

The rising of demand and supply of illegal loans in Thailand

EE406 CONTEMPORARY ECONOMIC ISSUES



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i) Introduction

Thailand has been dealing with the problem of illegal lending for a long time. When the military government came to power, this was a primary concern for them. In the first three years, many efforts were made to tackle the illegal loan problem. Thai citizens who were reportedly engaged in an illegal loan shark operation were arrested. Furthermore, to reduce the number of people who are in debt, the government has enacted some legislations and attempted to restrict illegal lenders by enforcing strict limits on the annual interest rates that can be charged. However, our society has many more illegal lenders and indebted people, so the problem still persists until today. This could be due to a change in the format of the informal loan. According to many reports, several illegal lenders have shifted their services online, using social media and online chatrooms to seek out their target debtors. Additionally, since there are restrictions on meeting people in person during the COVID-19 outbreak, which means that people are spending more time online, loan sharks have had more opportunities to offer their loans to victims. Moreover, many people have suffered financially in the recent year because of economic failing, which has been exacerbated by the pandemic. In this situation, thinking of borrowing is logical. As a result, this problem appears to be more severe during the COVID-19 pandemic.

To conclude, the following questions are discussed in this paper:

1. Is it verifiable that the number of illegal loans has escalated during the coronavirus pandemic?
2. Is there any illegal lenders who try to lend money through social media platforms such as Twitter? And what should the pattern of a network graph be?

The following methods are used to conduct the analysis:

1. The regression analysis by applying the data from Google Trend
2. Social Network Analysis of illegal lenders

ii) Literature Reviews

The following research papers concentrate on the Loan-Shark Problem, which has long been a problem in Thai society, as well as the impact of Covid-19 on illegal loan and other loan types. There are several relevant studies, which are divided into two main categories.

1. Literature related to informal debt

- Charoenratana (2017) illustrated that the informal debt is intimately connected to the formal debt in Thai society. There are both internal and external factors that contribute to informal debt. Individual behaviors are the internal factor, while the external factors include the income-expense imbalance and the emergency financial necessity, regardless of the abnormally high interest rates charged on informal loan.
- Charoenratana, Suwanprasert and Sretthachau (2016) showed that when confronted with informal debt issue, both the group of secure income and the group of insecure income were forced to vulnerability. To be more detailed, in the insecurity income group, the problem was more serious and complex than the security income group. As a result, the socio-economic factors make debtors more vulnerable and exacerbating the inequality gap.
- Eiamlamai (2019) stated that Thai governments have not been able to abolish loan sharks or debt reduction in Thailand's society because informal debt evolved or changed in complicated formats. Furthermore, it was discovered that informal debt problems in the Republic of the Union of Myanmar and the Lao People's Democratic Republic have resulted in the format of contract debts that are frequently involved or found to correlate with illegal activity such as casino and illegal immigration. However, the debt problem is not as severe or complicated as it is in Thailand.
- Collins (2008) revealed that in urban areas, formal debt is the main source of over-indebtedness, whereas in rural areas, informal debt is the main source. High indebtedness is more likely among medium and high-income households in urban areas, but it appears at all income levels in rural areas. Lastly, high indebtedness in rural households is frequently permanent, but it is often temporary in urban households.

- Mayer (2012) indicated that after state usury caps were drastically increased, violent of loan sharks expanded in the small-loan market, and these loan sharks disappeared when interest-rate deregulation was enacted at the end of the 1970s.

2. Literature related to Impact of COVID-19

- Domoto and Matoba (2020) stated that the Japanese economy dramatically worsened during the COVID-19 outbreak and the damage caused by illegal financial transactions appeared to be rising.
- Cooper, Mullins and Weinstock (2021) showed that during the COVID-19 pandemic in 2020, several types of consumer debt such as mortgages, auto loans, credit cards and student loans revealed various patterns. Credit card balances fell by roughly \$76 billion in the second quarter, the greatest quarterly drop ever. Other household debt remained stable as mortgage debt climbed.
- Žunić, Kozarić, and Dželihodžić (2021) investigated the factors that influence the movement of non-performing loans in Bosnia and Herzegovina. In the analysis, the variables non-performing loans, loan loss provision, GDP and dummy variable COVID-19 were considered. It has been shown that there is a strong positive relationship between non-performing loans and the state of the country's economy. Furthermore, due to the current application of the loan moratorium, it has been shown that the variable COVID-19 has a delayed effect on non-performing loans.
- International Finance Corporation (2021) revealed that many financial institutions reported reduced loan collection and disbursement levels after the beginning of the COVID-19 outbreak. Furthermore, almost half of financial institution portfolios were hit by government moratoria and voluntary deferrals. Lastly, Financial institutions began to see significant rise in non-performing assets.

