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**RANGSIT JOURNAL OF SOCIAL SCIENCE AND HUMANITY (RJSH)****Volume 7, Number 1, January – June 2020****Editor's Note**

After first identified at the end of last year, the pandemic of COVID-19 has spread worldwide, causing troubles to everyone everywhere. As of June 3, 2020, the number of COVID-19 infection cases has risen to more than 6.27 million globally, and more than 379,000 have been reported deceased (WHO). This pandemic has impacted the society and economy extensively in every country. Global populations are forced to change their living and working habits to a new fashion, or so-called “a new normal,” in the hope of dealing with this COVID-19 crisis. Schools, universities, and other educational institutions around the world are facing a huge challenge which requires them to adjust a lot to cope with such a disaster. While scholars of various fields seek new knowledge and new working habits that are suitable for the said “new normal,” our journal also acts as a medium for presenting new knowledge and ideas for this “new normal” or “Post-COVID” era.

This current issue presents you with six (6) papers from various disciplines. In the first paper by Pongsiri Ta-in and Thamavit Terdudomtham, the authors studied problems and impacts of the Ponzi schemes by a fraudulent transnational venture capital firm, a new type of the Ponzi schemes in Thailand that caused extreme damages to Thai investors. The authors have also proposed a protocol to enhance the efficiency of law enforcement in Thailand to prevent and solve this novel Ponzi scheme.

Second in the journal is about changes in postures of security policy and foreign policy of China. From the era of President Deng Xiaoping to the era of President Xi Jinping, Nutthathirataa Withitwinyuchon observes that the changes in policies were caused by changes in China's national identity and the regime's interests. The author discusses the conflict between China and the United States and Japan over the South China Sea and the East China Sea. This interesting reading is awaiting for the audiences to discover.

Next, we go to the article that describes the Scaffolding Method in teaching English to Thai university students. This method helps improve speaking English and Interactional Competence (IC) in EFL speaking class. Results of the study found that this teaching method is flexible and can be applied to students of different speaking-competency levels. Sutinee Pourpornpong, the author, also proposed suggestions to enhance the efficiency of the Scaffolding Method.

The fourth in the list brings us to Malaysia, where the use of social media technologies has grown increasingly. Zulkifli Zufati Izazi and Tengku Mahadi Tengku-Sepora study the reasons for the utilization of code-switching within the context of Malaysian social media users. They later conclude that ‘the simplicity of the word’ and ‘being accustomed to the habit’ are the most frequent reasons that lead the users to code-switch.

The fifth paper by the duo of Patrawadee Makmee and Buratin Khampirat presents us the study of a causal relationship model of learning outcomes model for engineering undergraduate students. The authors aimed to develop indicators and learning outcomes for the measurement tools and validate a causal relationship model of learning outcomes for those students. The study implements a survey method using five-point Likert scale questionnaires and summarizes that the learning outcomes are strongly influenced by learning style and can be utilized directly among several educational stakeholders.

Last but not least, the article by Anucha Wittayakorn-Puripunpinyoo revolves around the interesting study about the Knowledge Management (KM) for human resource development of the Agricultural Cooperative Federation of Thailand Limited (ACFT), which is found to help reduce operating costs of the ACFT itself. The author also finds that the learning dynamic and technology application are ones of the factors in significantly reducing the cost of the cooperative.

We welcome your comments and, of course, your manuscripts. Links to our manuscript submission site can be found at RJSH Online Submission and Review System: <https://rjsh.rsu.ac.th> We look forward to hearing from you and thank you in advance. We wish you good health through this pandemic crisis.

Editor-in-chief

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## Efficiency Enhancement of Law Enforcement to Prevent and Resolve a Ponzi Scheme Problem in the Transnational Venture Capital

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### Abstract

The objectives of this research are to study the problems and impact of a fraudulent transnational venture capital firm using Ponzi schemes to defraud investors in Thailand and to study the problems, obstacles, and limitations of law enforcement as well as offer recommendations to empower law enforcement agencies to deal with the problem more effectively. This qualitative study employs documentary research, non-participant observation, in-depth interviews, and a focus group. The results show that a Ponzi scheme was organized by criminals that used social media and a fraudulent transnational venture capital investment company as deception tools. In this case, the Royal Thai Police arrested 32 suspects. There were 50,000 victims, and cash flow in the company bank account was about 10,000 million Baht. The problems, obstacles, and limitations law enforcement faced were divided into the following five categories: offenders, victims, legislation, law enforcement, and informal finance. The following seven recommendations were proposed to empower law enforcement authorities to become more efficient: establishing a Ponzi scheme prevention and suppression agency, establishing a fund to prevent Ponzi schemes, informing the public about Ponzi schemes, applying foreign laws to domestic laws, increasing domestic funding, implementing rotating community savings, and establishing a special jurisdiction for economic crime cases.

**Keywords:** *Efficiency Enhancement, Law Enforcement, Ponzi Schemes, Transnational Organized Crime, Venture Capital, Fraudulent*

### 1. Background and Significance of the Problem

Since Charles Ponzi, an Italian swindler, first invented the Ponzi scheme in 1920 (Samkoses, 2017). Currently, more complicated forms of this crime are still committed throughout the world. During the past decade, Ponzi schemes have progressed from investments such as gold, oil, and consumer products to direct sales businesses (Sinloyma, 2007). In 2002, the Thai parliament promulgated the Direct Sales and Direct Marketing Act, B.E. 2545 to regulate direct sales. Currently, sellers do not need to approach buyers in person because they can sell directly to customers via websites and applications (Kruthmechai, 1999). Nowadays, Ponzi schemes in the form of direct sales are rare because buyers no longer need to meet face to face with sellers. Online Ponzi schemes have had a significant impact on society because they can operate anonymously to evade detection.

Venture capital is money that investors provide to fledgling businesses that have the potential to expand rapidly. Financing is raised from investors who are attracted to businesses that may offer high returns and rapid growth. (Tantayanon & Phanawon, 2011).

Investing in small businesses with potential is attractive to financiers because they may receive dividends and earnings from shares when the Initial Public Offering (IPO) is launched on the Stock Exchange of Thailand. However, this makes it easier for criminals to convince members of the public to join Ponzi schemes because they are aware that start-up companies are likely to offer high returns. Perpetrators of Ponzi schemes have been known to use fraudulent venture capital companies to convince people they are legitimate. Then they abscond with the money.

Venture capital companies can act as a front for Ponzi schemes because they operate similarly. Both organizations raise money, offer high returns, encourage participants to invest in other businesses, and promise dividends from investments. However, the difference between them is that legitimate venture capital companies are regulated to protect investors. The investments are authentic, and the profits from the investment are lawful. On the other hand, Ponzi schemes are illegal operations that are unregulated. They

are unaccountable, and they pay existing members using the money raised from new participants in the scheme. Eventually, the Ponzi scheme collapses when the money runs out.

Currently, the number of venture capital companies in Thailand and other countries is increasing dramatically. Moreover, the government in Thailand is unable to regulate many transnational venture capital corporations because they are registered overseas. Domestic laws require transnational venture capital firms to register with The Office of the Securities and Exchange Commission before fundraising in Thailand; however, many of these organizations still pursue domestic investment without being registered. In 2018, The Royal Thai Police TACTICS (Thailand's Action Taskforce for Information Technology Crime Suppression) reported that 32 suspects had been arrested for defrauding 50,000 people who had joined a transnational Ponzi scheme. The offenders' bank accounts held about 10,000 million baht. (Thailand's Action Taskforce for Information Technology Crime Suppression [TACTICS], 2018) This case demonstrates that Ponzi schemes in the guise of transnational venture capital businesses can cause many members of the public to lose considerable amounts of money.

Government agencies cannot control transnational venture capital firms because the law relating to the Ponzi scheme prevention and suppression in Thailand, the Emergency Decree on Loans of Money Amounting to Public Cheating and Fraud, B.E. 2527, is outdated. Moreover, none of the Thai government agencies are solely responsible for investigating Ponzi schemes and transnational organized crime. Many law enforcement authorities' duties overlap, resulting in no specific agency being solely responsible for the prevention and suppression of transnational Ponzi schemes. A report from TACTICS stated that the suspects were arrested only after members of the public had been defrauded.

Therefore, this research focuses on recommendations that increase the efficiency of law enforcement agencies to enable them to prevent and resolve the problem of fraudulent transnational venture capital firms using Ponzi schemes to defraud investors in Thailand. White-collar crimes, justice administration, subordinate acts, legislation, work mechanisms, and the authority of related justice agencies were studied to obtain the recommendations.

It is hoped that the results of this research will empower the government to control and investigate fraudulent transnational venture capital firms more rigorously and prevent potential losses to investors in Thailand by upgrading and standardizing the justice process.

## **2. Research Objective**

The objectives of the study are (1) to study the problems and impact of a fraudulent transnational venture capital firms using a Ponzi scheme to defraud investors in Thailand. (2) To study law enforcement problems, obstacles, and limitations that could prevent and suppress fraudulent transnational venture capital firms using Ponzi schemes to defraud investors in Thailand. And (3) To offer recommendations that will empower law enforcement agencies to efficiently prevent and suppress fraudulent transnational venture capital firms using Ponzi schemes to defraud investors in Thailand.

## **3. Literature review**

### **3.1 White – Collar Crime**

"White – Collar Crime" is a term coined from the working environment in the United States by considering the dress code of the working group that has a good job position, such as the company employees or civil servant. This is usually dressed in a white shirt so that it's causing people to define this type of group as "White-collar workers" (Treadwell, 2006). It is different to the group of workers which is a group that has a lower duty. These groups of workers in the United States tend to blue work shirts so that it's causing people defines this type of group as "Blue-collar Workers" (Parietti, 2019)

"White-Collar Crime" originated from the American sociologist named "Edwin H. Sutherland" in the years 1930 - 1940. At that time, most criminologists thought that crimes were caused by poverty or financial disadvantage, but Sutherland disagreed with the above statement. Sutherland sees that people with a high social status which has been respected and admired by the general public able to commit violent crimes by relying on their career opportunities, economic status and business interests (Benson, 2009)

Sutherland's ideas revolutionized the idea of people who believe that "all crimes" are caused by people in a poor or unworthy society, to be the belief that "crime" can also occur by a person of high status. So, it can consider that the definition of "White-Collar Crime" created by Sutherland is to create the new theory in the theoretical view of Criminology in Modern Society (Hagan, 2008).

### **3.2 Ponzi scheme**

"Ponzi scheme" is a fraud to invest or join a business that does not require a lot of investment, but the rate of return or benefit that the promoters will receive is very high. (Boonyopas, 2014) The founders of the Ponzi scheme will ask investors to invest money by promising to invest money in assets that are likely to make high profits and have low or no risk at all. Which the most of the Ponzi scheme aims to bring the money of new investors to pay to the old investors, causing those who intend to invest in legal property to make mistakes in investing in the Ponzi scheme instead of investing in a legitimate business and earning income from a real business. (United States Securities and Exchange Commission, 2018)

The key characteristics of Ponzi scheme that have occurred in the past and present are seven similar things that can divide as follows: (1) High compensation and low risk or no risk at all; (2) There is too much compensation; (3) Is an investment that has not been registered with a government agency that supervises; (4) The investment solicitor does not have a license to sell or recommend investment; (5) Businesses that are classified as confidential and/or complex; (6) There is a problem with requesting to inspect investment documents; (7) Having difficulty getting the money invested back. (U.S. Securities and Exchange Commission, 2018)

### **3.3 Money Laundering**

"Money Laundering" is a term known to more than 70 years in American Criminal Organizations. The person who invented the term was "Meyer Lansky" which has principles regarding the unlawful collection of funds come through the commercial process in order to become legitimate money (Ubride, 2003 as cited in Siripetch, 2011). Nowadays, many individuals or agencies have defined the definition of "Money Laundering", such as the International Criminal Police Organization: INTERPOL has also defined the definition of "Money Laundering" means "Concealing or disguising the identity of illegally obtained proceeds so that they appear to have originated from legitimate sources" (International Criminal Police Organization, 2019) and The Financial Action Task Force (FATF) has defined the definition of "Money Laundering" means " the processing of these criminal proceeds to disguise their illegal origin. This process is of critical importance, as it enables the criminal to enjoy these profits without jeopardising their source" (Financial Action Task Force, 2019).

### **3.4 Transnational Organized Crime**

The United Nations Convention against Transnational Organized Crime 2000 in Palermo, Italy had defined the definition of "Transnational Organized Crime" means "A structured group of three or more persons, existing for a period of time and acting in concert with the aim of committing one or more serious crimes or offences established in accordance with this Convention, in order to obtain, directly or indirectly, a financial or other material benefit" (United Nations, 2001) and also defined the definition of "An offence is transnational in nature" means "An offence is transnational in nature if: (a) It is committed in more than one State; (b) It is committed in one State but a substantial part of its preparation, planning, direction or control takes place in another State; (c) It is committed in one State but involves an organized criminal group that engages in criminal activities in more than one State; or (d) It is committed in one State but has substantial effects in another State" (United Nations, 2001)

### **3.5 The Regulatory Agency and Suppression of Offense in the Venture Capital Business**

The Regulatory Agency and Suppression of Offense in the Venture Capital Business in Thailand, in accordance with the Emergency Decree on Loans of Money Amounting to Public Cheating and Fraud B.E. 2527, the Anti-Money Laundering Act, B.E. 2542, the Prevention and Suppression of Participation in Transnational Organised Crime Act, B.E. 2556 and other related laws, namely (1) The Office of the Securities and Exchange Commission; (2) the Economic Crime Suppression Division, Royal Thai Police;

(3) the Transnational Criminal and Illegal Smuggling Suppression Center, Royal Thai Police; (4) Thailand's Action Taskforce for Information Technology Crime Suppression (TACTICS), Royal Thai Police; (5) the Department of Special Investigation (DSI); (6) the Anti-Money Laundering Office (AMLO); (7) the Informal Finance Notification Center, the Fiscal Policy Office, the Ministry of Finance; (8) the Office of the Attorney General. And there have also a Non-Government Organization (NGOs) that helps to report clues about the current Ponzi scheme problems and helping the victims in litigation and tracking property back is the Stop Money Game Confederation (SMGC).

