educational business which could be one of the main source of income for any country.

### **Finding and Analysis**

From the graph showing number of Thai students going abroad, it seems to be a seasonal trend. Recruiting students might seems like it is a seasonal trend as the start dates are clear. Every year the number of students going abroad is higher in July or August. While comparing the graph by all the 4 years, it is not seasonal as it is not paired in the similar line with other years. Overall, it is observed that the number of students has been decreasing significantly. From the forecasting, the number still seems to be decreasing continuously. The result of the forecast of 2018-2022 is shown in figure 6.

**Table 2** Forecast number of Thai students studied abroad in 2018 -2022 by using seasonal forecasting, linear forecasting and moving average

Year	Q	Original data	Forecasting	trend cyc.	ratio index	Seasonal index	Seasonal adjust data	Lower. B forecasting	Upper B. Forecasting	Linear forecasting
2014	1	12039				<b>99.3%</b>	12127.9			
	2	11891		17993	66%	<b>98.7%</b>	12050.1			
	3	12155		17827	68%	<b>101.7%</b>	11951.4			
	4	11743		17573	67%	<b>100.4%</b>	11702.0			
2015	1	11,484		17335	66%	<b>99.3%</b>	11568.8			
	2	11,447		17328	66%	<b>98.7%</b>	11600.2			
	3	11,731		17260	68%	<b>101.7%</b>	11534.5			
	4	11,464		16991	67%	<b>100.4%</b>	11424.0			
2016	1	11,082		16669	66%	<b>99.3%</b>	11163.8			
	2	10,848		16626	65%	<b>98.7%</b>	10993.2			
	3	11,298		16709	68%	<b>101.7%</b>	11108.8			
	4	11,155		16768	67%	<b>100.4%</b>	11116.1			
2017	1	11197		16621	67%	<b>99.3%</b>	11279.7			
	2	10955		16477	66%	<b>98.7%</b>	11101.6			
	3	10958		16240	67%	<b>101.7%</b>	10774.5			
	4	10729		15977	67%	<b>100.4%</b>	10691.5			
2018	1		10466	15783	66%	<b>99.3%</b>	10543.3	10056	10877	10463.9
	2		10363	15782	66%	<b>98.7%</b>	10501.7	9943	10784	10487.3
	3		10753	15721	68%	<b>101.7%</b>	10572.9	10324	11184	10510.7
	4		10414	15508	67%	<b>100.4%</b>	10377.6	9973	10856	10534.1
2019	1		10101	15313	66%	<b>99.3%</b>	10175.6	9650	10554	10062
	2		9997	15478	65%	<b>98.7%</b>	10130.8	9535	10460	10231.5
	3		10753	15539	69%	<b>101.7%</b>	10572.9	10324	11184	10401
	4		10414	15265	68%	<b>100.4%</b>	10377.6	9973	10856	10570.5
2020	1		9736	14826	66%	<b>99.3%</b>	9807.9	9241	10233	9733.2
	2		9631	14687	66%	<b>98.7%</b>	9759.9	9124	10140	9756.9
	3		10024	14626	69%	<b>101.7%</b>	9856.1	9505	10545	9780.6
	4		9684	14413	67%	<b>100.4%</b>	9650.2	9153	10217	9804.3
2021	1		9370	14156	66%	<b>99.3%</b>	9439.2	8827	9915	9367.4
	2		9266	14139	66%	<b>98.7%</b>	9390.0	8710	9823	9391.3
	3		9658	14078	69%	<b>101.7%</b>	9496.2	9090	10228	9415.2
	4		9319	13865	67%	<b>100.4%</b>	9286.5	8738	9901	9439.1
2022	1		9005	13609	66%	<b>99.3%</b>	9071.5	8412	9600	9002.8
	2		8902	13592	65%	<b>98.7%</b>	9021.1	8295	9510	9026.6
	3		9293	13611	68%	<b>101.7%</b>	9137.3	8673	9914	9050.4
	4		8954	13601	66%	<b>100.4%</b>	8922.7	8320	9589	9074.2