- Dursun-de Neef and Schandlbauer (2021) stated that commercial banks raised their lending supply comparatively more during Covid-19. New term loans were issued. Some commercial banks raised their cash reserves to manage liquidity risk. This resulted in their size increasing, which was mostly financed by insured deposits. On the other hand, Banks with higher pre-crisis capital reserves handled the liquidity risk without raising their cash.

The Research Gap

From the above research papers, there is only one paper that directly mentions the impact of COVID-19 on illegal loans. Furthermore, there was no variety in the research methods. Most of the research papers used only the regression method.

iii) Data& Methodology

This study is divided into two parts because both demand and supply for illegal loans can exacerbate the situation of illegal loans.

3.1 Observe the relationship between COVID-19 and keywords that could represent the demand of illegal loan

- Sources of data

The Ministry of Public Health and Google Trends are the two main data sources. Data from Google Trends contains time series data of four keywords, which are กู้เงินด่วน, กู้หนอระบบ, ยืมเงินฉุกเฉิน and เงินด่วน 10 นาที โอนเข้าบัญชี. And data from the Ministry of Public Health presents the number of COVID-19 infected cases in Thailand, monthly data from January 2020 to October 2021.

- Methodology
- 1. Find the keyword on Google Trends
- 2. Analyze the result from Google Trends
- 3. Run a regression model to check the relationship

The Linear-log model is a mathematical model that we employ in this research. This is represented as a function of dependent variable and logarithm of independent variable.

Linear-log model or semi-log model:

$$Y_i = \beta_0 + \beta_1 \log(X) + U$$

Y_i = Each keyword (กู้เงินด่วน, กู้หอระบบ, ยืมเงินฉุกเฉิน and เงินด่วน 10 นาที โอนเข้าบัญชี)

β_0 = Intercept of the model

β_1 = Coefficient

X = COVID-19 infected cases in Thailand

U = the random error

3.2 Observe the supply-side, which is illegal lenders, by performing Social Network Analysis

- Sources of data

The main source of data is Twitter. ปล่อยกู้รายวัน was used in this research to visualize a network of illegal lenders. Furthermore, โกงเงินกู้ and ปล่อยกู้รายวัน were used together to evaluate illegal lenders who did not receive their money back, which is one of the risks associated with illegal loans.
- Methodology
 1. Use NodeXL in Excel to extract information from Twitter
 2. Generate a network graph
 3. Compute Network indicators such as Vertices, Unique Edges, Total Edges, Diameter, Average Geodesic Distance, Graph Density and Modularity.

iv) Result Analysis

4.1 Result from Google Trend

(Figure 1 and Figure 2; Appendix 1)

According to Figure 1, Google Trends illustrates the search volume that categorized by subregions. The result suggests that these three terms which are กู้เงินด่วน, กู้หนอกระบบ and ยืมเงินฉุกเฉิน are popular among people who lives in Bangkok, metropolitan areas (Pathum Thani, Nonthaburi, Samut Prakan), Chonburi and Chiang Mai.

According to Figure 2, The result demonstrates that กู้เงินด่วน has the highest search volume in Google Search. The search volume was increasing over time. The peak periods that people search for this key word were during the first wave (March 2020) and second wave (the end of 2020) of COVID-19 in Thailand. Next, กู้หนอกระบบ has the second largest search volume. The graph was slightly increased and then falling. Lastly, ยืมเงินฉุกเฉิน has the lowest search volume. The trend is very similar to the pattern of กู้เงินด่วน. It was clearly increasing between 2020 and 2021, which is when COVID-19 hit. However, the regression analysis does not support the pattern observed in the graph. Because of the statistically insignificant p-value and low R-squared, it was determined that there is no relationship between each keyword and COVID-19 infected cases.