### 3.6 Related Research

Many researchers have investigated Ponzi schemes in Thailand. Sinloyma (2007) considered the patterns and methods of direct sales Ponzi schemes. Rattanapirom (2010) examined government policies to control direct sales Ponzi schemes. Akkaraviboon (2009) investigated legislation to protect consumers from direct sales Ponzi schemes. Lobyam (2006) explored measures to promote and control venture capital. Sakkosol (2001) studied money laundering by comparing Thai laws to The United Nations Convention against Transnational Organized Crime. Also, Mookjang (2002) reviewed measures to prevent and suppress transnational crimes emphasizing on money laundering.

However, research on improving the efficiency of law enforcement agencies to prevent the problem of fraudulent transnational venture capital firms using Ponzi schemes to defraud investors in Thailand has not been undertaken. Therefore, the relationships between Ponzi schemes, transnational organized crime, fraudulent venture capital firms, and money laundering were investigated to propose recommendations to law enforcement agencies.

## 4. Research Methodology

This qualitative research used the following four research methods.

1) Documentary research was conducted by reviewing the literature and relevant research published in print media or recorded as electronic documents to survey the current state of the problem.

2) Non-Participant observation was applied to gather data. The researcher decided to collect data using this method (Non-Participant Observation) by investing in the venture capital business in order to be able to find information that will be used in the research. The researchers used methods to monitor the operation of the Ponzi scheme outside by not participating in or appearing in the venture capital business. So, the researcher took the time to study and collect data starting from January 2018 and ending in December 2018, including a period of no-one observation for approximately 1 year.

3) In-depth interviews were used to obtain answers to the research questions. The informants were government officers from agencies responsible for law enforcement, private agencies, and experts in economic criminal law. Ten informants from (1) The Office of the Securities and Exchange Commission; (2) the Economic Crime Suppression Division, Royal Thai Police; (3) the Transnational Criminal and Illegal Smuggling Suppression Center, Royal Thai Police; (4) Thailand's Action Taskforce for Information Technology Crime Suppression (TACTICS), Royal Thai Police; (5) the Department of Special Investigation (DSI); (6) the Anti-Money Laundering Office (AMLO); (7) the Informal Finance Call Center, the Fiscal Policy Office, the Ministry of Finance; (8) the Office of the Attorney General; (9) the Stop Money Game Confederation (NGOs); and (10) experts on economic criminal law were interviewed.

4) A focus group was used to gather the opinions of a sample group. The informants were government officers from agencies responsible for law enforcement, private agencies, and experts in economic criminal law. Five informants from (1) the Department of Special Investigation (DSI); (2) the Anti-Money Laundering Office (AMLO); (3) the Experts on Economic Criminal Law; (4) the Professor of Criminology Studies and (5) the Ph.D. Candidate on Criminology and Justice Administration Studies were discussed.

On this research, the researcher has requested approval for research ethics certification from "Rangsit University - Ethical Research Board (RSU - ERB)" on December 7, 2018 and approved by the Rangsit University Human Ethics Committee on February 20, 2019, according to the research certificate (Certificate Approval No. COA. No. RSUERB2019-003).

## 5. Results and Discussions

### 5.1 The current situation and impact of fraudulent transnational venture capital firms using Ponzi schemes operating in Thailand

The qualitative data obtained from documentary research, non-participant observations, in-depth interviews, and the focus group showed that Ponzi schemes were a severe problem that had a significant impact on members of the public. Fraudulent venture capital firms and duplicitous cryptocurrency operations defrauded many people. Moreover, the pattern of crime changed to reflect advances in technology. The offenders used social media such as Facebook and Line to convince victims to become members. Government agencies had to investigate thoroughly to determine whether the businesses were authentic or not. Acquiring evidence was also problematic because most of the data were stored electronically, which made it challenging to identify the arrest the suspects quickly.

Since 2014, the Fiscal Policy Office website ([www.fpo.go.th](http://www.fpo.go.th)) has received many complaints about Ponzi schemes defrauding members. However, the only action government agencies took, was to warn members of the public through their website. In 2018, TACTICS arrested suspects because members of the public had lost significant amounts of money, and other government agencies had not taken any action. This transnational organized crime was committed by offenders based in Malaysia who were Chinese-Malaysian, Chinese, and Thai. A variety of offenses were committed, such as running a Ponzi scheme, transnational organized crime, and money laundering. There is no record of fraudulent transnational venture capital firms using Ponzi schemes to defraud investors in Thailand before 2018.

First, a fraudulent venture capital company set up the Ponzi scheme. Later, it announced a joint venture with another company that had registered as a Pink Sheet Stock on the New York Stock Exchange. Then, the company manipulated the market by inflating the stock price from one dollar to four dollars. Next, it told members they would earn considerable profits after the company was registered on stock exchanges such as the NASDAQ and the NYSE. This caused many members of the public to become attracted to the Ponzi scheme. Eventually, it was longer viable because an investigation by the U.S. Securities and Exchange Commission detected abnormalities.

After that, the venture capital company reinvented the Ponzi scheme by convincing the public that it invested in forex brokerages, gold, jewelry, real estate, hotels, sports clubs, car racing, computer manufacturing, and twenty other businesses located in Malaysia, China, and Thailand. These were fake business that did not make any profit. The fraudulent company used a loophole in, Section 4 of the Emergency Decree on Loans of Money Amounting to Public Cheating and Fraud, B.E. 2527, which states "...with the knowledge of the person or the knowledge that the person should know that the person is unable to perform any legal business that provides sufficient benefits to repay at that rate."

The fraudulent company conned the public by claiming that it owned and invested in genuine businesses that were profitable and accountable. Potential members were invited to visit the businesses which were based mostly in Malaysia, where they were conned into thinking that the fake businesses were profitable. This gave them the confidence to join and persuade other people to do so. Besides, government officers who investigated the criminal activity hesitated to act because they were unsure whether the transnational venture capital company was genuine or not.

The fraudulent company persuaded members of the public to part with their money using social media such as Facebook, Twitter, and Line. Only members were able to access the investment strategies, and interested investors were invited to contact a "venture capitalist" (VC). Most of these so-called venture capitalists were members who got commission by inviting people to join using their sign-up codes. When new members signed-up, they increased the size of the Ponzi scheme by inviting others to join them using social media. They were trained to become venture capitalists who were incentivized by assurances of a luxurious lifestyle that included traveling abroad, and expensive cars. Effective marketing that promised financial independence attracted people to put their money into the scheme.

Some of these so-called venture capitalists targeted hospitals and schools in rural regions, where they promoted the Ponzi scheme to teachers, doctors, nurses, and government officers who had assets.

The victims were members of the public and many government officers who were targeted because they had access to loans from commercial banks or savings and credit cooperatives. There was also abuse of

power by superior officers; the superior officers became members of the Ponzi scheme then insisted that their subordinates join using their sign-up codes. Salary evaluations were used to threaten subordinates into joining. If they did not join, their salaries would stay the same. They were afraid and had little choice but to join the Ponzi scheme.

It was challenging to gather evidence because the Ponzi scheme was a transnational organized crime, which required coordination with foreign agencies. Finally, TACTICS arrested 32 suspects; however, the alleged founder of the Ponzi scheme was not captured because he escaped to Malaysia. The Thai government attempted to coordinate with Malaysia via the Royal Thai Embassy to get the suspect extradited to Thailand. However, the extradition request was not granted because it was related to transnational organized crime. Nevertheless, the Thai government is continuing to cooperate with the Malaysian government on this case in the hope that it can be resolved soon.

The result of the study is conforming to the study of theory and literature related to the Ponzi scheme. This Ponzi scheme in the venture capital business is a new type of Ponzi scheme that has never happened before in Thailand. There is only research related to Ponzi scheme in direct selling business or other businesses such as oil, currency exchange or other products etc. The transnational venture capital business is a new business used by criminal as a tool for Ponzi scheme. The characteristics of the Ponzi scheme in the transnational venture capital business correspond to the seven key characteristics of business, which are (1) High compensation and low risk or no risk at all; (2) There is too much compensation; (3) Is an investment that has not been registered with a government agency that supervises; (4) The investment solicitor does not have a license to sell or recommend investment; (5) Businesses that are classified as confidential and/or complex; (6) There is a problem with requesting to inspect investment documents; (7) Having difficulty getting the money invested back. (United States Securities and Exchange Commission, 2018)

## **5.2 The problems, obstacles, and limitations that law enforcement face when attempting to prevent and resolve the problem of a fraudulent transnational venture capital firm**

Qualitative documentary research, non-participant observations, in-depth interviews, and a focus group revealed the following aspects.

### **1) Problems, obstacles, and limitations regarding the offenders**

The criminals were not afraid of Thai laws and regulations. They exploited a loophole in Section 4 of the Emergency Decree on Loans of Money Amounting to Public Cheating and Fraud, B.E. 2527 act, which allowed them to avoid investigation. They had identified loopholes in the law before committing the crime. The law states that "...the propagation or the presentation to people or an action for a group of ten people at the minimum..." The offenders often posted photographs of money, expensive cars, and holidays abroad to entice investors. However, they did not post the returns of the Ponzi scheme in the media, which allowed them to avoid the law on advertising.

The crime was orchestrated by intelligent criminals who were well versed in the law. Arresting the suspects was complicated because they were abroad and not under the jurisdiction of Thai law enforcement. The suspects carefully evaded arrest by escaping abroad. They only returned to Thailand when interest in their activities had waned. Then, they changed their names to avoid detection by law enforcement agencies and used their expertise to reinvent the Ponzi scheme.

The study is conforming to the theoretical and literary study of the white-collar crime. The Ponzi scheme has considered one type of the white collar crime. The offenders are most often knowledgeable, respected and have high social status, reliable or have a high position by concealing or deceiving in order to obtain money or property. The White-collar criminals usually have three special characteristics: Firstly, the method of access that is not illegal; The form of Ponzi scheme offenses is often accessed by greeting, persuasion among friends or even the voluntary access of victims in which the victim did not know that he was deceived. Allowing the offender to use illegal channels to approach the victim and deceive into investing in a Ponzi scheme. Secondly, the offender separates the victim and does not directly collide with the victim; In the case of Ponzi scheme, High-level offenders or founders of the Ponzi scheme will have a plan about the Ponzi scheme system including finding members to join the team to persuade various people

to invest in Ponzi scheme. The high level offenders do not have to clash or get close to the victim. They just come out and present at some meetings or seminars. Even investment contacts may use social media channels to contact investors, which does not need to have meetings with investors in any way. And thirdly, when considering the superficial actions of the offender, it seems a legal action; the form of Ponzi scheme is consistent with white-collar crime, there are persuading investors to invest in various businesses which is a business invented, such as venture capital business, by staging the establishment of various companies to persuade and build investor confidence. When investors see that there is a real business and registered legally by foreign laws, therefore invest their money to the business. When they considered superficial, it is a lawful act. But actually, it is an act to conceal the offense of Ponzi scheme. So, it is not a legal act in any way.

## **2) Problems, obstacles, and limitations regarding the victims**

The results showed that the victims of the Ponzi scheme could be classified into the following three types: 1) victims who did not realize that they had joined a Ponzi scheme, 2) victims who realized that they had joined a Ponzi scheme and 3) victims who were offenders.

### **(a) Victims who did not realize that they had joined the Ponzi scheme**

Most victims were the members of the public who had minimal knowledge of investment strategies and did not realize that they had become participants in the Ponzi scheme. They were poor, living hand to mouth, and did not have much capital. When they were told about the Ponzi scheme by others who claimed that they would make a substantial profit from investing, they thought it was a worthwhile investment in comparison to their regular income. In most cases, they used money that was borrowed from loan sharks. Some victims mortgaged land, and others pawned their valuables in the hope of a better life. Economic problems meant they had little choice but to invest in the Ponzi scheme. These victims' lack of knowledge of Ponzi schemes and investment strategies were a significant problem and obstacle for law enforcement agencies.

### **(b) Victims who realized that they had invested in the Ponzi scheme**

Some of the victims knew that they were members of the Ponzi scheme. However, they were willing to join because they thought they would receive profits before the scheme collapsed. They were financially literate investors who assumed that they could earn 10-20% or more in profits because they got involved at the initial stage of the Ponzi scheme. They planned to withdraw before the collapse; some were successful while others eventually became victims.

### **(c) Victims who were offenders**

These victims were aware of the Ponzi scheme. They persuaded others to become members to earn commissions. However, they were not convicted because they were able to deny that they knew about the Ponzi scheme. This was a problem and obstacle for law enforcement agencies because it was difficult to prove the victims had criminal intent.

Other types of offenders joined the Ponzi scheme because they were misled into believing that it was a legitimate business. Even though they did not know their uplink, they transferred money to them as they foresaw benefits rather than the risks. They were only interested in profits and returns. Most of these victims neglected to do any research on the business they were investing in.

The result of the study is conforming to the study of theory and literature of Victimology. The victims or investors are often people who do not understand financial knowledge and do not have good knowledge or immunity regarding the Ponzi scheme problems, Therefore they led to misleading and ultimately investing money in Ponzi scheme. In the case of victims who know that they have invested in a Ponzi scheme; it is a newly discovered study result because there is no information from any research sources to explain the characteristics of the victims who know they have invested in a Ponzi scheme but still invested money and believed that they will be able to withdraw investment funds in time. The victim is considered that the voluntary victims; it may require further research into the causes and factors behind the victims' decision to participate in investments, in order to be able to analyze the patterns of such victims and

find ways to prevent those crimes. Including, the third type is the Victims who were offenders which is conforming to the concept of white collar crime; when the victims become criminals, the victims will commit white-collar crimes by relying on one's own trust in deception, concealing, concealing of internal intent and deceiving others to lose property or money, so that they may benefit from the deception. It is the duty of government officials to continue to distinguish the true victims from the victims of criminals.

### **3) Problems, obstacles, and limitations regarding the law**

The informants knew the law pertaining to fraudulent transnational venture capital firms using Ponzi schemes to defraud investors in Thailand. In particular, the core legislation, the Emergency Decree on Loans of Money Amounting to Public Cheating and Fraud, B.E. 2527 and the Emergency Decree on Loans Amounting to Public Cheating and Fraud, B.E. 2527 Amendment Act, (Issue 2) B.E. 2545, were inclusive and could be used to arrest suspects in Thailand. However, some informants stated that the core legislation required a review and could be retitled as the "Ponzi Scheme Protection and Suppression Act" and that prevention and suppression officers should be authorized to investigate all aspects relating to Ponzi schemes in Thailand, with powers similar to Anti-Money Laundering Office. Moreover, they stated that any revisions of the law should include cryptocurrency crime, be up-to-date, and empower the state to tackle the problem of Ponzi schemes in Thailand in its entirety.