Source: Office of the Civil Service Commission (2018)

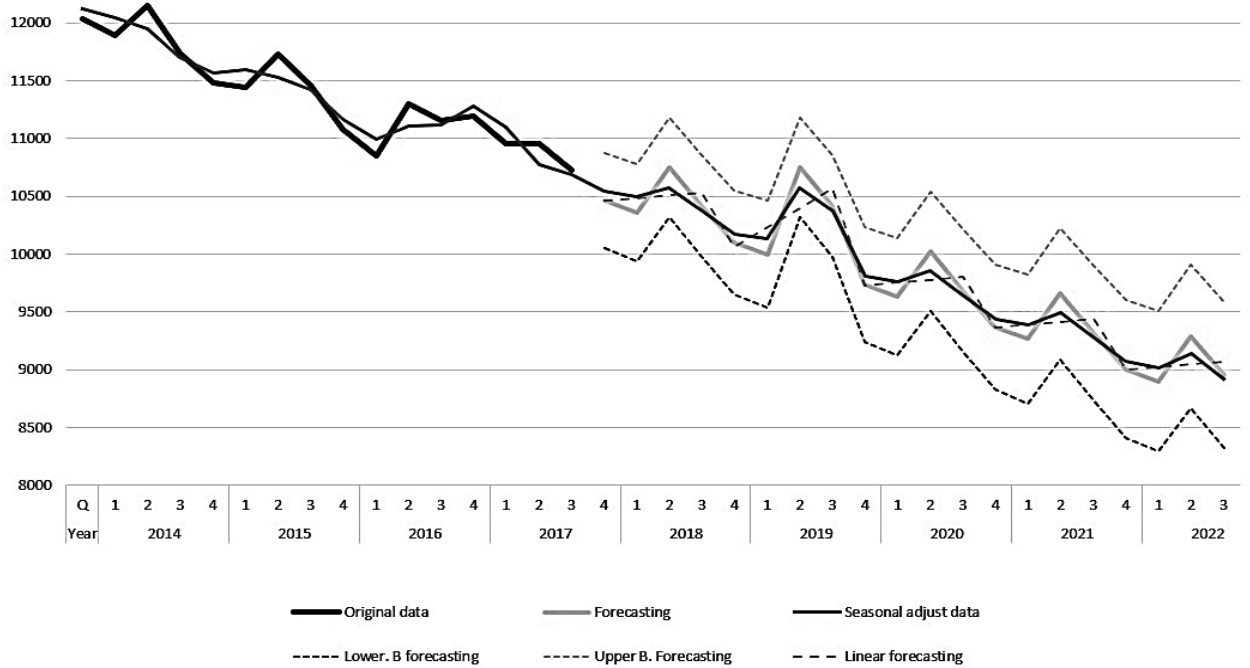


Figure 6 Graph of the forecast number of Thai students studied abroad in 2018-2022 by using seasonal forecasting, linear forecasting and moving average

Source: Office of the Civil Service Commission (2018)