(Figure 3 and Table 1; Appendix 1 and Appendix 2)

The regression analysis in this case verifies the pattern shown in figure 3, which is the demand for emergency loans, a factor that could contribute to the use of illegal loans, has been increasing over time since COVID-19 attack. The regression results provided in Table 1 demonstrate that there is a relationship between the log of the number of COVID-19 infected cases and เงินด่วน 10 นาที โอนเข้าบัญชี. In terms of meaning, it was estimated that if the number of COVID-19 patients rose by 1%, เงินด่วน 10 นาที โอนเข้าบัญชี would rise by 73.94/100 units. Furthermore, in terms of R-squared,

it can be determined that 61.95 percent of the variance for เงินด่วน 10 นาที โอนเข้าบัญชี can be explained by COVID-19 infected cases.

o Key advantages of using these data/methods

By using Google Trends, it is uncomplicated to obtain online data relevant to the research. The information is available to everyone. It also shows which subregions have the highest search volume for our keywords. Furthermore, it can be used to conduct further analysis on the factors that may have impacted the pattern of keyword.

o Limitations of using these data/methods

The sets of data used to examine the effect of COVID-19 are monthly data from 2020 to 2021. This can be considered a small sample size. This is the point to be concerned because a small sample size diminishes the study's quality and raises the margin of error, perhaps indicating that the study may not have a strong meaning.

4.2 Result from NodeXL

(Figure 4 and Figure 5; Appendix 1)

According to Figure 4, the graph, which was gathered from Twitter on Monday, 13 December 2021, demonstrates a network of 555 Twitter users whose recent tweets contained "ปล่อยกู้รายวัน", or who were replied to or mentioned in those tweets, generated from a data set limited to a maximum of 18,000 tweets. To be more specific, the graph does not represent a viral pattern. There are several subgroups (340 subgroups), each with their own box. Therefore, its network may not be effective in terms of spreading tweets, but there are many Twitter users who seek to offer loans online.

According to Figure 5, the graph, which was gathered from Twitter on Monday, 13 December 2021, demonstrates a network of 51 Twitter users whose recent tweets contained both โกงเงินกู้ and ปล่อยกู้รายวัน, or who were replied to or mentioned in those tweets. To be more explicit, the graph follows the same pattern as the graph that contains only ปล่อยกู้รายวัน. However, there are fewer subgroups (21 subgroups). To sum up, the result can be implied that there exist some illegal lenders in #ปล่อยกู้รายวัน that do not receive their money back because "โกงเงินกู้" is employed when lenders would like to condemn borrowers who do not repay their debts.

(Table 2; Appendix 2)

Since result from containing both โกงเงินกู้ and ปล่อยกู้รายวัน is subset of the result containing only ปล่อยกู้รายวัน, the number of messaging activity of โกงเงินกู้ and ปล่อยกู้รายวัน is lower. Another point that needs to be mentioned is that by using ปล่อยกู้รายวัน, the number of "Tweet" feature is the highest compared with other activities. Many people apply "Tweet" feature to announce their intention to offer new loans to other people. However, by using โกงเงินกู้ and ปล่อยกู้รายวัน, the number of "Replies to" feature is the highest compared with other activities. And from my observation, this could be because many people apply the "Replies to" feature as a tool to share their experience when debtors do not repay.

o Key advantages of using these data/methods

First, in terms of data, obtaining data from Twitter using NodeXL is incredibly easy. NodeXL makes it simple to investigate, interpret, and visualize network graphs in Twitter communities. Furthermore, NodeXL also has some extra capabilities, such as the ability to calculate key network statistics.

o Limitations of using these data/methods

Data is only available for 8 to 9 days. Due to this limitation, no regression model can be analyzed, and the relationship between the interesting issue and the COVID-19 pandemic cannot be seen. Furthermore, queries are limited to 18,000 tweets.

V) Policy recommendation and conclusion

Policy recommendation

Nowadays, more people are falling prey to fraudulent online lenders. As illegal loans have shifted to an online platform, borrowing has become much faster and easier than previously. Therefore, in this research, policy recommendations would be mainly focused on how to minimize online illegal loans. First of all, Thai governments have attempted to eliminate loan sharks for many years, but this has been unsuccessful so far. Thus, all parties should work together. The government should incentivize citizens to report more, one option is to offer financial incentives to whistleblowers. People should contact the police if illegal lenders are providing unusual interest rates. Furthermore, social media platforms such as Facebook, Instagram, and Twitter are also misused for illegal loan advertising. It is possible to persuade people to borrow more. As a result, online advertisements that are illegal, misleading, or deceptive should be prohibited by the government. Lastly, to encourage customers to select banks over online loan sharks, banks need to be more actively involved in this type of business. And the government should promote and support online lending by banks, particularly during the COVID-19 pandemic, because the emergency financing needs of citizens and small businesses are extremely needed in this period. However, by imposing this policy, there are still some groups that may not receive advantages. Low-income populations have trouble borrowing money from banks because they do not have enough collateral or credit. So, I would strongly encourage that microfinance should be introduced into Thai society, especially on online platforms. Consequently, villagers, microentrepreneurs, and poor families can get small loans from microfinance institutions.