The result of the study is conforming to the study of theory and literature of the legal issues related to preventing and resolving Ponzi scheme problems in the transnational venture capital business. The Emergency Decree on Loan Fraudulent People, 2527 B.E. has been enforced since 2527 B.E due to the case of "Mae Cha-Moi's Ponzi scheme" which is a trick to invest in an oil truck business. But nowadays there is development of technology. There are social media channels for communication and adopting new business models such as venture capital businesses or trading cryptocurrencies into the country. The current law may not be able to catch up with changes in technology and the development of such businesses. Including past laws, it cannot prevent and solve problems in a timely manner. It usually only enforced when a Ponzi scheme problem occurs. It is difficult to arrest, including tracking the property of the offender. In addition, the current law does not have any measures. That is used to facilitate the investigation, arrest or follow-up of criminals. And there are no criminal procedure measures that will benefit officials in the proceedings; such as Conspiracy Measures, Increasing Penalties and Collecting Daily Fines Measure or Warning the Public Measure etc. After reviewing the relevant theories and literature, it is evident that the current law is still ineffective and cannot prevent and resolve the Ponzi scheme problems that occur in Thailand including no new legal measures especially legal measures for economic crime to help effectively enforce the law.

### **4) Problems, obstacles, and limitations regarding law enforcement**

The Emergency Decree on Loans of Money Amounting to Public Cheating and Fraud, B.E. 2527 states that the Minister of Finance and the Minister of the Interior are responsible for enforcing the Act. The Fiscal Policy Office and the Ministry of Finance are both responsible for law enforcement. However, there were problems with those agencies. The Fiscal Policy Office, which had overall responsibility for the act, was inefficient. It was responsible for delegating aspects of the crime to other agencies such as the Royal Thai Police, the Department of Special Investigation, and the Anti-Money Laundering Office. However, a lack of cooperation between the agencies, and an inability to advise the agencies were significant problems. Furthermore, some informants stated that the victims did not know whom to contact about the Ponzi scheme because many agencies shared responsibilities. The Fiscal Policy Office was understaffed, so other agencies were needed to arrest the suspects, resulting in justice being delayed.

Apart from the law enforcement authorities, the officers from the authorized agencies were also a problem and obstacle. The Ponzi scheme was complicated, which required the officers to know economic law. This was in addition to their other duties such as investigating and arresting the suspects. The officers lack of knowledge and skills in dealing with economic crimes, especially transnational Ponzi schemes, was a significant problem.

Besides, there were no databases or crime patterns for the officers to consult, which also delayed the investigation.

Another problem that the informants mentioned was the corruption and misconduct of the government officers who were responsible for administrating justice. Some offenders used profits from the Ponzi scheme to bribe these unethical officers during the course of justice to avoid being named as defendants.

The study is conforming to the theoretical and literary study of the white-collar crime. The proving of white-collar crime is a difficult because the offender often has a strong legal team. The legal team will use the effort to control and access the information of the prosecutor. The strategy will enable the offender to win the case in court. Causing the seizure and fighting the crime of a white collar crime to waste a lot of budget. Government officials have to spend a lot of time dealing with the problem, so the justice system is very important in dealing with the white collar crime. The three factors related to the justice process are: Firstly, having special experts in white-collar crimes. Secondly, having strong law enforcement powers and thirdly, greater discretion and flexibility in operations. At present, the judicial process on preventing and solving Ponzi scheme problems still lacks these factors. There is no agency that is directly responsible for preventing and resolving Ponzi scheme problems. As well as the lack of special experts in dealing with the Ponzi scheme problem, therefore the Ponzi scheme problem is still a major problem in Thailand nowadays.

#### **5) Problems, obstacles, and limitations regarding informal finance**

Some researchers have considered Ponzi schemes as an informal type of financing, which is neither under the governance of the Bank of Thailand (BOT) or the Ministry of Finance. The offenders used this information to con the victims into parting with their money. When the victims' assets were diverted to the Ponzi scheme, they were no longer part of the legitimate economy. This impacted on the entire economic system because savings that were deposited in commercial banks that financed illegitimate businesses did not benefit the country's economy. Informal finance and Ponzi schemes should be investigated concurrently to solve this problem.

The study result is a new study which has not yet been researched. But in the operation of preventing and solving Ponzi scheme problems in the transnational venture capital business, it is consistent with the mission of the Informal Financial Notification Center, Fiscal Policy Office which saw the problem of informal money especially the Ponzi scheme problem. The Informal Financial Notification Center, Fiscal Policy Office considers that the Ponzi scheme problem is a problem with informal finance by raising money from the public and offering high benefits. And the entrepreneurs are unable to explain which funds to invest in which business. The fundraising is risky to be a Ponzi scheme and cannot be restored causing damage to the economy. The Fiscal Policy Office is aware of the Ponzi scheme problems. Therefore the government has established an Informal Financial Notification Center and the Fiscal Policy Office also has the duty to act in accordance with the Emergency Decree on Loans of Money Amounting to Public Cheating and Fraud, B.E. 2527

### **5.3 Recommendations for improving the efficiency of law enforcement to prevent the problem of fraudulent transnational venture capital firms using Ponzi schemes to defraud investors**

Qualitative documentary research, non-participant observations, in-depth interviews, and a focus group revealed the following aspects.

#### **1) Establishment of a Ponzi scheme prevention and suppression agency**

The government should form a new agency to prevent and investigate Ponzi schemes in Thailand. It should have an office, officers, a budget, and the legal authority to act independently. The new agency would eliminate the need for members of the public to report to the Royal Thai Police and other agencies because it will be solely responsible for answering enquires and investigating complaints relating to Ponzi schemes.

The agency should also educate the public about Ponzi schemes, and encourage them to become more financially literate. Moreover, Ponzi schemes should be suppressed systematically. Skilled and capable officers should investigate, arrest, and prosecute suspects. The agency should also research preventive measures to suppress Ponzi schemes and impart their expertise to other government officers through training. This is in contrast to the Anti-Money Laundering Office, which has had a more passive

role. Moreover, the new agency should report directly to the Prime Minister's office to allow it to be independent and reduce bureaucracy.

### **2) Establishment of a Ponzi scheme prevention fund**

The government should establish a Ponzi scheme prevention fund to provide financial support to agencies that will explain the crime to members of the public so that they will not be defrauded. The fund should also support the training of government officers and research on preventive measures.

Initially, the funding should come from annual government expenditure. Then, assets confiscated from the offenders such as revenue from selling seized properties should be used to support the fund.

After the Ponzi scheme prevention fund is successfully established, the government could expand the fund to include remedies for victims of the crime. Using seized assets, the Ponzi Scheme Prevention and Remedy Fund could compensate victims who had lost money. Victims would be able to borrow from the fund at low-interest rates, similarly to how the Student Loan Fund operates, by repaying in monthly or yearly installments. The loans could be used as capital to rebuild their lives without the need to use informal financing.

### **3) Public relations and promoting financial literacy**

The government should improve financial literacy in the country and educate the public about Ponzi schemes by explaining how they work. Firstly, the government could increase awareness by explaining the various types of Ponzi scheme, how to prevent Ponzi schemes, how to contact the relevant government agency using a hotline, the legal process, and the procedure to reclaim property that is seized after judgment.

Secondly, improving financial literacy is vital because it will help investors to differentiate Ponzi schemes from genuine investment opportunities. Members of the public need to have enough knowledge to assess risks before they make investments. This will help to minimize damage from Ponzi schemes.

### **4) International cooperation to prevent transnational organized crime**

The government should promote international cooperation by signing memorandums and making agreements with other countries to prevent and resolve the Ponzi scheme problem. International laws should be applied because these crimes are often committed abroad. The government should promote international cooperation at the highest level. The Prime Minister, the cabinet, and representatives from domestic and foreign agencies should work together to investigate transnational organized crime. Furthermore, the government should review laws on international cooperation to ensure they are up-to-date and appropriate to deal with crime in the modern world.

### **5) Applying international law**

The following foreign laws should be enacted.

#### **(a) Increasing penalties and collecting daily fines**

Offenders should be fined from the day the crime was committed until they are convicted. However, an increase in prison terms and fines should be enacted by the "prohibition of penalty mitigation or suspension of the prisoner in Ponzi scheme cases" so that criminals will be penalized according to the judgment of the court. Increasing the penalties may deter others from committing this crime.

#### **(b) Auditing company accounts**

The government agency should have the authority to audit the accounts of businesses under suspicion. A company's financial statement shows the income, expenses, profit, and loss. In the case of Ponzi schemes, fraudulent companies promise high rates of return to participants. An audit of the companies' accounts will help officers to determine whether the company is genuine or not. Further legislation is required to ensure that those who submit fake financial statements will be treated in the same way as other offenders who have committed this crime.

**(c) Warning the public**

Offenders must reveal how the Ponzi scheme works. Methods of persuasion and deception, such as the benefit calculation chart should be explained to the public so that they can avoid investments in similar businesses.

**(d) Measures to prevent reoffending**

Offenders should be prohibited from working in finance, investment, and fundraising for ten years to prevent them from re-offending.

**(e) Civil forfeiture**

The government should have the authority to seize assets that are considered to be proceeds of crime. This should also apply to assets that were not obtained directly from the Ponzi scheme. These seized assets should be used to compensate the victims.

**(f) Conspiracy measure**

Accomplices who conspire to commit the offense should be prosecuted to prevent the Ponzi scheme from claiming more victims.

**(g) Intending to offend**

Similar to the conspiracy measure, the penalties for offenders who intend to commit this crime should be the same as the penalties for those that have already offended due to the serious nature of this crime.

**(h) Plea bargaining**

Defendants should be able to plea bargain if the information they can provide leads to the conviction of other offenders. Prosecutors should be able to offer the defendant a plea deal in exchange for leniency from the court.

**(i) Additional evidence-gathering methods**

Defendants should be encouraged to impart evidence that reveals information that is unknown by investigators. For example, the courts should give evidence relating to assets acquired special consideration. This will facilitate the prosecution because there will be more supporting evidence. Currently, a significant problem is that there is insufficient evidence to indict the ring leaders.

**(j) Travel and financial bans for foreigners**

Persons under suspicion or who have previously been convicted of Ponzi scheme offenses should be banned from Thailand to prevent them from committing the crime. Moreover, they should be banned from performing financial transactions in Thailand, such as opening bank accounts. This will result in a reduction in transnational organized crime.

**(k) Bail prohibition for defendants**

Currently, most defendants are released on bail using assets obtained from the Ponzi scheme. They have the right to bail, and often they use their ill-gotten gains as collateral. Moreover, sometimes, they abscond while on bail and live abroad on wealth acquired from the crime. This allows them to re-offend. The government should prohibit bail for the defendants to prevent them from escaping and re-offending. This may act as a deterrent to potential criminals as they realize that the only way of avoiding jail time is to prove their innocence.

**(l) Increasing penalties for government officials who aid and abet defendants**

This measure should be based on existing legislation regarding the prevention and suppression of corruption and misconduct. The penalty for corrupt government officers who assist defendants by breaking the law should be increased. This will emphasize the importance of the crime and deter corruption.

### **6) Increasing domestic sources of funding and the development of rotating community savings**

The government should provide more sources of funding for people to access through the legitimate financial system. This will reduce borrowing from informal finance sources, such as loan sharks and limit the damages of Ponzi schemes.

In addition, the government should support fundraising under the supervision of agencies, such as the BOT, the Ministry of Finance, and the SEC. Rotating Community Savings could offer an alternative to these options. The government could allow smaller amounts of money to be raised by the private sector, such as fundraising to support OTOP (One Tambon One Product) projects or other enterprising community ventures. If members of the public know that the government supports rotating savings and alternative fundraising, they may invest in legitimate businesses rather than Ponzi schemes.

### **7) Forming a special jurisdiction for economic crime cases**

A special jurisdiction for economic crime cases should be established to deal with economic crimes because they are more sophisticated than other types of crime which do not require knowledge of economics, finance, and investing. Criminals who are familiar with equities, bonds, gold, currency exchanges, cryptocurrency, and block-chain technology can use their knowledge to escape prosecution. The establishment of the special jurisdiction for economic crime cases should aim to increase the number of judges who know how technology is used in financial practices. The government should also consider appointing associate judges with applicable skills to assist judges while they deliberate on these cases. These associated judges could be appointed in the same way they are in the Juvenile and Family Court, the Labor court, and the Central Intellectual Property and International Trade Court.

## **6. Conclusion**

The problems and impact of a fraudulent transnational venture capital firm using a Ponzi scheme to defraud investors in Thailand were classified into six main aspects. First, a fraudulent venture capital firm was found to be operating a Ponzi scheme in Thailand. Second, the fraudulent firm using a Ponzi scheme to defraud investors had a significant impact on society because the offenders used technology to commit the crime, especially, social media such as Facebook, Twitter, Line, and Instagram, which enabled them to target victims easily. Third, the firm conned victims into investing in fake joint ventures. Then, the firm convinced the victims to invest in fake businesses located in countries such as Malaysia and China. Fourth, the firm convinced the victims to invest by only allowing investors to access critical information. The victims had to contact a “venture capitalist” before making any investments. Fifth, the impact on victims was revealed by statistics from the Thai Royal Police, Thailand's Action Taskforce for Information Technology Crime Suppression (TACTICS). The Royal Thai Police arrested 32 suspects. There were 50,000 victims, and cash flow in the account was about 10,000 million Baht. Finally, it was difficult to gather evidence because this was a transnational organized crime that required coordination with foreign agencies. The offenders' countries of origin refused to process extradition requests. They protected their citizens which also made the case more difficult to solve. Justice was delayed or not served because the case required international cooperation.

The problems, obstacles, and limitations law enforcement faced were divided into the following five categories: offenders, victims, legislation, law enforcement, and informal finance.

The following seven recommendations are proposed to empower law enforcement authorities: establishing a Ponzi scheme prevention and suppression agency, establishing a fund to prevent Ponzi schemes, informing the public about Ponzi schemes, applying foreign laws to domestic laws, increasing domestic funding and developing rotating community savings, and forming a special jurisdiction for economic crime cases.

