



Thailand PCI: SI: VAT Hotel & Restaurant Index

Introduction and Project's background

A strong growth rate in tourism industry with a high competitiveness, hotel industry expanded rapidly due to the tourism demand.

The contribution of the travel and tourism to GDP as a share to GDP was 13.9% in 2010 and rapidly grow up to 21.9% in 2019 over the past ten years



Source: World Data ATLAS and Statista.com

A significant increase in both forward and backward multiplier over ten years

Forward Multiplier 1.3x ---> 1.6x

Backward Multiplier 1.9x ---> 2.6x

Also contributing to lessen of unemployment rate that crate the jobs more than 5 million people and Thailand has a strong position in Asia Pacific region as of 2018

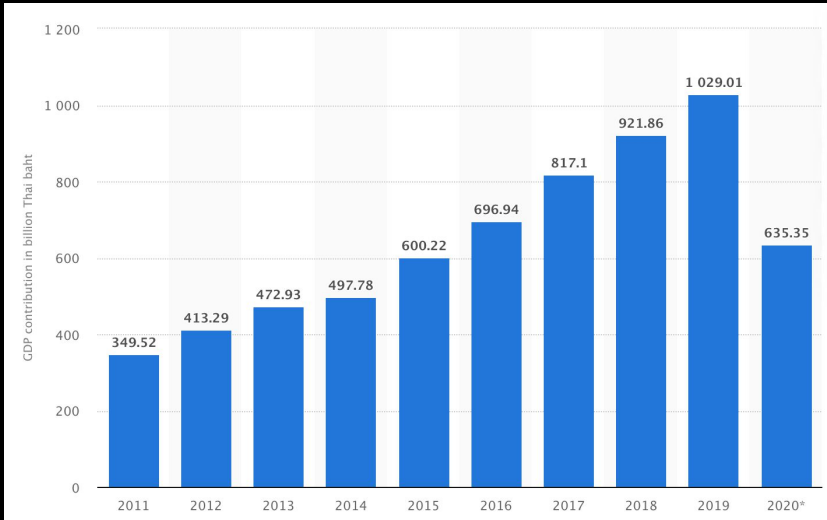
5th

Thailand ranked at

Introduction and Project's background

Thailand has a well-developed hotel industry that can attract the capital investment in Thailand resulted in the investment opportunities in many upcoming destination.

The contribution of the hotel and restaurant to GDP has an obvious upward increasing trend in the many past year (2011-2019)



They are many popular players in Thailand in this industry that can attract domestic and foreign tourist leading to a high investment rate.

The advantage from "Value for Money"

1st

in Asia Pacific of Natural Resources

3rd

in Southeast Asia of Travel&Tourism competitiveness index

31st

World ranking of Travel&Tourism competitiveness index

Source: Statista.com, Kingdom of the Netherlands, the Netherlands Embassy, and Krungsri Research Thailand

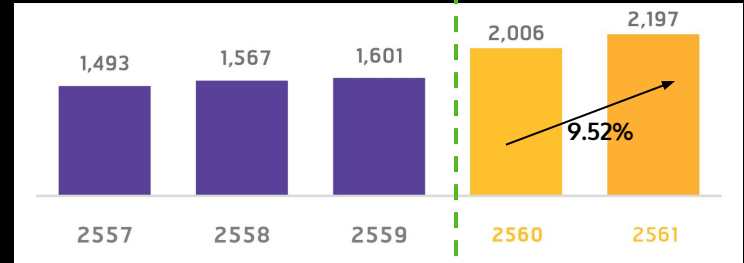
Introduction and Project's background

The restaurant industry has a very high relationship between the Tourism and Hotel industry, with a positive economic & financial outlook.

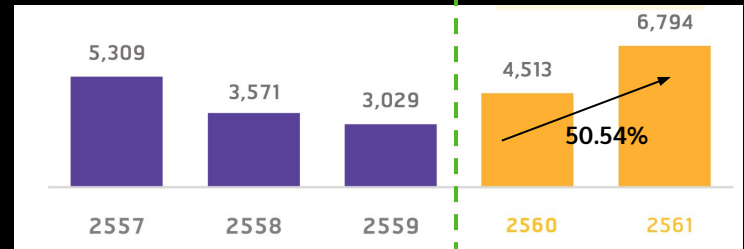
Tourism industry is an important role to support the expansion of restaurant in Thailand. Based on the statistic, the increasing trend of the tourist will have direct effect to the trend of the restaurant.



The Market Capitalization of the Restaurant in Thailand is more than **400,000,000,000** baht as of 2018, with annual growth rate of **4-5%**.