Conclusions

The illegal loan issue has become more severe as many people with middle to low income have faced financial difficulties during COVID-19 and they might need to access the capital resource, especially money. However, there are few research studies that can adequately confirm this relationship. Therefore, this research aims to prove that the relationship between the COVID-19 and the rising in demand for illegal loans exist. Furthermore, since the structure of illegal loans has evolved over time, this research intends to tackle the problem by making a better understanding on the structure of illegal loans supply. It would be difficult to alleviate the spread of illegal loans without this understanding.

Beginning with the result from Google trend (Demand-Side), the graph demonstrates that the search volumes of all selected words (กู้เงินด่วน, กู้หนอกระบบ, ยืมเงินฉุกเฉิน and เงินด่วน 10 นาที โอนเข้าบัญชี) that can represent the demand for the illegal loans have climbed since the beginning of 2020, which is when COVID-19 happened. On top of that the regression analysis only confirm that the COVID-19 has a significant impact on the rising of the search volumes of เงินด่วน 10 นาที โอนเข้าบัญชี. However, this might be because the sample size is too small. And my own view on this matter is that there should be an examination of this relationship again with a larger sample size in the future.

And the result form NodeXL (Supply-Side), the network graph of recent tweets contained "ปล่อยกู้รายวัน" does not go viral, it does not spread across all social platforms which is Twitter or shared by a large number of people, but one thing to be noticed is that we can observe that there are many illegal lenders are attempting to lend online via the "Tweet" feature. Another network graph which includes both โกงเงินกู้ and ปล่อยกู้รายวัน has the same pattern with lower subgroup. And since these results are observable, it can be determined that the risk associated with illegal loans, that the loan will not be repaid, has existed.

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Appendix

Appendix1: Figures

Figure 1 : Compare กู้เงินด่วน, กู้หนอกระบบ and ยืม เงิน จุกเงิน by subregions



Figure 2 : Interest over time by using 3 keywords (กู้เงินด่วน, กู้หนอกระบบ and ยืม เงิน จุกเงิน)

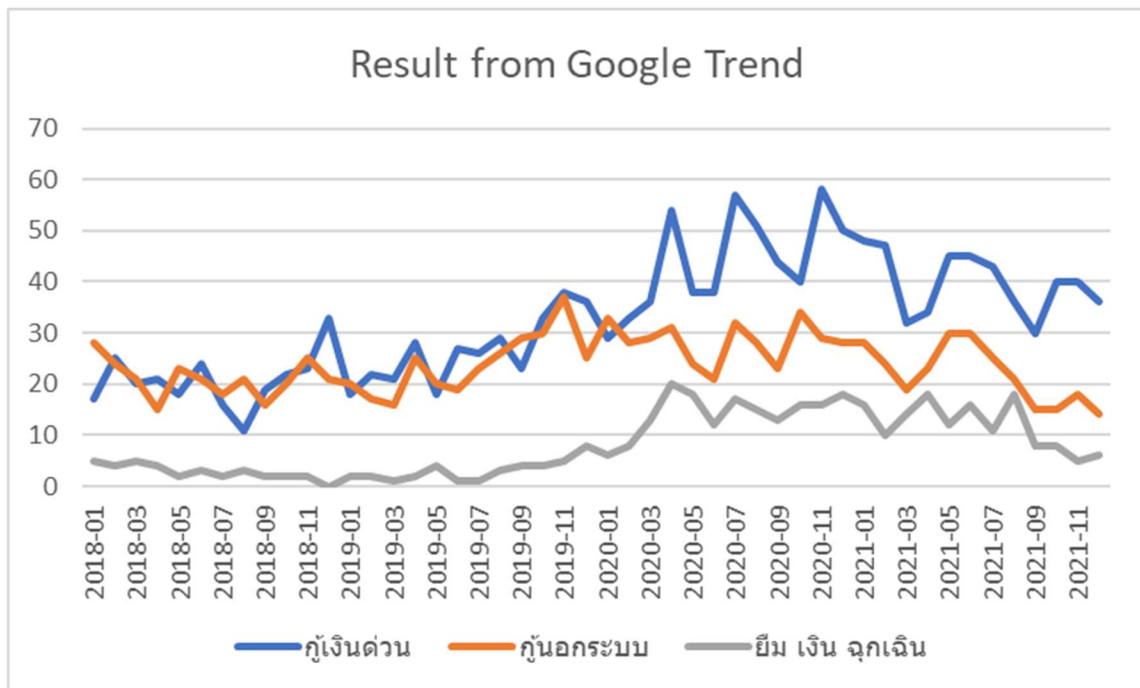


Figure 3 : Interest over time by using only one keyword (เงินด่วน 10 นาที โอนเข้าบัญชี)