## **7. Recommendations for further research**

Further research on preventing fraudulent transnational venture capital firms using Ponzi schemes to defraud the public should be carried out. The following recommendations are for researchers who would like to explore this topic in more detail: (1) A study on establishing a Ponzi scheme prevention and

suppression office should be undertaken. (2) A study comparing legitimate alternatives to Ponzi schemes should be undertaken to find out whether they are suitable for investors. (3) A study on how to disseminate information about Ponzi schemes to the public should be considered.

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## The Evolution of China's Security Policy: From Deng to Xi

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### Abstract

The increasingly aggressive security policy of China in the past recent years has demonstrated significant departure from Deng-prescribed foreign policy practiced since the 1980s and therefore raised the eyebrows of many observers. As Chinese security policy inevitably has meaningful implication on not only regional but also global peace and stability, this visible deviation definitely deserves a closer examination. In order to explain China's changing security policy posture, this paper has traced changes in China's national identity from Deng to Xi era and analyzed how they defined the regime's interests which consequently shaped security policy. Based on constructivists' assumption, this paper posits that the way the world see China and the new Chinese perception of themselves as a great power has thus far contributed to the vigorous move in China's security concerns, especially in the East and South China Sea.

**Keywords:** *China, Identity, Security Policy, Deng Xiaoping, Xi Jinping, Constructivism*

### 1. Introduction

Soon as we entered into the year 2019, the world was extremely shocked by President Xi Jinping's remarks that China reserved the right to use force to bring Taiwan under its control. "Reunification" under a one-China principle was the only choice Beijing laid down to Taipei. Such a bold statement made at Beijing's Great Hall of the People on the 40th anniversary of a landmark Taiwan policy statement of course reflected clearly confident China. Although Taiwan's Foreign Minister Joseph Wu seemed to be confident in his theory about Beijing's possible military attack in the face of economic slowdown (Lee & Hamacher, 2019), whether China's threatening statement would eventually be transformed into a series of aggressive actions or not has yet to be proved. Nonetheless, what we have witnessed in the past years after President Xi took office was a growing assertive security policy of this giant Asian country in the geographic areas ranging from the East China Sea to the South China Sea. In the past decade, Beijing has constantly increased military activities in the East China Sea and around the disputed Senkaku/Diaoyu Islands. In November 2013, China unilaterally declared an Air Defense Identification Zone (ADIZ) over an area of the East China Sea. Apparently, since 2013 China has undertaken land reclamation and construction in the South China Sea at a rapid rate as it seeks to actively stress its sovereignty claims in the area (Dolven, Elsea, Lawrence, O'Rourke, & Rinehart, 2015).

Based on my observation that China's changing identity from Deng era to Xi era is closely related to the development of China's security policy into somewhat much more aggressive, this paper will adopt constructivist approach in order to prove its hypothesis. Although realists agree with the constructivists that states' interests guide their behaviors and thus foreign policies, they contend that, regardless of the types of states, whether they are authoritarian, liberal-democratic or monarchical, states' interests are pre-given and are broadly identical (Burchill, 2005). Structural realists, in particular, posit that national interests are shaped by anarchy (Donnelly, 2000). These arguments suggest that under anarchy all states would behave similarly because their interests are indifferent.

In contrast, constructivist theorists argue that interests diversify from state to state because each state has different identity which is usually corresponding to forms of state. Wendt (1999, p. 233) pointed out "states are actors whose behavior is motivated by a variety of interests rooted in corporate, type, role, and collective identities". While identities designate who or what actors are, interests define what they want, creating motivations for their behaviors (Wendt, 1999, p. 231). George and Keohane (1980) disagreed

with Waltz's assumption (1979) about states having survival as their only national interests but instead added life, liberty, and property as other national interests. Wendt (1999) then added "collective self-esteem". Collective self-esteem is defined as "a group's need to feel good about itself, for respect or status" (Wendt, 1999, p. 236). He continued that relationship with significant others will decide whether collective self-esteem is negative or positive, and that negative self-images are likely to emerge from perceived disregard or humiliation by other states whereas positive ones tend to emerge from mutual respect and cooperation.

In the study of IR, relational constructivists argue that identity could possibly be used in explanation of policy (Hangström & Hanssen, 2016). As contended by Hanssen (2020, p. 8) identity creates "common sense" and helps shape "our decisions on actions". As a result, identity and action mutually constitutes each other. Hanssen's study demonstrates that Japan's identity in the post-Cold War period has changed in accordance with the interaction with and perception of aggressive neighbors, namely China and North Korea, and thus explains how the country's security policy has developed into a "proactive pacifism" stance (Hanssen, 2020, p. 10).

Clearly, realists ignore, if do not completely refuse, the role of identity on shaping interests and accordingly guiding states' foreign policies. Therefore, in order to analyze the role of changing identity and interests on security policy in the case of China, this research paper will prove its hypotheses based on constructivists' assumptions. In this section, I will discuss further about the definition of national identity, its main concept and independent variable of this paper.

National identity is defined as "the sentiment of belonging to a specific nation, endowed with its own symbols, traditions, sacred places, ceremonies, heroes, history, culture, and territory" (Guibernau, 2001, p. 243). As suggested by Guibernau, states steadily seek to unite their people and instill in them the sense of common national identity through various strategies, some of which are described as follows:

- The building and spreading of a shared image of the nation based on the dominant ethnic group within the countries' territories.
- The creation of common enemies to strengthen the sense of unity among states' population against external threat.
- The use of national education system and media to promote states' preferable image. (Guibernau, 2004, p. 669-670).

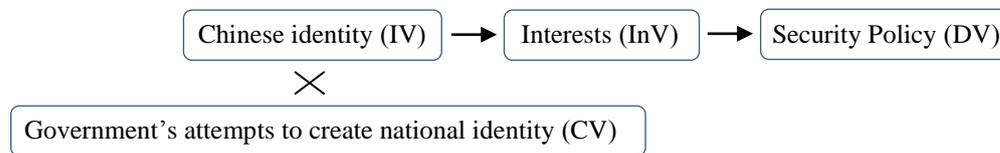
## 2. Objectives

This paper was prepared with a main purpose to understand the evolution of China's security policy since Deng Xiaoping era until Xi Jinping era by proving constructivist theorists' assumption regarding the close relationship between national identity and policy outcomes. By doing so, this study will make a meaningful theoretical contribution and at the same time help policy makers and general audiences to understand better China's increasing aggressive stance in its current security policy.

## 3. Materials and methods

The research adopts a generalized assumption of constructivist theorists that national identity provides a framework for shaping a state's interests and consequently states' foreign policy options (Kim, 2004; Li, 2009; Wendt, 1999). I adopt case study analysis and China is the case study in this paper. When applied the supposition above to the correlation between China's identity and its security policy, my hypothesis is that if China's national identity develops, its interests will be reshaped to comply with the new collective identity and so is its security policy.

Accordingly, the independent valuable in this research paper is set as the identity of China, while the dependent variable is China's security policy. Interests of Beijing are designated as an intervening variable in this paper. An antecedent condition that governs the impact of China's national identity as well as interests that have on security policy is the government-backed attempts to create a new national identity. Relationships between explanatory variables are demonstrated in the diagram below.



In order to accurately determine the explanatory variables as much as possible, this paper specifies the time period for the purpose of research focus and thus will only trace the state-backed development of Chinese identity back to the period as early as Deng-era and as latest as Xi Jinping administration. This paper will examine the relationship between changes in identity of the socialist China and the adjustment of its security policy from Deng to Xi era.

Within the case study, the paper will undertake a process tracing-analysis in order to trace the links between possible causes and observed outcomes. My hypothesis is defective if the connection of the causal process is found broken at any point among those cases.

Primary sources include, but are not limited to, news reports, magazines official and unofficial records of organizations and government agencies, and government documents available in printed and online format. In addition, I will rely on journal articles and books related to the research topic for the secondary sources.

Security in this paper is defined as what Bull (2012, p. 18) described: security in international politics is basically safety, either objective or subjective safety. According to him, objective safety means actual safety while subjective safety emerges from a nation's past experience. Therefore, a nation's security policy means a plan about pursuing safety of that nation.

## 4. Results

### 4.1 Chinese Identity: from Deng Xiaoping to early Hu Jintao era

I would rather call China's national identity during this period and in the following decades until late into Hu Jintao's second term as "victim-based identity". This identity is closely built upon China's historical memory and has some special characteristics. Chinese people always take great pride in the long history of its civilization but Chinese people remain disgraced and will never forget the century of humiliation (Callahan, 2004). Because weak China tended to fall victim to other great powers, China must become a strong, united, and prosperous nation, which will never let the hundred years of humiliation happen again (Zhao, 2004, p. 214-217). The Chinese Communist Party was the embodiment of Chineseness (Zhao, 2004, p. 209-247). The identity and its characteristics are repeatedly emphasized during the leadership of Deng Xiaoping, Jiang Zemin, and remained intact until late in the second tenure of Hu Jintao.

The identity of communist China underwent a significant transition in the late 1970s after the death of Mao Zedong in 1976 and his complete mistake of Cultural Revolution. The ideology of communism was severely shaken as there was considerable disillusion amongst some elites and people alike, leaving the nation amidst the "ideological vacuum". Chinese leaders after Mao era, especially those who were deemed as reformers such as Deng Xiaoping, Hu Yaopang, and Zhao Ziyang, had their opinion diverted from Chairman Mao as they believed only if China focuses solely on economic development and discards the matter of class struggle will the country become great again. Laid upon at the heart of "Deng Xiaoping Theory" was a call for loyalty to the nation (which means the Communist Party) rather than class struggle and socialist egalitarianism (Hughes, 2006). Deng shifted CCP's priority to the four modernization: agriculture, industry, national defense, and science modernization (Goodman, 1994).

However, the increasing popular support for economic reform started to backfire. A call for political reform also emerged in accompany with the departure from class struggle. In the aftermath of the "Beijing Spring" of 1979, Deng decided that what the new generation needed was the patriotic values permeated before the emergence of the ideological vacuum (Hughes, 2006). Therefore, in the 1980s Communist leaders had started to neatly woven the patriotic values into communist ideology. While pushing ahead with the "reform and opening", Chinese leaders abandoned the discourse about class struggle and its victory over the Kuomintang (KMT) but instead used the invasion of imperial Japan as a crucial tool

to preserve the CCP's legitimacy. Schools were no longer used as the field of class struggle but as a birthplace for working-class intellectuals instilled with the combined virtues of being red and expert (Hughes, 2006).

Japan was depicted as the most important enemy in films and cartoons. The reason why the CCP began to target Japan in its endeavor to build nationalistic sentiment in the early 1980s was partly attributed to the facts that threat from the Soviet Union was diminishing as the Soviets could yet earned a decisive victory in the war in Afghanistan while Vietnam could not defeat Khmer resistance. In spite of the Chinese government's attempt, the image of Japan as the principal enemy was not yet firmly formed because some Chinese elites still looked up to Japan as China's model for economic development (Yahuda, 2013). As Allen Whiting (1989) pointed out, China's admiration for Japan's education system, innovation, social structure, and economic development between 1984 and 1986 were distinguished from their historical conflict. However, the Chinese's mixed impression about the Japanese would change in the 1990s.

In the late 1980s, there was a major crisis as the question about Communist Party's legitimacy was shown obviously in the Tiananmen incident (Li, 2009; Yahuda, 2013). Apart from that, the confidence of Chinese leaders were seriously shaken by the collapse of communism in Eastern Europe, the disintegration of the Soviet Union, the challenge of the economic reform, inflation, and widespread corruption. The Chinese elites and policy makers in Beijing now believed they needed to create a new identity in order to maintain national unity (Li, 2009). Consequently, the CCP had to constantly reinforce its own version of nationalism. After 1989, President Jiang Zemin promoted the narrative of the "great rejuvenation of the Chinese nation", which blamed Japan and the west as the sources of China's backwardness and suffering (Yahuda, 2013).

In 1991, in order to bolster the Communist Party's diminished legitimacy, Jiang Zemin administration started to launch a patriotic education campaign, targeting at the young generation (Wan, 2006), promoting Chinese culture, history, and tradition, and stressing on national pride, unity, and territorial integrity (Li, 2009). This patriotic education campaign was also then promoted by China's following leader – Hu Jintao. The Japanese invasion of China in the 1930s – 1940s was emphasized to a great deal in the textbooks for students from primary school to university level as well as in news articles, cartoons, or television programs while over 10,000 memorial statues, education centers, and museums were built in the 1990s (Wang, 2012). The reason why Japan was singled out as the number one villain is because although other imperialist countries were also responsible for their acts of cutting Chinese watermelon, Japan was the country that inflicted the most severe damage on China. Bush (2010, p. 2) noted that imperial Japan fostered "a deep sense of victimization among the Chinese and leaving scars on the Chinese psyche". At the same time, Chinese leaders and the Communist Party were depicted as the guardians of the country and its people, protecting national interests and expelling the Japanese and Western imperialists out of their homeland.

The Outline on the Implementation of Education in Patriotism issued in 1994 made the patriotic education campaign a long-term project. Hu introduced an initiative on education reform in higher education in 2007. Accordingly, Chinese modern and contemporary history became a required core course for all college students, replacing traditional core courses on Marxism-Leninism and Maoism (Wang, 2012). Hu's endeavor to reinforce victim identity and whip up nationalistic sentiment could also be explained by internal disorder and unrest within the Chinese society, which happened against the backdrop of rapid rise in both economic and political power. Like his predecessors, Hu was obsessed with 'stability'. Deng emphasized that stability must come before all else, when Jiang prescribed stability as the precondition to reform and economic development – he proposed three national tasks. Hu then put forward 'harmonious society' notion of which stability was the prerequisite and important foundation (He, 2017). Stemming from the regime's concern about severe domestic crises, Hu administration, therefore, resorted to an ethnocentric rhetoric that amplified China's national identity (He, 2017). Apart from daunting domestic factors, the U.S. strong presence, its regional strategy in East Asia, and its policy regarding Taiwan issue was viewed by Beijing as an intention to obstruct China's revitalization and great power aspirations. Thus, Washington role and strategy continued to reinforce China's victim-based identity (Atanassova-Cornelis, 2012).