New registered restaurant (unit)



New registered capital (million baht)

Source: Department of Business Development (DBD), Ministry of Commerce, Department of Industrial Promotion, and CEICdata.com

Sources of Data



Thailand's Private Consumption Index (PCI),
Service Index (SI), VAT Hotel & Restaurant Index



Keyword Search

Source: Bank of Thailand and Google Trends

PART 1

PART 2

PART 3

PART 4

PART 5

Briefs of Analytical methodologies

The equation will be estimated by the Regression model.
In order to approximate the official data by the collected alternative data set.



$$y = \beta_0 + \beta_1x_1 + \beta_2x_2 + \dots + \beta_ix_i + \varepsilon$$

Dependent Variable : Conventional Data

Independent Variables : Alternative Data

Conventional Data : Data obtained from the Bank of Thailand under Private Consumption Index

Alternative Data : Data obtained from Google Trends

Source: Bank of Thailand and Google Trends

Briefs of Analytical methodologoes

As the official index comprises of both hotel and restaurant, and also related to the tourism industry, the selected keywords form Google Trends need to be parallel.

Keyword Selection Criteria

"Hotel & Restaurant Index"

Hotel keyword

ที่พักพทยา	จองโรงแรม
ที่พักหัวหิน	โรงแรมแนะนำ
ที่พักภูเก็ต	ที่พักเชียงใหม่

Restaurant keyword

ร้านอาหาร
ร้านอาหารแนะนำ

Tourism keyword

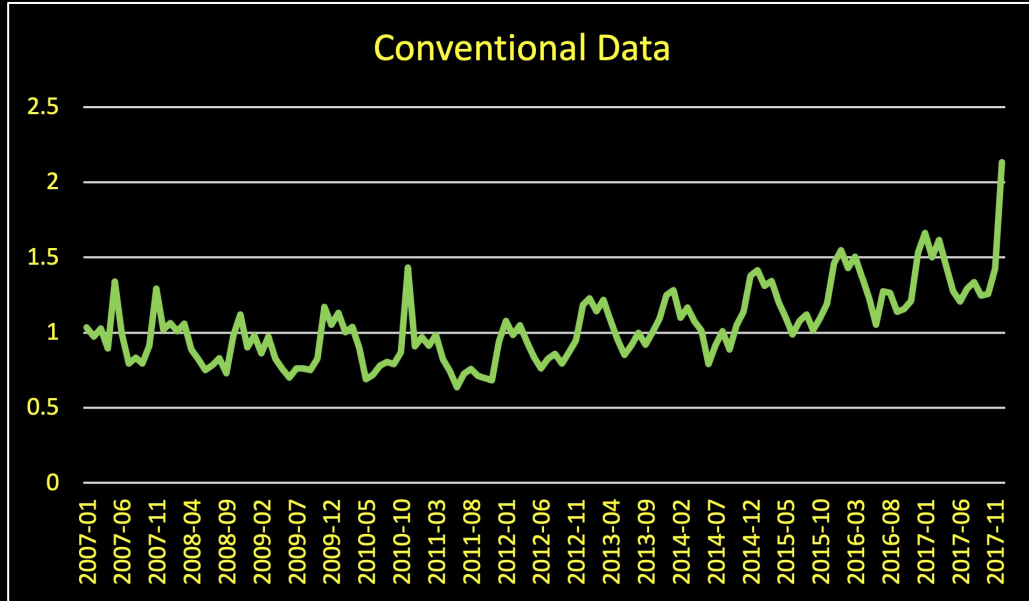
พทยา	ภูเก็ต
หัวหิน	เชียงใหม่



12 keywords combined in the model will be altogether enhanced the value of the R-squared