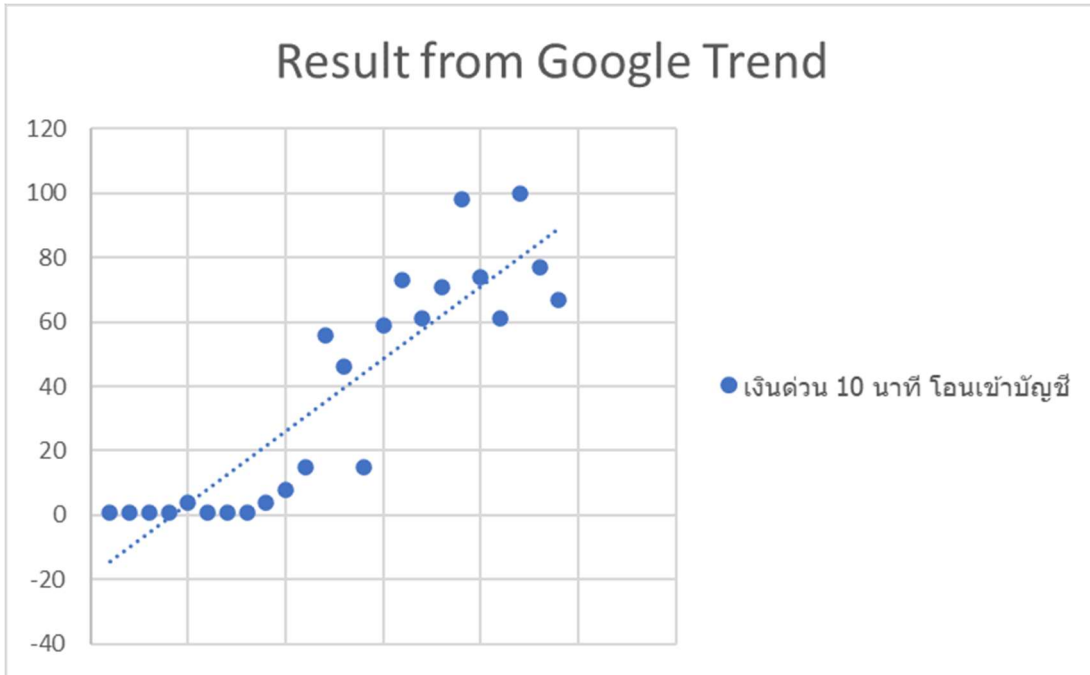
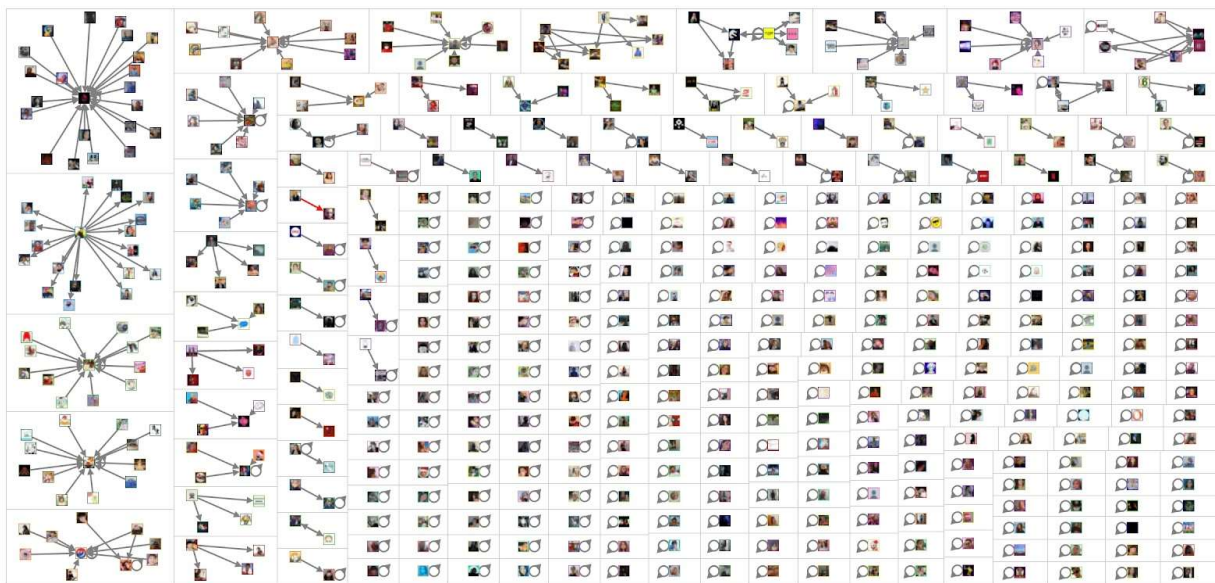
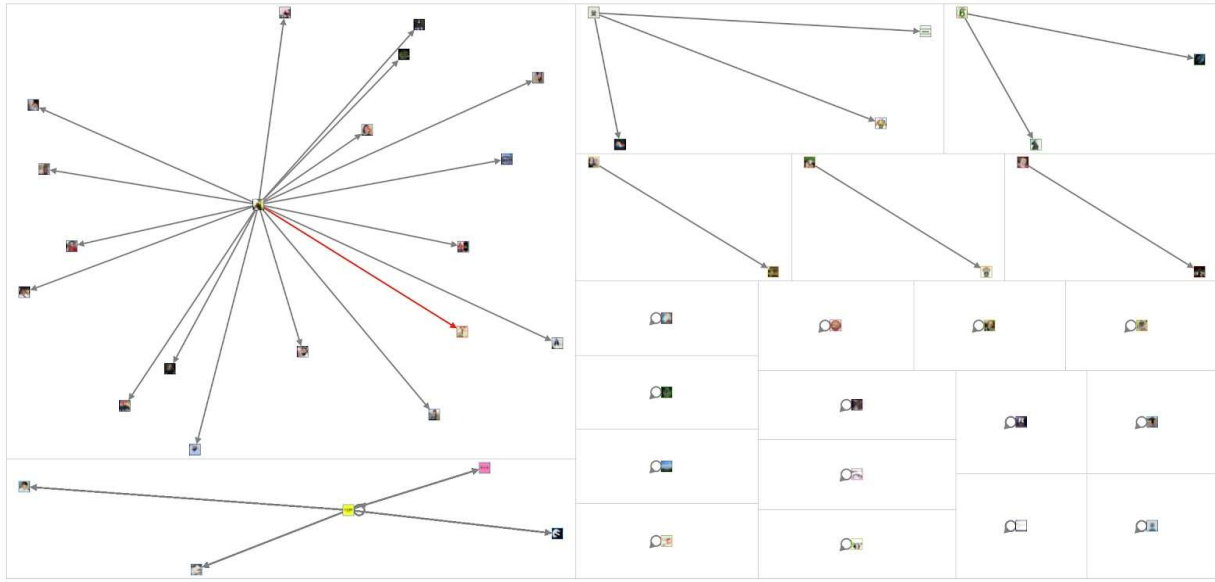


