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Crime Rate among ASEAN Members in relation to Government and Education

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A countries' economy is affected by stability, security and safety. Due to the growing tourism of the ten dynamic countries, researchers explore to find out if the ASEAN countries' form of government, and status of educational attainment, have an influence on its crime rate. The study used exploratory data analysis or commonly known as data mining. The variables considered were: government type, employment rate, minimum wage, average education years, literacy rate, and safety rate. The degree of safety in a country does not depend on the citizen's literacy or educational attainment, nor on the structure of government. Carrying out a strategic and effective policing power is independent of the structure of government a country has.

Keywords: ASEAN countries, government form, crime rate, education status, minimum wage, government structure

1.0 Introduction

Crime exists everywhere and anywhere in the world. Historically, the causes and origins of crime have been the subjects of investigation by many disciplines. It is one of the constant endeavors of governments and policing organizations to bring crime rates down, to make the world a safer place to live in. Reducing crime rate is a heavy burden for the community as a

whole. The important improvements in law enforcement and justice system keep the prevalence of crimes on hold or even keep it at a minimum, infusing the fear on the degree of punishment or sanctions that refrain aggressors and lawbreakers from doing any type of criminal acts. There are many different motives and causes of crime and a number studies have already been made to understand and bring down criminal exercises.

Baciu and Parpucea (2011) indicated that some studies have focused on the impact of wages and unemployment rate on crime rate and from the results of these studies, it shows that although it is determined by wages and unemployment rates, the long-term decrease in crime rates will also depend on the improvement of the compensation of less skilled men.

On the other hand, Moretti (2005) considered many theoretical bonds between the crime and education. He supposed that schooling increases the probability of landing rightful jobs. His notion was that schooling may precisely increase the psychic cost of committing crimes. That education changes the preference of committing crime, in indirect ways. It makes an individual more risk averse. From Moretti's point of view, it is summarized that education discourages crime with its greatest effects on offenses in returns or punishment.

Hjalmarsson and Lochner (2012) share the same thought with Moretti. According to them, education decreases crime since forward-looking individuals place greater weight on any expected future punishment associated with their criminal activities. The nature of forward-looking individuals, is that schooling makes them risk averse, and considers crime to effect uncertainty in returns of punishment. In the same way that education makes one to be more cautious of consequences of crime, it also makes a person careful with regard to the set of people he or she interacts with. As they say, bad company corrupts good character.

Most researches strongly suggest that the average citizen sees law administration and enforcement as the critical and rational sources for information on crime and prevention. Ideally

speaking, the more effective police system a country has, the less crime will be. Normally, this is how citizens and public officials espouse this view. Wilstrom and Torstensson (1999) used that basis that police are major contributors in the development of local crime-avoidance efforts and relevant methodology and techniques in digging problem profiles. They also made a premise that a correctly designed community policing is a significant part of police work.

In a parallel view, Dudzinski (2010) believes in simple scheduling techniques. Police officers can prohibit crime by arranging shift changes and other administrative exercises for periods of time when crime is expected to be low and utilize forces when crime is expected to be high. Salehi (2012) explained official control, which means there are places and areas in cities that make any kind of crime become called crime-prone. These places have suitable conditions regarding both time and place, have the required conditions for transgression.

Sherman (2002) viewed that serious crime rates are not prevented by increasing number of hired police enforcers who provide rapid 911 responses, or do unfocused and random patrols, and make reactive arrests. Sherman's point was anchored on the thought that an effective community policing needs to have a clear focus on crime risk factors. He stressed that organized patrols, proactive or aggressive arrests and problem-solving at ‘hot spots’ locations will show a substantial evidence of crime prevention. Therefore police can prevent crimes if they use certain methods under certain conditions.

The prevalence of crime results to financial problems for the society, the government and as well as on the state judicial organization (Seyed and AAvani, 2014). Reynolds (1984) stated that government finds it easy enough to spend money, but difficult to spend it productively. When the government fails to create or provide employment opportunities to its people, crime will more likely increase. As how Miles (2002) put it, poverty is the actual issue. She believes that poverty is the common denominator in drug abuse, in criminal and antisocial practice and

behavior. Unemployment results to poverty and boredom, and eventually leads to drug abuse and crime. Taylor (2006) emphasized that crime creates a way for the poverty-stricken people to get the material things they cannot have through lawful means. Often threat or pressure bring about violent acts like robbery. The consequence that violation yields may offset the risk of getting caught and arrested, especially considering that the opportunity cost is smaller than that of a wealthier person. Hence, poverty increases crime rates.