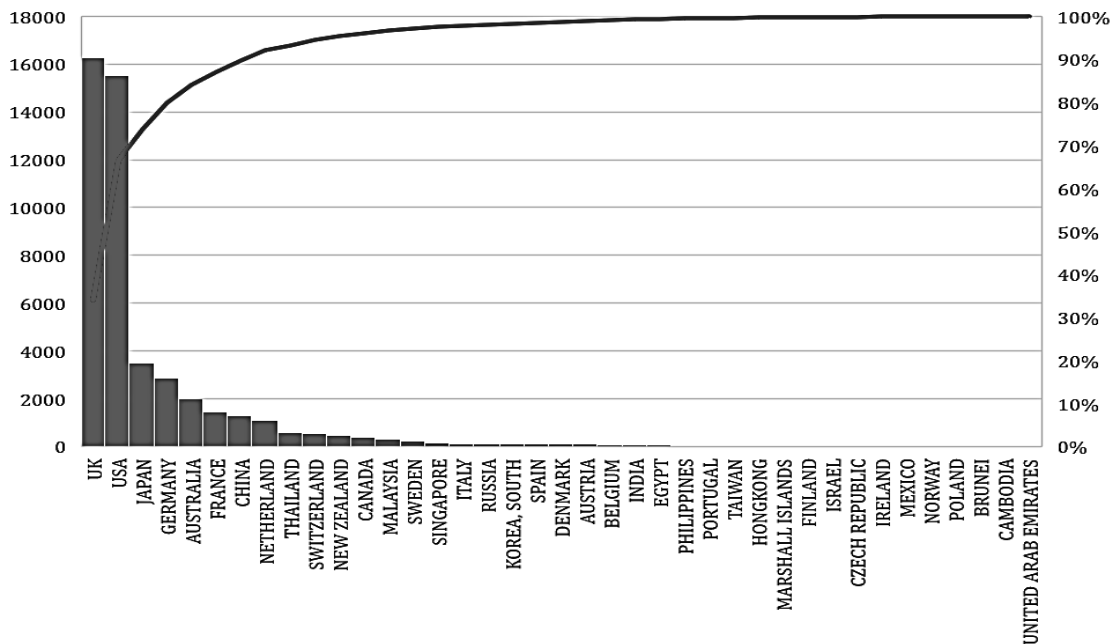


Figure 7 Pareto chart of Thai students studied abroad in 2018-2022

Source: Office of the Civil Service Commission (2018)

The analysis from Pareto presents obvious result that the United States of America and the United Kingdom are the top most popular destination for Thai students. From previous research, Lertjanyakit and Bunchapattanasakda (2015) mentioned that the two countries are the most popular destination for Thai students to further their studies in Degree level. While the number of student decreased, foreign colleges and universities are already eyeing Thailand as a place to offer their courses or to open a branch campus – the University of Central Lancashire (UCLan) is one. By opening a branch campus or offering university courses through a Thai partner, a foreign university would hope to attract not only local students, but also students from across the ASEAN Community. Once the AEC is in place, the free flow of people across ASEAN borders should make it easier for students to choose to study outside their home country, but within their region. This may be one of the reason of number of student going abroad is decreasing. There are so many opportunities for International Education within the country as well. The Choudaha and Chang (2012) suggested that trends indicate that enrollment has been most popular for English speaking countries, students from the traditional countries like to study abroad and practice English. The top two countries, the United

Kingdom and the United States of America are the main recruiter and the number of international students population is still maintained.

## **Conclusion**

There are points to discuss from the statistical analysis, declining number of students going abroad and opportunities for educational stakeholders in the industry. In Thailand, international education has been popular. However, there has been research showing the enrollments decline crisis in Thai Universities as well, resulting from number of Thai population. The Asian Correspondent (2016) mentioned that the shift in education level of Thai women affect the timing of marriage and the rate of fertility. Trend shifts in some study areas and impact from the labor market. The future of international education in Thailand cannot be just to improve the language skills, upgrade their CVs to find a better paid jobs and gain life experience by going to study abroad but to go beyond that to be competitive enough. Stakeholders in education should be aware of this trend.

Education 4.0 and learning in new ways have been more realistic. It is considered to be the changing game of future education at all levels. Lifelong learning and eLearning technology helps

students to learning in different ways, excluding going to school or classroom. This is an interesting issue for further research.

### Recommendation

Promoting education in Thailand is challenging and quality seems to be an issue, as well as English language ability. The language ability can make it more difficult for Thai education to compete in international education market and this need to be improved stated Lertjanyakit and Bunchapattanasakda (2015).

In the near future, this paper predicted that Thai students will continue to flow to English speaking countries for international education. However, the trend is slowing down due to the number of students itself rather than the preference and option available in the country.

There are options for Thai government to consider for the best of the nation. Developing alternative for the students who wish to study abroad, or enhance the importance of University's collaboration, for example. It is impossible to prevent students from studying abroad but the government could promote alternative education provider which offer similar standard of education for the students. Since there will be more demand in international higher education in Thailand for both Thai and

international students. Offering a dual degree program and the international degree in Thailand is another option that is now booming in the country.

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