#### 4.2 Chinese Identity: from late Hu Jintao to Xi Jinping Era

Later in Hu's administration, victim-based identity of the Chinese nation seemed not to suit a series of glorious achievements of the nation as well as perceptions of itself and of external others. Although the concept of dominant power identity has become more evident during Xi Jinping era, this identity has continually evolved since the late 2000s when China and the world witnessed a series of positive developments that entitled China the right to reclaim the status of world leader. In 2007, China was able to launch Chang'e 1 to study and explore the moon. As noted by Yahuda (2013), much patriotic pride was reflected in the opening ceremony of the 2008 summer Olympic Games. China's national ego was significantly boosted further after the country was able to overcome the difficulties of the 2008/09 financial crisis, standing in stark contrast with the American and European economies. While world's economy was in recession, Chinese economic growth was recorded at around 10 percent between 2008 and 2009. As noted also by Ross (2013), the Chinese realized very well about the superior status of their economy compared to the west during the crisis. If there is anything to boost the Chinese self-esteem to the roof, it would be China being able to surpass Japan's economy to become the world's second largest economy in 2010. Undoubtedly, the aforementioned developments contributed to China's exceptionally assertive international behavior in 2009 and 2010 (Yahuda, 2013). This observation is agreed by Foot (2013) as she noted that Chinese people tend to look for a proof about how their economic achievement brings about concrete benefits in their relations with other countries. Hu, in the late 2000s, vigorously championed the idea of the "great rejuvenation" of China which means strong and prosperous China (Wang, 2012), while at the same time, maintained the official discourse that propagates distinctive China's economic and political model that is different from that of the west.

When Xi was picked as the general secretary of the Chinese Communist Party (CCP) in November 2012 and consecutively the president of China in March 2013, he ushered in an era of increased assertiveness and authoritarianism as he has been "front and center of China's push to cement its position as a superpower" ("Profile: China's President Xi Jinping," 2018). Under the presidency of Xi, China's new identity became noticeable regionally and globally.

Xi raised the slogan of "Chinese Dream" the key of which is "great rejuvenation of the Chinese nation" (Xiangqing, 2013) soon after he took the office. Xi first articulated about his version of nationalistic tool during a visit to an exhibition titled "The Road to Revival" at the National Museum in Beijing (Ho, 2018). Over the next few months he repeated the Chinese Dream in several speeches, including the one at the 19th National People's Congress in March 2018, which, as he elaborated further, means "achieving a rich and powerful country, the revitalization of the nation, and the people's happiness" (Ho, 2018, as cited in Callahan 2015, p. 2). Chinese Dream originally implies a strong China with a strong army (Wong, 2017; Xiangqing, 2013). Xi later added economic dimension to his Chinese Dream vision, envisioning three milestones – a moderately well-off society by 2020, a modern socialist economy by 2035, and a prosperous and strong country by 2050 (Wong, 2017). Chinese identity under Chinese Dream mantra is therefore a strong China with intact economic health and strong army.

An interesting question here is why does Xi have to forge a new identity of dominant power under the idea of national rejuvenation while China seems to already become a very powerful nation militarily and economically, second only to the U.S.? From her study, He (2017, p. 84) argued that the identity of dominant power has been created amidst the "paradoxical backdrop of both remarkable national strength and severe weakness". On the one hand, China has emerged as a world's great power in terms of economic and military strengths. On the other hand, a long list of problems has troubled the CCP, including the economic slowdown, corruption, income disparity, environmental problems, and centrifugal tendencies in Hong Kong, Xinjiang, Tibet, and Taiwan. In the face of crucial challenges, the regime needs to use nationalistic sentiment to unite the Chinese people and to distract them from domestic troubles but to concentrate instead on national pride (He, 2017). Above all, this newly emerged nationalism will help underpin the legitimacy of the CCP as well as the authority of Xi Jinping himself (Sørensen, 2015).

Xi's version of national identity has two dimensions – "China's tradition and socialist modernity" and "its historical trauma and current glory" (He, 2017, p. 84). He articulated further that China's traditional view of the world which is premised on a cultural hierarchy in which the Middle Kingdom is the center of civilization whereas others are subordinates to the center has a significant influence on China's relations

with other states. Traditional culture and socialist values has thus far justified China's quest for regional dominance and objection to any interference from Western countries, especially the United States (He, 2017). Chinese narrative with Confucianism as the most important feature explains why China became superior to other civilizations over thousands of years and will allow the nation to prevail also in the future (Rozman, 2011). For Xi, therefore, the rejuvenation of the Chinese nation is to revive the Sinocentric international order in East Asia (He, 2017), and probably later in world system.

#### **4.3 Development of China's Security Policy: From "Tao Guang Yang Hui" to "Fen Fa You Wei"**

Deng Xiaoping laid down a strategic guideline for Chinese foreign and security policies as he suggested that the country should maintain the low posture of Chinese foreign policy and avoid becoming embroiled in international conflicts. "Tao Guang Yang Hui" or as translated as "hide our abilities, and bide our time, but also get some things done" (Shirk, 2007, p. 105) was championed by Deng and applied in over two decades later. Deng's concept has become a framework for foreign and security policy making for the next two generations of Chinese leaders. It makes sense for China to avoid any trouble while the country remained relatively weak and needed to continue to grow merely economically. On top of that, from 1989 to 1990 the Chinese Communist Party faced several challenges from both domestic and international sources, e.g. the Tiananmen Square incident, the bringing down of the Berlin Wall, and eventually the collapse of the Soviet Union (Keith, 2018).

The low-key security policy implied that China should refrain from initiating any conflicts with its neighbors or the United States as well as exercise the utmost restraint if another country is provocative (Mearsheimer, 2001). Regarding the sensitive issue like the dispute over and around Senkaku/Diaoyu Islands, Deng in 1978 said "perhaps the next generation will be wiser than us and find a way of actually resolving this problem" (Deng's heirs ignore his advice, 2010), suggesting that China and Japan should then put this conflictual matter on the shelf.

The legacy of China's peaceful rise was passed on to Jiang Zemin who embraced multilateralism in relation to the country's new security concept. The concept was initially announced by Jiang at the UN in October 1995 and was then repeated by Chinese elites on several occasions as well as was mentioned in China's defense whitepaper (Li, 2009). Jiang's security concept consists of four main elements with the first stressing mutual trust, mutual benefit, equality and cooperation. The second demands the "Five Principles of Peaceful Coexistence and other universally recognized norms governing international relations" to be a foundation for world peace. The third element underlines the importance of "mutually beneficial cooperation and common prosperity" as the requirement for the economic assurance for peace. The fifth calls states to use "dialogue, consultations and negotiations on an equal footing" as the way to solve interstate disputes and safeguard peace (Fanhe & Qian, 2005, as cited in Li, 2009).

Hu Jintao's foreign and security policy hardly saw significant deviation from those of his predecessors. The discourse of his concept of "harmonious world" first mentioned in Jakarta in April 2005 and elaborated further at a UN speech in September that year seemed to re-express the Five Principles of Peaceful Co-existence and new security concept (Li, 2009). Hu shared his view with Jiang as he also regarded China as a rising power in the international arena but he emphasizes much more on China's "peaceful development" and aversion to challenging the international system. Hu insisted that China should improve its security and strategic policies by continuously pursuing its good-neighbor policies while expanding them outside Asia (Lanteigne, 2013).

Beijing did a good job in pursuing Deng's prescribed security policy until recently Xuetong (2014), a prominent Chinese scholar, pointed out that Xi Jinping adjusted Chinese foreign policy from "Tao Guang Yang Hui" (the keeping low profile) to "Fen Fa You Wei" (the striving for achievement). In essence, the goal of each policy stance is different. "The keeping low profile" aims at keeping China being able to adjust itself to changes in the international environment while "the striving for success" implies that China will take initiatives to shape its external environment in the way it prefers (Xuetong, 2014). The new strategy demonstrates a discernable departure from Deng's guideline. Xu Jin, another Chinese scholar, explained that the brand new posture now allows China to defend its interests and "openly maintain our bottom line" in territorial sovereignty disputes which the country avoided previously (Xu Jin, 2014, cited in He, 2017).

Clearly, strong China is not going to compromise in its national interests. This means it is unlikely that China will yield under international pressure or will hesitate to clash with other countries (He, 2017). The century of humiliation has taught Beijing an expensive lesson about the unfortunate fate when the country was weak. Recently, we have witnessed Chinese actions increasingly matched with its intentions. In July 2016, China said it would not accept a ruling by the Permanent Court of Arbitration in the Hague over the disputed waters of the South China Sea. The judgment came down overwhelmingly in favor of claims by the Philippines and thus seriously upset Beijing (“Beijing rejects tribunal’s ruling in South China Sea case.”, 2016). This rejection is tantamount to its refusal to the United Nations Convention on the Law of the Sea (UNCLOS). Prior to the court’s conviction, on 1 July 2016, the 95th anniversary of the founding of the Chinese Communist Party, Xi made a remarks referring to the disputed South China Sea that no foreign country should expect China to trade in its core interests. “Do not expect us to swallow the bitter fruit of damage to our sovereignty, security, and development interests,” said Xi (2019) and Lee (2016).

In 2014, Xi raised the concept of the new Asian security. At the 4th Conference on Interaction and Conference Building Measures in Asia (CICA), he mentioned that “matters in Asia ultimately must be taken care of by Asians, Asia’s problems ultimately must be resolved by Asians, and Asia’s security ultimately must be protected by Asians,” and also criticized military alliances for harming regional security (“China president speaks out on security ties in Asia”, 2014). The rebuke of Western-led alliance systems inherent in Xi’s call is clear. A year later, the concept was reiterated in the 2015 and 2017 defense whitepapers. Again in October 2016 at the 7th Xiangshan Forum organized in Beijing, Vice Foreign Minister Liu Zhenmin repeated the concept, outlining a framework for regional security architecture amidst the emergence of challenges and opportunities in the new century (McCaughrin, 2017). The essence of new Asian security concept, as McCaughrin noted, is China’s opposition to formal alliances and fancy for more direct ties between security and economic interests while its goal is to progressively displace global security order led by Washington. Beijing expects to translate its economic clout into a powerful leverage over regional security and global influence. The ongoing efforts through Belt and Road Initiative (BRI), Asian Infrastructure Investment Bank (AIIB), Free Trade Area of the Asia Pacific (FTAAP), for examples, indicated China’s acquisition of influence via economic clout.

## 5. Discussion

Under the ruling of Deng Xiaoping, China started to forge the identity of a war victim which then shaped the interests of the nation as a weak and developing country. The country had received official development assistance (ODA) from Japan since 1979 with the totaled amount of 3.65 trillion yen (\$33.15 billion), mostly in the form of low-interest loans for the construction of major infrastructure facilities. According to the information from Japanese Ministry of Foreign Affairs, China is its second largest recipient of Japanese ODA. Although China refused the war reparations from Japan in 1972, during the 40 years as a recipient, Chinese leaders did regard Japanese ODA as a form of compensation (Takamine, 2006, p. 51). It was very prudent for Deng and the succeeding Chinese leaders to keep a low-profile security policy when the country had to mainly focus on national and economic development. However, Chinese identity as a victim became mismatched with the country’s actual economic and military power unveiled in the late 2000s. The Chinese people and their leaders alike came to realize about their nation’s prevailing capability and expected that their impressive achievement would lead to a tangible advantage over interstate relationship.

Since the late second term of President Hu, China has forged a new identity of a superpower, which was further strengthened under the leadership of Xi Jinping. Under this superpower identity, it is evident that its security policy and behavior have become increasingly vigorous. This newly bred identity has noticeably made change to China’s interest which has not narrowly focused on economic development but been extended considerably to the projection of its influence throughout the globe in past years. Ideologically, President Xi has been championing socialism with Chinese characteristics, offering the tenet as an alternative to Western liberalism. Belt and Road Initiative (BRI) is a perfect exemplar of Chinese attempt to extend its leadership within and outside Asia. In terms of security, China’s naval base in Djibouti became the People’s Liberation Army’s first overseas base to secure its foothold in Africa, the policy that would be beyond imagination for President Xi’s predecessors.

Changes in China's security policy and behavior have been demonstrated in the territorial disputes over the South China Sea as well. Beijing failed to convince other claimants that it would solve the problem peacefully through consultations and negotiations and Chinese leaders often insisted that China respects international law. On top of that, China's 2017 defense whitepaper stated that "China has indisputable sovereignty over the Nansha Islands and their adjacent waters" (The State Council, The People's Republic of China, 2017). Whenever territorial conflicts erupted with its neighbors, China did not seem to hesitate using force or exercising the utmost restraint. On the contrary, Beijing has been acting provocatively. In May 2014, the state-owned China National Petroleum Corporation (CNPC) even moved an oil drilling rig into waters also claimed by Vietnam, provoking military confrontation and political tensions between them (Kurlantzick, 2015).

On the conflictual issue of East China Sea, Beijing has similarly adopted an aggressive stance, which is considerably different from Deng's suggested guideline. China has steadily increased the number of oil platforms near the median line separating exclusive economic zones between China and Japan despite the fact that both countries had agreed in 2008 under the leadership of Hu Jintao to negotiate for the purpose of co-development. Thus far, China has built around 16 drilling platforms near the median line ("Beijing defends oil, gas activity in East China Sea", 2017). After the nationalization of the Senkaku Islands by Japanese government in 2012, China's military activities have since increased to a significant level in the waters around the islands, heightening the likelihood of military contingency. In 2016 alone, Japanese fighters scrambled 1,168 times, 70 percent of which were against Chinese military jets (Copp, 2016). The intentions of the Chinese were in question again in November 2013 when Beijing unilaterally declared Air Defense Identification Zone (ADIZ) in the East China Sea (Harlan, 2013). This provocative action was widely regarded as a reaction to nationalization of Senkaku Islands by Japanese government. Recently, China's defense whitepaper asserted that "the Diaoyu Islands are an integral part of China's territory" (The State Council, The People's Republic of China, 2017).

## 6. Conclusion

This research paper attempts to trace the relationships among three variables, namely Chinese identity (independent variable), interests (intervening variable), and security policy (dependent variable) in a bid to prove its hypothesis that Chinese security policy changes when its identity and interests transform. As discussed in details above, it is evident that from Deng era until late second term of Hu Jintao, China has clung on the victim-based identity as the interests of China during that time was to boost its economic strength, unify the people, rally mass support, and shore up legitimacy of the CCP. As a result, "Tao Guang Yang Hui" (keeping low profile) had been shaped and practiced as it best served China's preference for the identity and interests at a specific period. However, as China's self-esteem was extremely amplified since the late 2000s due to several positive developments, the victim-based identity and keeping low-profile security policy did not match with Chinese status as well as domestic and world perception anymore. The 2010s ushered in a new page of Chinese history which saw Chinese growing economic and military power in coupled with the strong character of the new leader – Xi Jinping. The Chinese leaders and people strongly feel their rightfulness to reclaim the position of regional and even global leadership. Thus, the identity of a great power has been built to achieve this particular interest. Doubtlessly, evolution of this superpower identity explains China's adoption of vigorous security posture – "Fen Fa You Wei" or striving for achievement -- in Xi era.