Figure 4 : Network graph of ปล่อยกู้รายวัน



Produced by Phatakan

Figure 5 : Network graph of โกงเงินกู้ and ปล่อยกัวยาววัน



created by Phatakan

Appendix 2: Tables

Table 1 : Regression Analysis Result

SUMMARY OUTPUT

Regression Statistics	
Multiple R	0.787099753
R Square	0.619526021
Adjusted R Square	0.600502322
Standard Error	22.44146989
Observations	22

ANOVA				
	df	SS	MS	F
Regression	1	16400.88131	16401	32.566013
Residual	20	10072.39142	503.62	
Total	21	26473.27273		

	Coefficients	Standard Error	t Stat	P-value
Intercept	-326.898076	63.45401489	-5.152	4.85E-05
log of COVID-19 infected case	73.93691115	12.95624076	5.7067	1.39E-05

Table 2 : Compare number of massaging activities

	Mentions	MentionsInRetweet	Replies to	Retweet	Tweet	Total
ปลอญกัรรายวัน	87	43	104	160	319	713
โงงเงินกั #ปลอญกัรรายวัน	53	30	67	30	20	200

Table 3 : Compare the key network statistics

	Vertices	Unique Edges	Total Edges	Diameter	Average Geodesic Distance	Graph Density	modularity
ปลอญกัรรายวัน	555	500	713	4	1.395995	0.00074	0.524041
โงงเงินกั #ปลอญกัรรายวัน	51	37	200	2	1.629291	0.01176	0.178406