The researchers believe that the police system established is aligned to the type of government in place. The policing should follow according to the effectiveness of the ruling power. Hartman (2014) summarized the functions of government: to maintain authority, and to administrate. According to Hartman, the basic function of government is to protect the lives and properties of its citizens. It exists so that people will co-exist, that they can live together without harming one another. It is created to keep the society peaceful. If the political power is misused in a way that weaker groups of people have been taken advantage, this will cause differences in opinion and later grows into a conflict, and will result to situations forcing the victims to resort to crimes. In the same way, the government should effectively able to improve the economic state of the nation, by providing job opportunities. The trust of the people is gained, when the ruler of the nation can make its citizens feel valued, protected, and secured.

Most places have zero to minimal crimes, while most crime is highly concentrated in other places. Hypothetically, if crime can be prevented at these high crime places, then it should follow that total crime can be possibly reduced. Changing the rules of the game is a key factor to making the place less dangerous to live in. Hence, determining the factors of crime rate is vital for policy makers and law enforcers to effectively design a policy change that can control or lower the crime rate.

The researchers acknowledge the fact that safety is a global concern. This is what mainly drives the need to learn and explore the crime rates of different countries. In the same light, countries' economy is affected by stability, security and safety. A peaceful neighborhood allows a nation to grow politically, socially, culturally and economically. The reason behind why the government is making large-scale measures to improve tourist attractions is because sustainable tourism is an important driver of a sustainable economic growth.

Multinationals, stakeholders and investors are continuously turning their gaze southward to the ten dynamic markets making up the Association of Southeast Asian Nations (ASEAN). The ten member states are Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam. Combined together, they form an economic powerhouse. (Thomson, Fraser et al. 2014). ASEAN governments and ASEAN itself have intentionally planted a condition in which private market can prosper and private investment can make profit (Rodolfo 2001). It was an association formed under the basis of a strong and capable private-sector role in economic advancement and its relations with the rest of the world. The core of ASEAN's strategy was gearing towards economic recovery and sustained growth. In any event, all ASEAN countries are bound to the union of their economies as a primary means of strengthening and sustaining their competitiveness in an international economy, where competition for investments and markets is becoming more and more intense. (Severino, 2001).

Due to the growing tourism of the ten dynamic countries, researchers explore to find out if the ASEAN countries' form of government have an influence on its crime rate, and whether this has a direct relationship with other factors that are commonly established in many published papers. Exploring the crime rate of ASEAN countries is interesting as it offers a snapshot on the countries' current and future economic state. In the same vein, having the ability to compare

crime levels across countries allows policy makers to determine where to intervene and improve in their law enforcements.

2.0 Design and Methods

The process used in this study is exploratory data analysis or commonly known as data mining. It is the means of eliciting previously unknown, valid and actionable information from a variety of databases and subsequently utilizing the information to make crucial business decisions. Substantially, it is aimed at uncovering new information without a previously crafted hypothesis (Sim, 2003). Further, it besets pattern recognition and statistical tools to support data analysis and to uncover the principles within the information.

The following variables are considered as indicators of the crime rate in terms of government structure and educational attainment and were derived from credible sources. The Association of Southeast Asian Nation members was also drawn, namely: Brunei Darussalam, Cambodia, Indonesia, Lao People's Democratic Republic, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam.

1. Government Type - in which supreme power is absolutely or nominally lodged with an individual, who is the head of state, often for life or until abdication. This analysis is the distinction of the form of government affect the crime rate of each countries.
2. Employment Rate - the percentage of the labor force that is employed. It is one of the indicators that economists examine to help understand the state of the economy. It is rate from 0-100 % where 100% is the highest percentage of the employment rate. Thus, the highest the employment rate the lesser the crime encountered.
3. Minimum Wage- the lowest daily or monthly remuneration that employers may legally pay to workers. Equivalently it is the price floor below which workers may not sell their

labor. It stated into dollar ($) the higher the value is the higher the minimum wage of the country.