Regarding the implication of China's evolved identity and concomitant change in security policy on relations with the existing great powers in Asia Pacific, namely the United States and Japan, certainly the region will witness an escalation in strategic tensions with both the United States and Japan in the South and East China Seas. In order to secure the freedom of navigation of those shipping routes in the South China Sea, the United States, under cooperation of its allies, is expected to continue to conduct the freedom of navigation operations (FONOPs) regularly. One of the U.S. recent attempts took place near Chinese-held islands in the Paracel Islands in September 2019, provoking the People's Liberation Army to deploy navy vessels for the purpose of observation (Panda, 2019). This action and reaction can become a dangerous game if proximity of warships of both sides results in misunderstanding or misjudgment by either side (U.S. to blame if any South China Sea clash: Chinese researcher, 2019). Moreover, hostility between China and

Japan in the East China Sea is not foreseen to easily and quickly taper off in the near future as long as both are not able to reach a concrete and permanent resolution yet. Whether Beijing will surrender the country's recently expanded interest amidst its increasing economic and military clout and while its new purpose is to reclaim global leadership is doubtful. As long as power struggle between Beijing and Washington as well as territorial disputes between Beijing and Tokyo continue, it will not bode well for the future of Asia-Pacific security.

All in all, this study has found concrete evidence that there is a strong relationship between national identity and security policy as argued by some constructivist theorists. Nevertheless, I, in this paper, focused mainly on the top-down process in domestic environments as the factor that shapes state identity and thus left out the bottom-up dimension of identity construction. However, there have been a growing number of scholars that have underlined the bottom-up approach. Li (2014, p. 243), for example, has made an interesting observation that "Chinese nationalism has gradually become the product of a more popular-nationalist, bottom-up approach". The study about bottom-up identity construction and its influence on the shaping of foreign and security policy of China is therefore deserved to be explored further in the future research.

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## Suggestions on How to Use Scaffolding to Enhance Interactional Competence in the EFL Speaking Class

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### Abstract

This article reports the research evidence found from using scaffolding as an intervention in order to improve students' interactional competence (IC) in the EFL speaking class. The research was conducted at Chandrakasem Rajabhat University and thirty eight of third year English major students were participated in this study.

The empirical evidence on scaffolding for speaking class indicated that scaffolding is a flexible teaching method that can be used to assist different levels of students' speaking competency. However, to gain effectiveness and improvement, several practices are required. To achieve the ultimate goal in improving students' IC, the teacher must be keen and have great understanding towards scaffolding instructions. Similarly, the teacher must pay attention to students' speaking abilities, interests, and their limitations so each student can be assisted timely and appropriately. Lastly, the teacher must be able to demonstrate and describe his/her expectations towards students' interactional competence development clearly. Useful and supportive feedback are critical for students' improvement.

**Keywords:** *Scaffolding, Interactional competence, EFL speaking classroom, Feedback*

### 1. Introduction

Scaffolding can be defined as a form of tutorial or assistance given by the expert in order to help the novice/ learners achieve the tasks that are slightly beyond their current ability (Lipscomb, Swanson, West, 2004; Scheb-Buener, 2013). In fact, it is one form of collaborative learning. Moreover, Oxford (1997) suggests that this method can be used to motivate students to have positive attitudes towards learning, school, classmates, and teachers. It can also use to improve students' social skills, cognitive skills, and self-esteem as well. Collaborative Learning emphasizes heavily on social constructivism that learners and teachers collaborate to share and compare their prior knowledge to create mutual understanding of a particular topic. Consequently, new knowledge to be acquired is co-constructed. Since there is no absolute structure to perform pair or group task, the degree of structure of collaborative learning is variable.

Wood, Bruner, and Ross (1976) were the first to introduce scaffolding as a tutorial method in assisting learners to complete the tasks. They propose the six functions of scaffolding namely Recruitment, Reduction in Degrees of Freedom, Direction Maintenance, Marking Critical Features, Frustration Control, and Demonstration. After the original six functions have been introduced, Zhao and Orey (1999) have made some suggestions to enhance the effectiveness of teaching and learning. They pointed out that teachers must consider students' interests to do the tasks and task goals have to be explained clearly from the very beginning. In addition, since it affects directly to the effectiveness of students' performance, teachers' assistance must be given in time. Teachers have to redirect students to get back on track if they cannot do the tasks effectively. During scaffolding, teachers must give effort to describe the tasks clearly and must not interrupt students too often since the interference can block students from contributing or participating.

The scaffolding instructions have been developed by Lier again in 2004. When examine closely, it is found that Lier's adaptation emphasizes on giving proper assistance which is similar to the original one. Nonetheless, Lier points out more that teachers should be more patient to bear with students' failure that is likely to occur during scaffolding. His adaptation also extends to the differences of learners' ability that teachers should be sensitive to this aspect and be prepared to improvise along those differences. Additionally, he specifies further that teachers should encourage students to participate naturally instead of

forcing them to participate when they are not ready. Importantly, Lier has created the new instruction called 'handover/takeover' explaining that this instruction occurs when students understand and know how to comprehend the input. Once the acquisition occurs, students will have more confidence and learn to take over and do the tasks by themselves.

The examples of scaffolding instructions above reveal that the early adaptation largely emphasizes mainly on the teachers' instructions that teachers must learn to deal with various levels of students' proficiency properly. As a result, vague directions were invented as guidelines to help teachers cope up with such difficulty. Because explicit instructions are not yet given, it provokes the attention of scholars in the later stage to modify scaffolding instructions more explicitly and promptly to be used. Bradley and Bradley (2004, p. 1) suggest three types of scaffolding instructions to teach L2 learners in the U.S. The three types of scaffolding are Simplifying the language, Asking for completion not generation, and Using visuals. Further, Clark and Graves (2005, p. 570-579) suggested three effective scaffolding strategies to enhance students' comprehension of text including Moment-to-moment verbal scaffolding, Instructional frameworks that foster content learning, and Instructional procedures for teaching reading comprehension strategies. Additionally, Pentimonti and Justice (2010, p. 246-247) divided scaffolding strategies into two levels: high and low.

To enhance more interactions between students, the researcher also proposed 'negotiation of meaning' as the teaching method used with scaffolding in the classroom. Long (1983) gave the interaction hypothesis that students have to interact to 'negotiate for meaning' so they can learn to modify the input. Through the modification, the input will be comprehensible and students will be able to reach the acquisition. Foley (2012, p. 59-60) described further about the strategies that can be used in meaning negotiation. The five strategies include Comprehensible check, Confirmation check, Clarification requests, Requests for repetition, and Self-repetition or paraphrase.

Hence, in this research, the researcher aims to find feedbacks from using scaffolding and negotiation of meaning as teaching methods in order to enhance students' IC. Suggestions and examples will be provided to give other researchers ideas and preparation of implementing scaffolding in their class.

## **2. Objectives**

To investigate evidence gained from using scaffolding teaching method to improve interactional competence in and EFL speaking class.

## **3. Research Methodology**

### **3.1 Participants**

Seventy two of third year English major students who enrolled in ENGL3203 Course in both sections 101 and 102 were the target population of the study. However, only 38 students who enrolled in section 102 volunteered allowed the researcher to record videos of their group discussions throughout the Course. Therefore, the data were collected from the volunteered group.

All participants were asked to take a speaking test in order to measure their English communicative level. After, they were sorted into groups (with mixed English communicative competency) of 5-6 people for group discussion. For each discussion, each group has 10-15 minutes to discuss the given topic and questions. The topic has been given to students in advance so they can do some research and find more information to be used in the discussion. However, students were required to discuss questions related to the given topic and they were required to answer these questions spontaneously without having much time for preparation.

Participants were asked to scaffold and participate in 8 group discussions and scaffolding feedbacks were gathered from those sessions. To gain feedbacks, three research instruments were used: video recordings of participants' group discussions, questionnaire, and teacher journal.

### **3.2 Research Instruments**

#### **3.2.1 Video Recordings of Participants' Group Discussions**

The video recordings helped the researcher to see more details of scaffolding teaching instructions, students' interactions and feedback, and learning atmospheres in the classroom. The evidences were also used as the back-up to support the findings.

### 3.2.2 Questionnaire

The questionnaire was translated in Thai to make it easy for students to comprehend and respond. Before being used, it was piloted and validated by the three experts. Students were asked to rate their satisfaction and give feedback towards the teaching contents, the teaching performance, the teaching activities, evaluation, and the benefits of scaffolding teaching method.

### 3.2.3 Teacher Journal

After each class ended, the researcher (as the instructor) wrote a journal to record details as follows: problems that occurred during the class, students' improvements and students' weak points. The journal records were used to support and expand the research findings.

In this research, the scaffolding intervention was divided into 3 stages: 1) orientation, 2) during intervention, and 3) after intervention. The framework is adapted from Brown and Broemmel (2011); Clark and Graves (2005) scaffolding frameworks. The processes of each stage are being described in the table below.

#### Stage 1: Orientation

**Table 1** Scaffolding Framework

Stage 1: Orientation	Stage 2: During Intervention	Stage 3: After Intervention
<ul style="list-style-type: none"> <li>▪ Introduce a topic and relate the topic to students</li> <li>▪ Motivate students to think along and participate</li> <li>▪ Help students recall prior background knowledge</li> <li>▪ Give demonstration</li> <li>▪ Pre-teaching concepts and suggesting strategies</li> <li>▪ Simplify lessons</li> <li>▪ Provide supportive materials such as handouts, video clips, or pictures to increase students' understanding</li> <li>▪ Give support as needed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Ask students to present their findings</li> <li>▪ Ask students to negotiate meaning (predict, compare &amp; contrast, prove the effectiveness, discuss the feasibility, etc.)</li> <li>▪ Ask students to give reasons and supportive examples</li> <li>▪ Ask students to think beyond the context and discuss to reflect reality and share opinions within their cultures.</li> <li>▪ Give support as needed</li> </ul>	<ul style="list-style-type: none"> <li>▪ Build connection to bridge students' prior knowledge to new knowledge they have learned.</li> <li>▪ Conclude the discussion and highlight the consensus/mutual agreement</li> <li>▪ Provide feedbacks</li> <li>▪ Re-teach if needed</li> <li>▪ Evaluate the students' performance</li> </ul>

## 4. Results

The suggestions will be divided into three stages of how scaffolding should be implemented in the EFL speaking class.

### 4.1 Orientation

1) Before the orientation period, as Lier stated teachers should tolerate students' failure and differences in their speaking ability. Hence, the teacher should give each student a speaking test to establish their English speaking ability. This will greatly help the teacher to be able to put students into the right groups where the more capable can help the less fluent ones. However, if there are too many weak students

in a group, frustration is likely to occur when students cannot help each other. The evidence from questionnaire revealed that students enjoyed speaking English in groups according to various reasons as follows:

*“I feel good to work with friends who have different speaking abilities. We help each other in the group discussion. I feel more relaxed to speak English with them because whenever I encounter any problems they always support me”.*

Source: Questionnaire No. 20

*“I can speak English because my friends and teacher help me. When I forget some words or cannot explain something, I know I’m not alone and they can help others to understand what I want to say”.*

Source: Questionnaire No. 3

*“Although I feel tired to do research and speak English every class, I feel enjoyable to assist my friends in group discussion and help them to describe in a more understanding way”.*

Source: Questionnaire No. 7

2) To implement scaffolding in the classroom, the teacher should follow the stages or steps in the framework which can be quite time consuming. In other words, scaffolding is suitable to be implemented in an extended class (3-4 hours) rather than a shorter class (1-1.30 hours). In case of shorter hour class, the present researcher suggests that the teacher should minimize and adapt the processes in the framework to fit the teaching hours. Additionally, the framework must be piloted and adapted before actual use so it fits students’ ability and the teaching hours available.

3) Teachers must prepare well to create effective scaffolding lessons. They not only need to have a good understanding of the contents/subjects being taught, but they also need to have a good understanding the implementation of scaffolding as well. Here are some examples of how the teacher used scaffolding in an EFL speaking class. Below, the researcher demonstrates some scaffolding instructions used in this study through the transcription of students’ group discussions from the videos. Conversations were transcribed according to what students said (without correcting their grammar). To fully understand the examples, some abbreviations and symbols are described as follows:

=	=	To signify obvious pausing of an ongoing utterances
?	=	To indicate rising intonation
/ /	=	To show overlaps and interruptions
TT	=	The teacher
capital letters	=	Students’ names
.	=	longer pauses between the conversations

**Example 1:** Negotiation of meaning

**Source:** Scaffolding 1 Group 1

**Topic:** The most memorable movie

NA: They= play together= in a park near= their home err=Nobita is a very timid= and he also foolish/

TT: /Timid= can you describe the meaning of the word timid. Do you know the meaning of the word timid ((Asked class))/

Class: /No/

NA: So= scared ((Wrong pronunciation))= or= can’t do not anything with himself/

TT: /So he is not confident?/

NA: Yes

TT: /You got it now? ((Asked class))/  
 Class: /Yes/  
 TT: /Because I can see their faces= when you said timid ((TT saw suspicious faces in the class))/  
 Note: The teacher negotiated meaning with Na by asking him to describe the meaning of the word ‘timid’ since Na’s explanation about Nobita’s character was not clear. The teacher also helped the group members to fully understand Na’s explanation as well so they can interact in the group discussion easier.