Results: Historical trends of conventional indicators

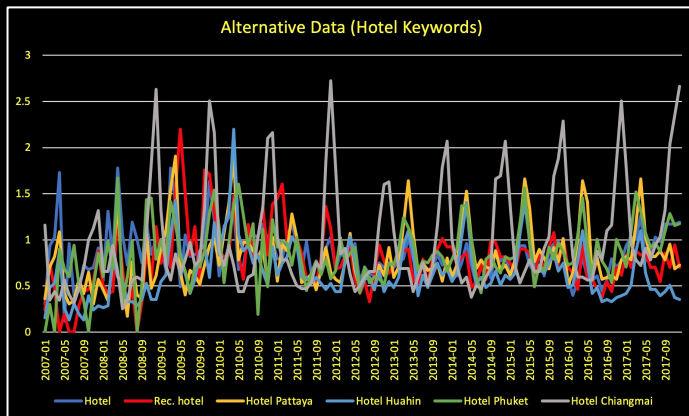
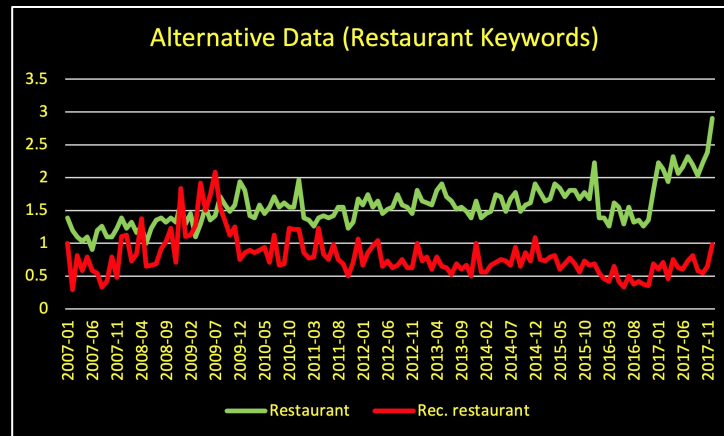
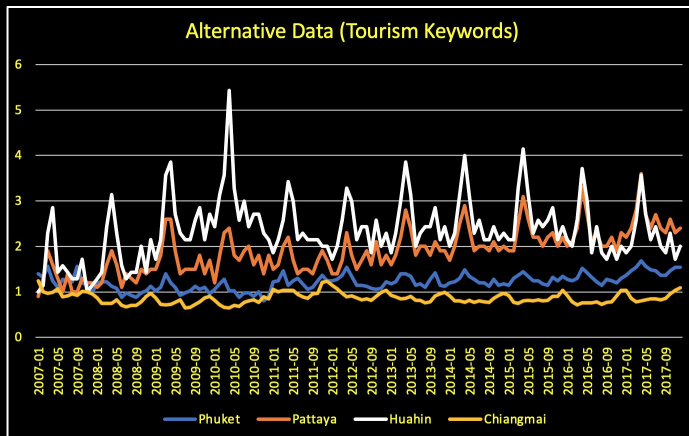
The Hotel & Restaurant Index obtained from official source shows cyclical pattern/seasonal movement in the increasing upward sloping



Keys takeaway

- Trend of the data tend to be peak at the first quarter in a year and the last quarter in a year
- Trend of the data tend to increase in a seasonal period of the year.

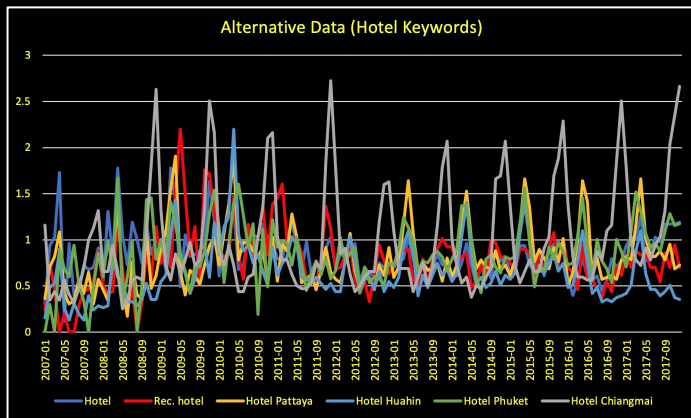
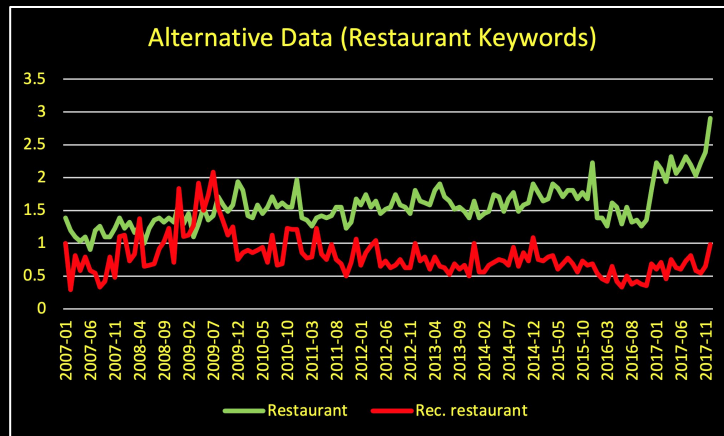
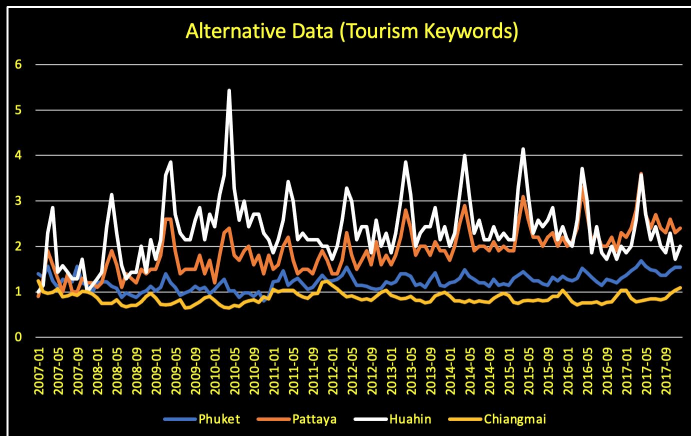
Results: Historical trends of alternative indicators