4. Average Educational Years - refers to average of years in highest level of schooling that a person has been reached. It is stated in years the higher the numbers the higher the number of years. This analysis indicates if the more you are educated the less the crime rate is in the country.
5. Literacy rate - the percentage of people who are able to read and write. It is expressed in percentage where 100% is the highest and 0% is the lowest. Thus, it can be show that the country who had the highest percentage of literacy rate can be prevent crime.
6. Safety rate- the percentage where the condition of being protected from unlikely to cause danger, risk, or injury. It is one of the indicators of this study that the highest percentage (100%) of your safety in the country lower the percentage of the crime. In this analysis, you can able to identify which country had the highest number of crime rate.

2.0 Results and Discussion

In order to determine the crime rates of the members of the ASEAN countries, the researchers examined the variables mentioned above. Minimum wages are in the average values or rates per month. All other factors are in the higher the better format.

Country	Employment Rate (%)	Minimum Wage ($)	Average Educational Years	Literacy Rate (%)	Safety Rate (%)
Brunei	98.9	400.00	8.70	95.40	58.94
Cambodia	99.7	128.00	5.80	77.20	53.46

Indonesia	94.19	80.00	7.50	92.80	53.90
Lao	98.71	79.00	4.60	79.90	61.82
Malaysia	97.00	245.00	8.00	93.10	30.66
Myanmar	95.86	90.00	4.00	93.10	56.12
Philippines	93.60	120.00	8.90	96.30	63.11
Singapore	98.19	1000.00	10.20	95.90	82.92
Thailand	99.07	240.00	7.30	96.70	60.34
Vietnam	97.78	50.00	5.50	94.00	44.00

Table 1A: General Data

Table 1 contains data that are believed to have the most effect on a country's crime rate. The analysis of these data is divided into 3 parts;

- The analysis of a country's crime rate considering the government factors.
- The analysis of a country's crime rate considering the education factors.
- Lastly, the analysis of a country's crime rate considering both the government and education factors.

Considering the first factor, the researchers compared the safety rate of the members of ASEAN in relation to their government structure. Six types of government's forms were listed as follows: (1) Constitutional Sultanate; (2) Constitutional Monarchy; (3) Republic; (4) Communist; (5) Constitutional Monarchy, and (6) Parliament.

Country	Government Type	Safety Rate (%)
Brunei	1	58.94
Cambodia	2	53.46
Indonesia	3	53.90
Lao	4	61.82
Malaysia	5	30.66

Myanmar	6	56.12
Philippines	3	63.11
Singapore	3	82.92
Thailand	5	60.34
Vietnam	4	44.00

Table 1B: Government Types

Though a country's government type was considered earlier in this paper, it was found out that it did not have any significant effect on a country's crime rate. Indonesia, Philippines, and Singapore, all of which adapt the Republic system, have varying remarks on their Safety Rate. Considering Lao and Vietnam, which both belong to the Communist system, it can be observed that their Safety Rate is very different from each other. This holds the same truth considering Malaysia and Thailand, both adapt the Constitutional Monarchy. Given this sets of comparisons, researchers noted that a certain country's government type does not have a significant impact on the country's safety rate.

As shown from the table above, Singapore leads in four (4) out of five (5) factors, losing to the Philippines in Literacy Rate. It also shows that Singapore has a very high remarks in comparison to the rest of the ASEAN countries. Malaysia rated very poorly in its safety rate despite having relatively high remarks on other factors.

The following table shows a representation of the cluster analysis of government factors that is observed to have the most significant impact on a country's crime rate. Considering only the government factors, the countries are grouped in the following clusters:

- Cluster 1: Brunei
- Cluster 2: Cambodia, Philippines
- Cluster 3: Indonesia, Lao, Myanmar, Vietnam
- Cluster 4: Malaysia, Thailand
- Cluster 5: Singapore

Factors	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Employment Rate (%)	98.90	96.65	96.67	98.04	98.19
Minimum Wage ($)	400.00	124.00	74.75	242.50	1000.00
Safety Rate (%)	58.94	58.29	53.96	45.50	82.93

Table 2A: Cluster Analysis of Government Factors

The clustering of the ASEAN countries, considering government factors alone, are mostly determined by their Minimum Wage since their respective Employment Rates are mostly the same with a small difference margin of ± 2.25%.