### Example 2: Frustration control

Source: Scaffolding 1 Group 1

Topic: The most memorable movie

N: What are the pros/cons that= what we have from watching cartoon Doraemon

V: Yes pro is= Nobita is have a good friend= yes and= have many friends but friends harm him because he have Doraemon to help each other to go everywhere/  
 T: /Nobita= can’t do anything= by himself?/  
 N: /So that is a con?/  
 TT: /It’s a con yes/  
 Na: /I think err...= the pro in this movie= Nobita= foolish and timid and= his friends also angry him= and fight him= but the last they will forgive him all the time/  
 TT: /So it’s about forgiveness?/  
 Na: Yes  
 TT: /Ah= the good point that you have seen from the movie is forgiveness/  
 Na: Yes  
 TT: /Very good/

Note: As you can see from the example, even though students had problems in explaining the pro and con of watching Doraemon cartoon, the teacher allowed them to fully elaborate their ideas without interrupting. When N corrected V that what she said was actually the con rather than the pro, the teacher confirmed the correct answer without breaking V’s face. By performing as a facilitator and giving opportunities for students to fully express their ideas, it helped students to feel relaxed and discuss more openly with confidence and hence could help control the level of frustration in speaking English.

4) Teachers should make opportunities available for students to speak English on the topics they are interested in. To do so, teachers should investigate their interests in advance or offer a number of topics for students to choose. When students have more freedom to choose the topics, they will feel less uncomfortable to speak English and feel more at ease in topics they are interested in.

5) The teacher should elaborate how he/she expects students to interact in class with specific class rules. Students should understand what the teacher expects of them, for example, students should be aware that they have to speak English in the class and that they can’t simply read directly from notes. For instance, they can use translanguaging and ask the teacher or the group members to translate Thai words into English.

## 4.2 During the intervention

The teacher should not force, but encourage students to participate. The teacher may ask the groups to volunteer and decide on the topics to discuss. This strategy can help reduce stress and bring out students’ willingness to speak. While students are discussing, the teacher should not interrupt or try to correct students’ mistakes all the time. Unnecessary interruptions will cause students to lose confidence and often disrupt the flows of the lesson. The teacher should always allow students to finish delivering what they want to say. In case where they produce confused utterances, the teacher can ask to check what they wanted to convey. Moreover, the teacher should not over emphasize grammatical mistakes. If the mistakes do not cause any communication breakdowns or misunderstanding, they should be allowed to finish their

turns. To facilitate better flow in group discussion, in case group members have low speaking efficiency, the teacher may give them some time to discuss before further participation the speaking activities. It may also occur that participants in the group found it hard to understand one another when there have lower speaking proficiency than other members in the group. To solve this problem, the teacher should consider to summarize main ideas, simplify, or rephrase ambiguous utterances. This facilitation may enhance students to be more focused and maintain their direction in group discussion. In the case of students' variation in opinions, the teacher may help categorize their opinions and help them bring out group consensus. As for students with a high level of proficiency in speaking, the teacher should give them more opportunities to perform more complicated tasks such as giving clear examples to support their points, comparing his/her opinion with others, making a prediction, or analyzing the pros and cons. Teachers should encourage highly competent students to share and make contributions to other group members.

#### 4.3 After intervention stage

It is important for the teacher to give feedback to each group- as well as giving overall comments on their group performance. Teachers need to point out students' errors or weaknesses clearly with examples and suggest how to minimize such errors or weaknesses in the future. Apart from pointing out the mistakes, it is also important for the teacher to give praises on students' performance as well. Praises should be given for both group and individual performances. At the end of each class, the teacher should summarize common mistakes, what they have achieved, and what the teacher is looking forward to see improved in the future. Finally, the teacher should provide opportunities for students to give feedback and share their opinions of how the discussion should be next time and in what way they need help from the teacher.

In terms of benefits, the researcher found many benefits in using scaffolding as follows:

1) Scaffolding motivated students to develop their roles in discussion. Students have learned to develop their roles to take turn to be the group leader, supporter, and learn to compromise and accept different ideas among group members. Based on the evidence from the video recording, at the beginning of scaffolding sessions, most group discussions were mainly dominated by students who have the best English communicative skills in groups. Students who were leaders had to take turns many times because they were responsible to perform many roles such as introducing the topic, leading group members to discuss given questions, encouraging passive group members to take turns, assisting group members in discussion, passing turns, and concluding the discussion. However, through number of practicing, students learned to minimize the leader's burdens as shown in the given example.

#### Example

**Source:** Scaffolding 4 Group 6

**Topic:** Wild animals should stay wild

P: So the first question is err= please share problems about wild animals we know. Do any of you know any problem about these wild animals?

R: Sometime even animal dangerous because err= for example=people want to find food in the forest and then=while find food err=animal is very dangerous to come bit him=and he dead=but the animal don't know about their extinct=yes next?

N: It's like a elephant come to err=eat some fruit in vill=village because err=we invaded to their home=yes

SUK: err= I saw that my friend bought baby lion from the wild to be pet=and when it grow up=it always bit a leg people in the house=and people get it back to the wild=but after that lion is died because they never know how to live in the wild

TT: /Very good/

P: The next question is=why did people kill or attack wild animals?

**Note:** From the example, student divided their roles in the group discussion as follows:

- P was responsible to state the given questions to group members.
- R, N, and SUK were responsible to answer and give support points.
- P and R were responsible to pass turns to other group members.

2) Scaffolding encouraged students to organize their ideas and the delivery of discussion better. In order to express their ideas to others, students learned to use transitions to organize their discussion and to give some background to prompt audiences before introducing their points of view. As can be seen from the example in number (1), R used the word “*next*” to guide other group members to continue her conversation whereas P used the phrases “So the first question is...” and “The next question is...” as transitions to guide the group members to participate.

3) Scaffolding helped students to think more logically since the process encouraged them to do some research, share ideas, and compare their findings with group members. Hence, students could offer logical and valid concrete examples to support their points. Students were able to describe information they researched from their understanding, not by reading as the example shown below.

#### **Example**

**Source:** Scaffolding 4 Group 1

**Topic:** Should government provide shelters for homeless?

N: Ok for me= the government= must= support them= because according to the constitution of the kingdom of Thailand 2017= section 55 announced that= the state shall ensure that the people receive efficient= public health service= universally it means everyone should get it= It’s the reason why government= must= support them. Finally= the thing that= I want to say is =homeless is like us= not different from us= just they don’t have place to go= they don’t have opportunity to do= so give them a chance= to live with us= as possible as you can= thank you.

**Note:** N quoted Thai constitution and described why the government must take care of Thai citizens’ health universally including homeless.

4) After several classes using scaffolding, students should be able to discuss topics that are complex and require greater explanation.

5) Scaffolding promotes students to work in group and allows them to discuss enjoyably with group members. Students feel satisfied that they can share knowledge and experiences in the speaking classroom. The results from questionnaire revealed that 18 students (50.01%) strongly agreed that scaffolding promoted students to exchange ideas through classroom activities. In the same way 19 students (52.78%) agreed that scaffolding promoted them to share experiences and feelings to classmates.

6) Scaffolding motivates students to feel more confident to speak English in the class as the evidence from the questionnaire showed that 19 students (52.78%) strongly agreed that scaffolding helped them to feel more confident to speak English better in an individual task.

7) Scaffolding helps students improve their social skills since they have to adjust to work with others and learn to compromise when disagreements occur.

8) Scaffolding motivates students to expand their knowledge, recall, and recycle the vocabulary they found while doing research to be used in the class. This helps improve the speaking contents of their group discussion as well.

## 5. Discussion

Scaffolding is a teaching method that offers great flexibility in teaching. The teacher is allowed to use different scaffolding instructions to assist students to complete each task in the class. Likewise, this intervention can be used to teach different levels of students' speaking competency. To gain effectiveness in teaching, the teacher requires to practice and implement this type of teaching several times. For students, to enhance interactional competence in speaking English, they should have opportunities to scaffold and have group discussion under the given topics for at least 4 to 6 times.

## 6. Conclusion

Scaffolding is a teaching method that requires the teacher to devote great effort to create framework, plan teaching activities, monitor and assist students while working on speaking activities. Consequently, before implementing it in the classroom, the teacher needs to pay great attention to understand students' speaking abilities, interests, and their limitations. It is important for the teacher to have well understanding of scaffolding instructions as well so the teacher can respond to assist students timely and appropriately. Significantly, the teacher must be able to demonstrate and give clear explanations of his/her expectations towards students' interactional competence development. This is because students learn from their mistakes, friends, and teacher's comments.

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## Reasons to Code-Switch: A Case Study of Malaysian Twitter Users

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### Abstract

As a multicultural and multilingual country, Malaysians often utilize code-switching in daily verbal conversation. This code-switching phenomenon has recently been found to be evident in their written communication throughout the internet, as well. The study in this paper concentrates on the reasons for the employment of code-switching within the context of Malaysian social media users. Information for the study was collected through an online survey distributed through Twitter, a social media platform. The construction of the survey was based on Hoffman's (1991) and Mustaffa's (2014) established reasons for code-switching in verbal communication. The findings of the study revealed that 'the simplicity of the word' and 'being accustomed to the habit' were the most frequent reasons that lead surveyed Malaysian Twitter users to code-switch. The information gained from the study will help provide insight on the reasons why Malaysian social media users employ code-switching in online interactions.

**Keywords:** *code-switching, social media, sociolinguistics, Twitter*

### 1. Introduction

Scholars in sociolinguistics have defined code-switching as a phenomenon in which two or more language varieties are used in a conversation of a certain speech community. Gumperz (1982) asserted that code-switching is the juxtaposition of speech belonging to two different grammatical systems or subsystems within the same speech exchange. As affirmed by Gal (1988), "code-switching is a conversational strategy used to establish, cross or destroy group boundaries; to create, evoke or change interpersonal relations with their rights and obligations". Similarly, Hoffman (1991) asserted that code-switching is the alternate use of two languages or linguistic varieties within the same utterance or during the same conversation. Bullock and Toribio (2009) support Hoffman's (1991) assertion by also defining code-switching as the alternate use of two or more languages in one utterance. Generally, code-switching is construed as the condition of bilingual or multilingual speakers who communicate in two or more languages alternately.

As a multiethnic, and therefore the multilingual, country, Malaysia's language policy is unique. Bahasa Malaysia (Malay language) is the country's national language, while English is the second language and an essential language in education (Thirusanku & Yunus, 2014). Concurrently, code-switching is a typical occurrence in the interaction of bilingual people, especially in the verbal context (Kuang, 2006; Ling, Jin, Tong, & Tarmizi, 2012). Studies have shown that Malaysians naturally code-switch during their verbal interaction due to their habitual code-switching. This habit is even seen in formal courtroom settings (David, 2003). On the other hand, the development of technology has enabled people to communicate extensively, especially through the use of social media: which is a web-based application that allows users to create and publish their content online (Barton & Lee, 2013). Social media has changed the use of language in many ways. For example, the word pin in English no longer only refers to pasting a piece of paper onto a physical billboard, but it also refers to the act of sharing a picture or information on the social media website Pinterest (Meng, 2019).

Most social media platforms permit users to post written messages on their profiles. These messages can be read by other users on the platform. For example, Facebook users may post status updates while Twitter users post short messages called "tweets". Due to the freedom of users to create and post their content online, there are no bounds to their writing and the language they use, including the mixture of two or more languages (Setiawan, 2016). In Malaysia, the phenomenon of code-switching (locally referred to as 'Bahasa rojak') is raising concerns among educators and language purists. Based on their rationale, code-

switching is deteriorating the languages involved, be it Malay or English (Thye, 2014; Bakar & Mazzalan, 2018). To address these concerns, the objective of this study is to explore the reasons for online users to code-switch based on an adapted scheme.

## 2. Related Literature

Code-switching is a prominent research topic in linguistics that has been carried out by researchers from an extensive range of principles with various perspectives and approaches. The studies done regarding code-switching among Malaysians found imperative discoveries. In an earlier study of code-switching in Malaysia, Omar (1982) found that Malaysians code-switch in both formal and informal situations. The use of Malay and English can be applied alternately in a conversation, such as in the example below:

Speaker A: *Tuan Pengerusi, saya pada dasarnya menyokong pendapat Tuan Pengerusi itu tetapi saya ingin mencadangkan supaya peraturan ini dikenakan secara beransur-ansur.* We must be careful not to force the system all at once on the people. They are sure to reject it.

Speaker B: Yes, yes, I agree with you. *Bagaimana pendapat yang lain?*

More recently, a unique study has been done regarding the use of intrasentential and intersentential code-switching employed in Malaysian songs, and it has been identified that code-switching carries certain social functions that emphasize the Malaysian people's intimacy, solidarity and local identity (Rusli et al, 2018). Songs with code-switching are also found to create a sense of belonging and solidarity among members of society. A recent study by Hadei et al (2016) on different YouTube video clips conducted in mixed Malay-English conversation revealed that one of the most frequent reasons for speakers to switch languages is to 'show identity'. In another study focusing on the use of pronouns among Malay speakers, it was found that Malay women are more prone to code-switch than men when using first and second-person pronouns in their speech by inserting English pronouns in their Malay based conversation, mainly to increase politeness (Othman, 2006). Studies have also been conducted to explore the impact of code-switching between Malay and English in advertisements. A study by Sulaiman et al (2013) discovered that the respondents in their study held positive perceptions towards code-switching advertisements, which then suggests that code-switching is a good marketing strategy as it is perceived as effective, influential, and creative by consumers.

However, code-switching between Malay and English is often considered to be a complicated issue, especially among language purists. As asserted by Hoogervorst (2015), "the delicate balance between the two languages remains a complicated issue and the Malaysian government frequently undertakes measures to promote the use of Malay at the cost of English". In light of this subject, a local scholar, Seong (2007) conveyed that code-switching in Malaysia integrates two different angles, namely positive and negative, positive angles are integrated when code-switching is used to better comprehend the minds of Malaysians, but negative angles are in place when code-switching is used in formal situations. However, David, Kuang, McLellan, & Fatimah (2009) viewed code-switching as an integral part of the style of Malaysian speech, where Malaysian Malays, Chinese and Indians (the main ethnic groups in the country) are faced with a multitude of options in terms of making significant and meaningful language choices in both intra and inter-group interactions. In families that are comprised of more than one ethnicity, for example in a mixed Chinese-Malay family, code-switching has been found to occur either consciously or subconsciously. Code-switching in a mixed family context is mainly developed based on the issues discussed, when quoting somebody else, when being emphatic about something, as an interjection, and because of real lexical need (Stapa & Begum Sahabudin, 2016).

The literature demonstrates that extensive and constructive studies have been conducted regarding the phenomenon of code-switching and the ways it is often employed by speakers. Through these scholars' observations and analysis, there is evidence that there is strong pressure for speakers to use code-switching in their speech, especially in a multicultural country like Malaysia where most of the people are bilingual, if not multilingual. The current study, however, is addressing a different angle in the field of studying code-switching by attempting to discover the reasons for language users to code-switch in written social media posts by conducting an online survey to gain a better understanding of their perspective.