Keys takeaway

- **Tourism Keywords** : Overall tourist attractions places including Phuket, Pattaya, and Huahin will reach their peaks in April.
- However, for Chiangmai it reaches peak at December.

Results: Historical trends of alternative indicators



Keys takeaway (continue)

- **Restaurant Keywords** : In this case, the graph is substantial fluctuated. The green graph shows upward sloping trends.
- **Hotel Keywords** : The pattern of data trends are really close to the those of the Tourism Keywords. There are 3 tourist attractions places peak in April ,but only Chiangmai will peak in December

Results: Relationships between conventional and alternative indicators

```
. reg hotelandrestaurantindex restaurant hotel phuket pattaya huahin chiangmai rechotel recres  
> taurant hotelpattaya hotelhuahin hotelphuket hotelchiangmai
```

Source	SS	df	MS
Model	5.03498001	12	.419581668
Residual	3.12166202	119	.026232454
Total	8.15664203	131	.062264443

```
Number of obs   =    132  
F(12, 119)     =    15.99  
Prob > F       =    0.0000  
R-squared      =    0.6173  
Adj R-squared  =    0.5787  
Root MSE      =    .16196
```

hotelandrest~x	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
restaurant	.0779846	.0650792	1.20	0.233	-.0508787 .2068478
hotel	-.0850277	.0690593	-1.23	0.221	-.2217721 .0517167
phuket	.3343615	.1385183	2.41	0.017	.0600815 .6086415
pattaya	.2207931	.0812735	2.72	0.008	.0598635 .3817226
huahin	-.1597643	.0711352	-2.25	0.027	-.3006191 -.0189096
chiangmai	-.1698081	.1861141	-0.91	0.363	-.5383325 .1987164
rechotel	-.1719945	.0580053	-2.97	0.004	-.2868507 -.0571382
recrestarant	-.0245072	.063805	-0.38	0.702	-.1508474 .101833
hotelpattaya	.0110506	.1081473	0.10	0.919	-.2030919 .2251931
hotelhuahin	.1522106	.1510275	1.01	0.316	-.1468389 .4512601
hotelphuket	.1023747	.0587547	1.74	0.084	-.0139655 .2187149
hotelchiangmai	.2001958	.0384913	5.20	0.000	.1239792 .2764124
_cons	.4526243	.178659	2.53	0.013	.0988616 .806387



Keys takeaway

From summary output, R-Sqaure is around 61.73%. This can be imply that the independent variables can explain or predict for the **official** data by approximately 61.73%.

Results: Key findings

From all the results and some of significant points in the official data and alternative data including regression equation, behavior of the index can be analyzed and explained better.



Behavior Analysis

The result from historical trend of conventional indicator implies that in a first and last quarter of a year which are the seasonal period, the searching for a related keywords "Hotel&Restaurant" will be high because of the behavior of people as most people want to travel and booking for vacation in that seasonal period.



Behavior Analysis

From the result of alternative indicators historical trends it implies mainly that both hotel and tourism keywords share substantial similarity trends. There are 3 tourist attractions places including Pattaya, Huahin ,and Phuket peak in April. However, only Chiangmai reach its peak around december. From these data, we enable to predict that the seasonal may be the important factors for determining the people behaviour. To give an example, the summer is around april so people may prefers to take the vacation along the sea coast. However, in the winter people tends to take their vacation in Chiang mai or the northern region instead.

Summary and Policy recommendations

1

Google trend enable to predict or evaluate the performance of hotel and restaurants which highly correlated to tourism industry in each period. Hence, government should focused on targeted industry as new economic S-curve and incorporating these alternative set of data.

2

When government support the tourism industry, there are two main concerns. For the first case, government should keep promoting during the peak ,second,but in the low season government may need to step in and do some expansionary policy. As a result, this action will generate spill over effect to the economy and can increase annual sector's growth rate.

3

This regression equation can be predicted the official data by using alternative data set to create the model. With the value of resulted R-squared, the model should be used along with others alternatives indicators to be substituted the official data more precisely

Thank you

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