As for safety rate, with the given cluster result, the researchers noted that the higher the minimum wage, the safer a country would be, with the exception of cluster 4: Malaysia, and Thailand. Through further analysis on cluster 4, the following data is obtained.

Country	Employment Rate (%)	Minimum Wage ($)	Safety Rate (%)
Malaysia	97.00	245.00	30.66
Thailand	99.07	240.00	60.34

Table 2B: Cluster 4 Government Factors

Thailand and Malaysia have a similar government structure. However, basing from the table above, Malaysia contradicts to the researchers' notion that a higher minimum wage, results to a safer country. Through additional research, researchers found out that Malaysia had an issue with their crime rates since 2010 and this rate is constantly rising over the years. It is speculated that their police force are very susceptible to bribery and corruption and at the same time, their youth is very under disciplined due to their surrounding environment influences involving crime and drugs.

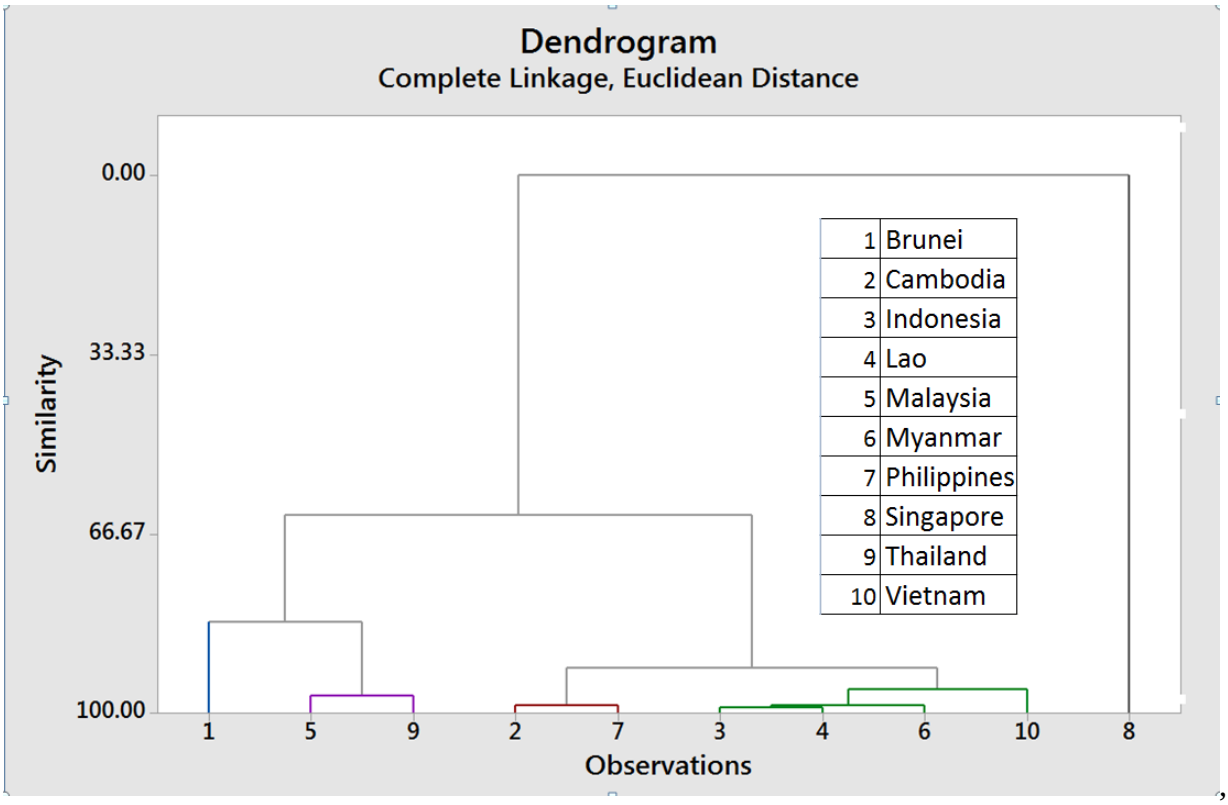

Figure 1: Dendogram of Government Factors

The figure above shows a visual representation of the country's clustering considering only the government factors. Here, it can be observed that Brunei and Singapore, by themselves, is a cluster. This means that among the ten (10) ASEAN countries, Brunei and Singapore are very different from the other eight (8) countries considering their respective data. They have been clustered by themselves due to having a low degree of similarity from the rest of other countries. This implies that both Brunei and Singapore, have scored relatively higher than the rest of the countries that they cannot be clustered together with the others countries.

Table 3 represents the cluster analysis of education factors that is observed to have the most significant impact on a country's crime rate. Considering only the government factors, the countries are grouped in the following clusters:

- Cluster 1: Brunei, Indonesia, Myanmar, Philippines, Thailand
- Cluster 2: Cambodia, Lao
- Cluster 3: Malaysia

- Cluster 4: Singapore
- Cluster 5: Vietnam

Factors	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Average Educational Years	7.28	5.20	8.00	10.20	5.50
Literacy Rate (%)	94.86	78.55	93.10	95.90	94.00
Safety Rate (%)	58.48	57.64	30.66	82.92	44.00

Table 3: Cluster Analysis of Educational Factors

The clustering of the ASEAN countries, considering only the education factors are determined by all three (3) factors: Average Educational Years, Literacy Rate, and Safety Rate. With the given clustering results, it is now established that the education factors effect on a country's crime rate is vague and unclear, if not at all non-existent. Considering data with the exception of Cluster 3: Malaysia, researchers noted that the education factors have a significant effect on a country's crime rate.

Considering only Cluster 1, Cluster 2, Cluster 4, and Cluster 5, it can be pre-concluded that a country's literacy rate, and the citizens average number of years spent in school, is semi-proportional to its safety rate. With the exception of Cluster 3: Malaysia.

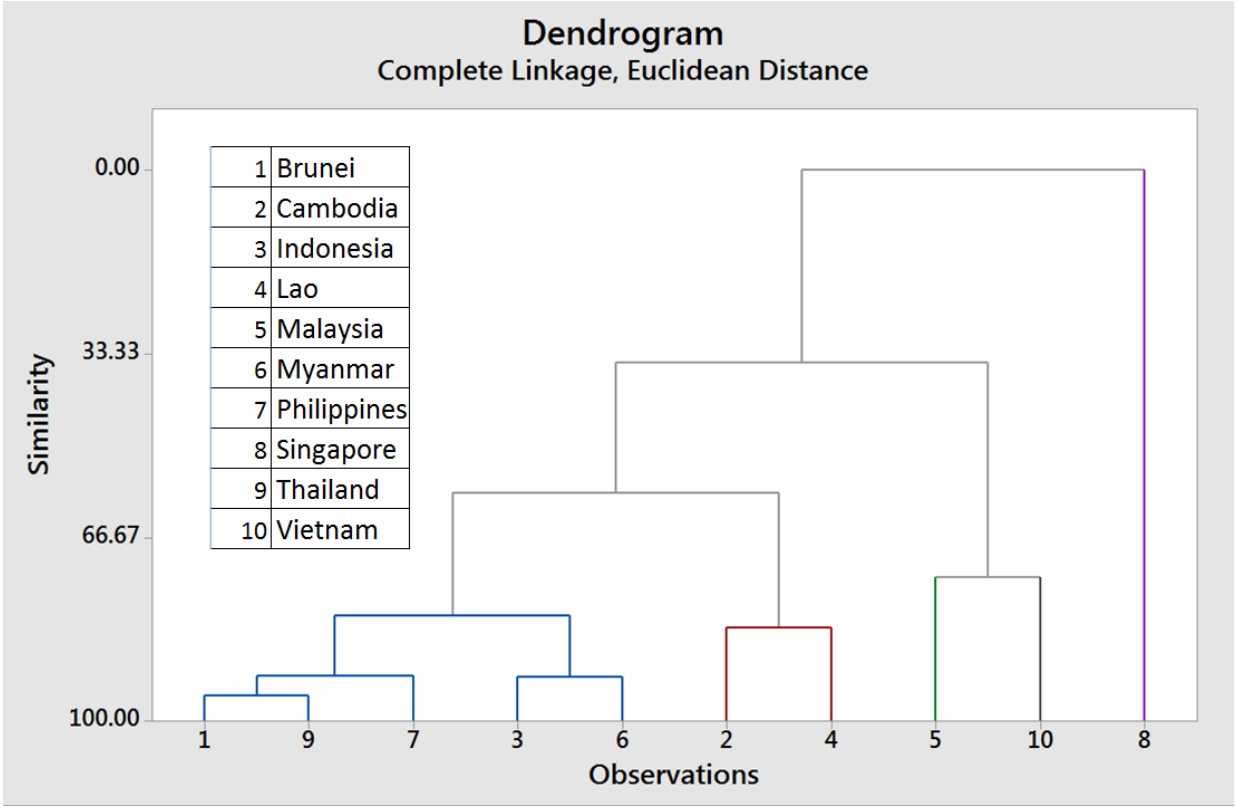

Figure 2: Dendogram of Educational Factors

Figure 2 represents the clustering of the ASEAN countries considering education factors. The Philippines belongs to Cluster 1, despite having relatively high ratings on all three (3) factors; 'Average Educational Years', 'Literacy Rate', and 'Safety Rate' scoring '8.9', '96.3', and '63.11' respectively. This is because researchers limit the number of cluster to five (5). As seen in table 5, '7' (Philippines) is actually farthest between '1' (Brunei) and '9' (Thailand), and '3' (Indonesia) and '6' (Myanmar). This means that if the number of clusters are increased from five (5) to six (6), Philippines would also be a cluster by itself; alongside Singapore, Vietnam, and Malaysia.

The table below represents the cluster analysis considering both government and education factors alongside the common factor 'safety'. The ASEAN countries are clustered as follows:

- Cluster 1: Brunei
- Cluster 2: Cambodia, Philippines

- Cluster 3: Indonesia, Lao, Myanmar, Vietnam
- Cluster 4: Malaysia, Thailand
- Cluster 5: Singapore

Note that these clusters are exclusive to this set when both factors are considered together.

Factors	Cluster 1	Cluster 2	Cluster 3	Cluster 4	Cluster 5
Employment Rate (%)	98.90	96.65	96.67	98.04	98.19
Minimum Wages ($)	400.00	124.00	74.75	242.50	1000.00
Educational Years	8.70	7.35	5.40	7.65	10.20
Literacy Rate	95.40	86.75	89.95	95.60	91.44
Safety Rate	58.94	58.29	53.96	45.50	82.92

Table 4: Cluster Analysis of all factors

The clustering of ASEAN countries considering both the government factors and education factors are very identical to the clustering of ASEAN countries considering only the government factor with a miniscule margin of difference in the degree of similarity. This difference however is ignorable since the difference only affects 2 countries, Myanmar and Lao, which belongs to the same cluster, Cluster 3, alongside Vietnam and Indonesia, all of which also belongs in “Cluster 3 of Table 2A’.

Interestingly, the country which has the highest minimum wage (Singapore), registered the highest safety rate. This means that the well-being of a society is influenced by how the government takes care of its working citizens. It is also interesting to note that the country with the highest minimum wage also has the highest number of educational years but does necessarily hold the highest literacy rate. In the table above, it is visible that if a country has a high minimum wage, it would automatically increase the average educational years. This implies that the ASEAN countries give much importance to their youth’s education. Although they may not

have the highest literacy rate in comparison to the other countries, countries like Cambodia, and Philippines value the educational years that their youth must undergo.

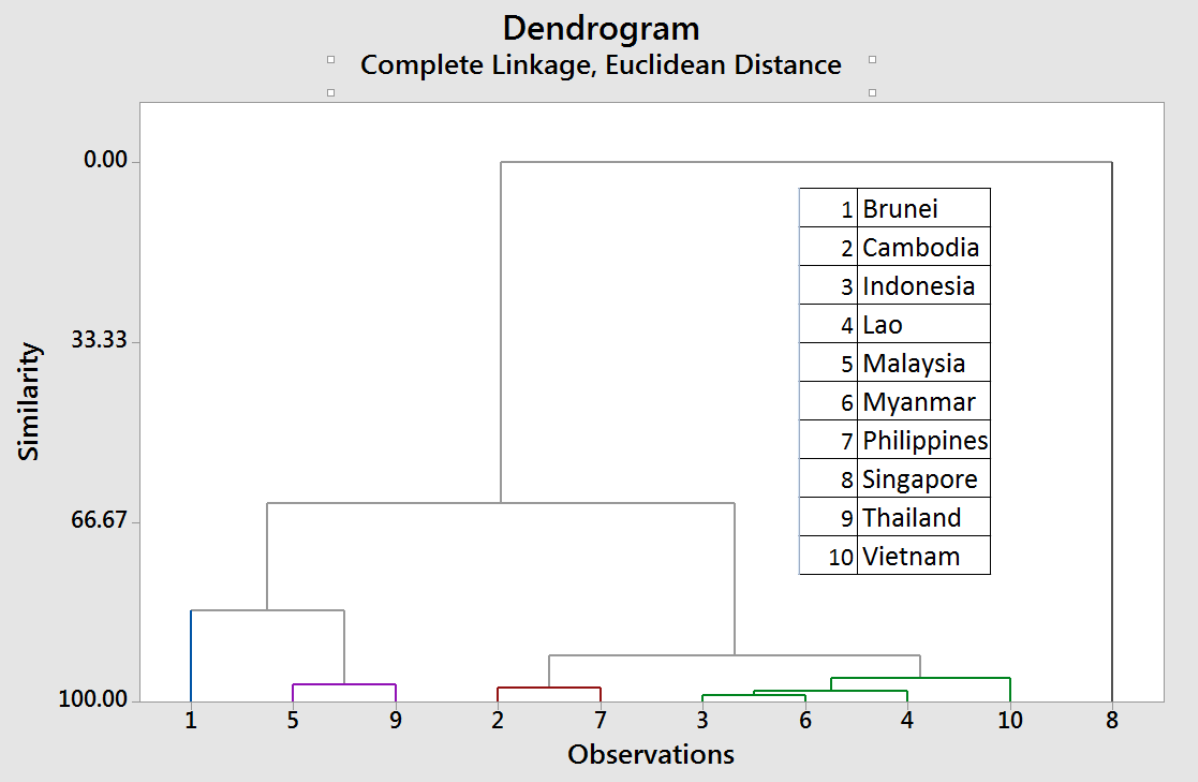

Figure 3: Dendogram of all factors

The dendogram above shows a very similar information to Table 3 with the slight difference in the degree of similarity between countries belonging in the same cluster. By simple investigation, the similarity of table 3 and table 8 would tell us that the government factors have more effect on a country's crime rate than the education factors, as opposed to what was previously thought.

Cluster analysis method reveals that the government factors are independent to the education factors in clustering ASEAN countries in terms of safety. If we consider the education factors exclusively 'Average Educational Years' and 'Literacy Rate', these factors would affect the clustering of ASEAN countries. However, the degree of its effect is vague and unclear,

especially in the case of Figure 3's Cluster 3: Malaysia since it has a very low safety rate (very high crime rate).

Furthermore, the clustering of countries in terms of its' safety rate are characterized mainly by their respective 'Minimum Wages'

4.0 Conclusion

This paper has essentially laid out the factors that influence the members of the ASEAN countries' crime rates. Out from the findings, it is concluded that the form of government a country has, does not have a direct effect in its crime rate. A safe country depends entirely on how a country is governed. The government should provide public safety and effective national defense, good and affordable schools and institutions of higher learning. The health services it provides should at least be sufficient to control the spread of infectious disease, and it must keep the poor and aged from dying in the streets. The well-being of a society is influenced by how the government takes care of its citizens.

Crime rate is also affected by a countries' minimum wage, take for example, Singapore. Singapore had the highest minimum wage and registered as having the highest safety rate as well. Having a higher minimum wage allows the citizens of the country to have an easier access to education. Further, the country with the highest minimum wage also has the highest number of educational years but does necessarily hold the highest literacy rate. Researchers believe that where there is a higher minimum wage, there is a safer place to live in.

The degree of safety in a country does not depend on the citizen's literacy or educational attainment, nor on the structure of government. Carrying out a strategic and effective policing power is independent of the structure of government a country has.

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