**3. Objective of the Study**

It is well-established that the presence of code-switching during verbal interactions among Malaysians is due to reasons such as being accustomed to habit and to distinguish among races (David, 2003; Ling et al, 2012). However, in a written medium where users may devote their time to planning their writing before posting (therefore avoiding the habitual verbal code-switching), the phenomenon is observed to still be taking place. The current study is directed to discover the reasons for the use of code-switching among Malaysians on social media. The distinction of the current study as opposed to previous studies focusing on the reasons and functions for code-switching is that this study is taking advantage of the online atmosphere, specifically by surveying online users directly.

**4. Materials and Methods**

In an attempt to retrieve the information regarding the usage of code-switching among social media users, an online survey was created through SurveyMonkey. The online survey was designed based on the functions of code-switching listed by previous scholars. For this study, the functions relevant to communication on social media were purposely selected to create a poll to achieve the research objective. The online survey was then distributed to the selected social media for the study, Twitter. Twitter is a microblogging platform that allows users to post short messages (tweets) up to 280 characters. Barton and Lee (2013) suggested that for research involving the use of technologically mediated communication, the researcher carries the role of an insider by being an active user of technology while, at the same time, examining other users. Following this reasoning, the online questionnaire was distributed to other users to a readily available audience (Twitter followers) to answer the poll through the researcher’s personal Twitter account.

The design of the questionnaire was based on the classifications of the reasons for code-switching as established by previous researchers, specifically Hoffman (1991) and Mustafa, Ariffin, and Said (2014). In Hoffman (1991)’s classifications, there are several functions of code-switching, such as to talk about a particular topic, to quote someone else, to provide emphasis about something, to make an interjection (by inserting sentence fillers or sentence connectors), to repeat for clarifying, to express group identity, and to show the intention of clarifying speech content. Meanwhile, Mustafa et al (2014) explained the reasons for the use of code-switching in a specifically Malaysian context, making it especially applicable for this study. According to Mustafa et al (2014), the reasons for users to code-switch online are 1) being accustomed to the habit of code-switching in their verbal interaction 2) the economy of language 3) to show off their linguistics ability 4) to convey meaning 5) to express emotions and 6) to practice their English. These functions and reasons for code-switching listed by the scholars were merged and constructed into the design of the survey, which resulted in the poll options of the survey below:

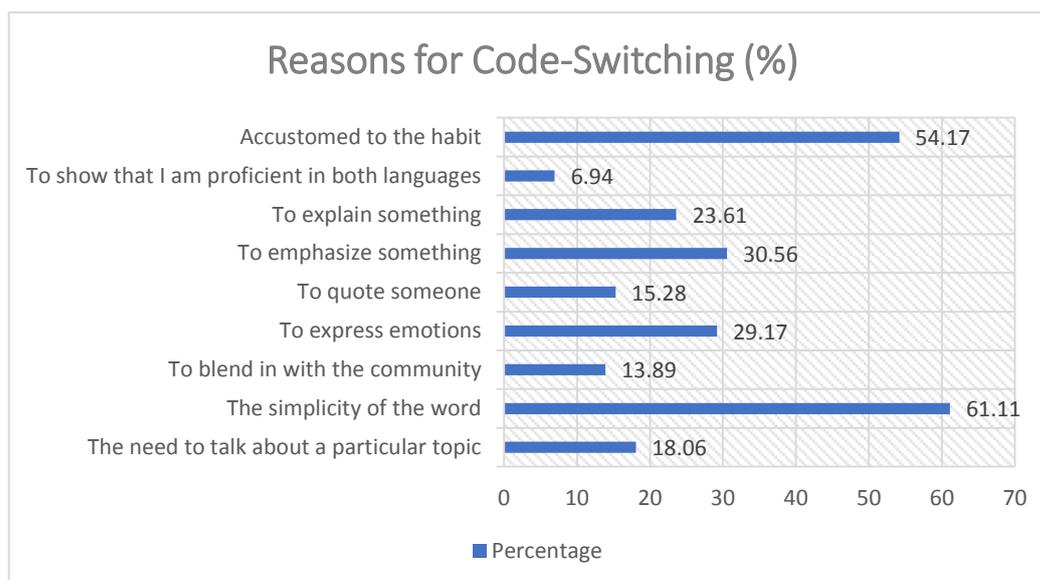
**Table 1** Survey Poll Options

Survey Poll Options
The need to talk about a particular topic
The simplicity of the word
To blend in with the community
To express emotions
To quote someone
To emphasize something
To explain something
To show that I am proficient in both languages
Accustomed to the habit

The survey is created in the form of a single-question poll, where the users can click the options they most agree with. This method is applied to gather as many responses as possible, as people are more inclined to answer questionnaires that do not consume too much of their time (Susteren, 2020). In the survey, each participant may choose more than one option. The background of the targeted audience for the survey is not definite since the anonymity of Twitter protects the actual identity of the users (Herring &

Androutsopoulos, 2015). Nonetheless, based on the proximity of the targeted audience with the researcher, the audience background may be classified as 1) being in the age group of 20-29 years old 2) holding a Malaysian nationality 3) consisting of both males and females. It should be noted that this exploratory study is not considering the personal background of the participants and that for this study they are simply treated as a group of Malaysians using social media as a platform of communication. A total of 72 Twitter users participated in the online survey that identified their reasons for code-switching.

## 5. Results and Discussion



**Figure 1** Reasons for Code-Switching Based on Online Survey

The feedback gathered from the respondents provided significant findings for this study. Figure 1 above presents the likely reasons for code-switching among Malaysian Twitter users. Each survey participant can answer more than one option. As a result, the numbers shown are referring to the percentage of participants agreeing to the statement out of the total group of 72 participants.

Based on the results, the most popular reason with a total of 44 respondents (61.11%) indicated the preference to code-switch over speaking in a single language is due to ‘the simplicity and availability’ of a particular lexicon in the language they code-switch to. In a study of online interaction by Halim and Maros (2014) done towards Malaysians, the researchers found that some words are not available in the initial language. This lack of applicable words required the speakers to switch to words in the other language to be more semantically accurate, especially if the context of the communication is bound to culture. This phenomenon is also called an ‘asset’, where the application of code-switching helps to maximize communication and to strengthen not only the content but the essence of the message (Cheng & Butler, 1989). Some concepts are not available in the initial language, causing the speaker to code-switch to make the subject of conversation more apparent. For example, for a Malaysian to explain the typical Malaysian dish ‘nasi lemak’ in a conversation initially begun in English to another Malaysian that is already familiar with the dish would require the speaker to use the Malay phrase ‘nasi lemak’, rather than explaining what they meant by the literal translation, ‘fragrance rice’ in English. The survey’s findings also relate to Heredia and Altarriba’s (2001) research, where they note that bilingual people commonly switch languages whenever a word in a base language is not currently accessible. The current study found that participants identified this reason to code-switch most often. The current finding is also parallel to the observations, as the researcher has found examples of tweets containing code-switching of the simple lexicon (lesser number of letters and syllables, due to Twitter’s limitation of characters in one tweet), therefore it is necessary to minimize the character use while trying to convey the most accurate meaning at the same time.

The second most common reason for code-switching online is 'being accustomed to the habit', with 39 respondents (54.17%). Previous studies have shown that bilingual people tend to code-switch out of habit in their verbal interaction (David, 2003; Ling et al, 2012). The current study suggests that, even in a written online interaction with preplanned language, Malaysians who are accustomed to the habit will continue to code-switch. As a multicultural country with multiple ethnicities, Malaysians are accustomed to code-switching when communicating with others, often to ensure that the content of the message is shared accurately (Cheng, 2003). This habitual code-switching between Malaysians is very common. Code-switching is even established as a part of the Malaysian identity through its portrayal in a local animated series that portrayed people from different ethnic groups communicating with each other (Nadzri & Hassan, 2013). However, in the case of social media, even though there is often no communicative necessity for code-switching to occur, the implementation of code-switching is still found to take place. This continued use of code-switching is due to the verbal habit being carried into its written form through social media interaction.

The next reason for code-switching according to the survey results is the need 'to emphasize something'. Twenty-two participants (30.56%) agreed that the need to emphasize was a reason they employed code-switching. In previous research, scholars have suggested that participants involved in code-switching believe that inserting words from other languages would help them stress their intention, especially when explaining a concept that has no equivalent word in the initial language (Baker, 2006). Code-switching is also common when the speakers are more familiar with a concept in the language they code-switch to rather in the base language (Cheng, 2003). Switching that occurred at the end of speech also helped to emphasize a point by adding stress on the statement (Gal, 1979). A study by Tabaku (2014) showed that code-switching is also employed by students to emphasize or reinforce what they want to say to help the teacher understand their message more clearly. In studies of bilingual Malaysians, code-switching was found to be employed to emphasize warmth and affection to the people they communicate with (Hadei et al, 2016). Through this study, the moderate response gathered from Twitter users have suggested that the need to emphasize their message is one of the more popular reasons for them to practice code-switching online.

Based on the survey, the need 'to convey emotion' comes as the fourth most common reason for users to code-switch, with 21 respondents (29.1%) selecting the poll option. As asserted by Panayiotou (2004), code-switching is employed when certain emotional terms were seen as more appropriate in one language versus the other. In Panayiotou's (2004) study, subjects tended to react to stories using different emotional words than the language the stories were originally read to them in.. For bilingual or multilingual speakers, the brain works so that particular emotions are commonly expressed in the language a person is most familiar with, this usually being their first language. Using psychological analysis, Altaribba and Santiago-Rivera (1994) argued that the first language is often associated with a broader range of emotions than the second language, and as a result, language switching becomes a defense mechanism. Similarly, in the context of Twitter interaction, a user may employ code-switching to better respond to a tweet replying in the opposite language. Therefore, an emotional expression that is only available in the other language would best suit their need to 'convey emotion'.

'To quote somebody' was selected by 11 participants (15.28%) as a reason to code-switch. The need to quote somebody may require code-switching, especially if the initial quoted message is not from the same language as the current conversation. Previous scholars have argued that it is common for speakers to code-switch when directly or indirectly quoting someone else, or when the communication is more narrative (Sebba & Wootton, 2013). However, this need to quote is different in the case of social media interaction. The small number of users agreeing with this reason is possibly due to the nature of social media, especially Twitter). As a result, the need to quote somebody else is less substantial, resulting in only 11 survey participants agreeing with the statement.

Following that 10 participants (13.89%) acknowledged the need 'to blend in with the Twitter community' as their reason for code-switching on social media. Crystal (1987) claimed that an individual code-switches to express unity with a particular social group. The need to blend in with a certain community is dependent on the linguistic characteristics of the participants in each situation (Kachru, 1978). Gumperz (1982) suggested that code-switching is not only for communication purposes, but also to reflect the community they are belong. Hoffman (1991) mentioned that the need to code-switch may

emerge when there is 'a literate' or 'an illiterate' to appeal to, which consequently reflects the community engaged in the interaction. Research done on the language pattern of Twitter users has argued that the varieties of language online such as the use of intrasentential and intersentential code-switching is a part of the users' effort to build rapport or form solidarity within a particular community (Maros et al, 2016). However, the analysis in the current study presents a contrasting finding, where only a small number of the participants in the survey agreed that they code-switched to align with the Twitter community.

Finally, only a small number of survey participants recognized the need 'to show that I am proficient in both languages' as a reason to code-switch, with only five participants (6.94%) selecting this poll option. This result is in opposition to Mustafa et al (2014)'s findings that asserted people who code-switch are attempting to show off their skills in multilingualism. The unnecessary showing off knowledge of a different language is considered to be one of the cons of code-switching (Al-Qahtani, 2014). Although previous researchers have proposed that code-switching is one of the ways for people to show off their knowledge (Mustafa et al, 2014; Abalhassan & Aslhalawi, 2000), this survey demonstrates a slightly different finding. The need for people to show off subsists, however, based on the data in this study, only a small number of participants agreed with this statement, demonstrating that most of the survey participants do not think that they code-switch to show off. Nonetheless, there are always possible disadvantages when conducting an online survey since respondents may not answer truthfully or may pose as different people by submitting responses multiple times (Lefever et al, 2006).

## **6. Limitations of Study and Suggestions for Future Works**

The current study is a small-scale trial involving a modest number of survey participants. Therefore, the findings are limited to only the opinions of the sample participants. This study is poll-based, where participants selected the most agreeable choices of reasons for code-switching based on the available options in the survey. One of the challenges of this study is to gather responses from a large number of participants, as there is no strong incentive for social media users to participate in the survey, even if the survey managed to reach them digitally. On this basis, to further discover the reasons and functions for code-switching, especially in the internet environment, a more detailed study should be conducted, preferably in a manner where the participants may share their subjective thoughts and opinions free of any restricted scheme, such as a focus group.

## **7. Conclusion**

Based on the results of the online survey in the current study, the most significant reason for participants on social media to code-switch is the availability of simpler words on the language they code-switch to. The findings in this study partially supported some of the functions of code-switching as proposed by previous scholars. Social media allows users to freely construct their language use without interruption. Therefore, the sharing of ideas and the discussion of information in the cyber world is possible on an extensive scale. Twitter users are shown to share the same 'internet language' as a result of code-switching, as well as creating their unique slang expressions, which in turn has made conversations and discussions on social media distinct from verbal communication. As proposed by Myers-Scotton (1989), code-switching can occur frequently in informal conversations between people who know each other and shared features such as educational, ethnic, and socioeconomic backgrounds. Similarly, in the context of Twitter, the most evident 'background' of all the survey participants are that they are all 'users of social media'. Although the accurate personal background information of the participants was unattainable in this study, the status of social media as an informal medium of communication has certainly shown to have created a comfortable environment for users to employ informal language in their interactions with each other, including code-switching. Admittedly, the downside of code-switching on a written platform such as social media may affect the writing proficiency among users in the long run. On top of that, the subject of identity is also a concern, as the implementation of code-switch may affect the process of building a nation-state (Mahmor et al, 2014). Indeed, language purists may find this worrisome, however, it is agreeable that the process of communication is more successful with the support of code-switching and more successful communication has been made possible with the existence of the internet.

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## A causal relationship model of learning outcomes model for engineering undergraduate students

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### Abstract

The objectives of this research were to develop indicators and learning outcomes for engineering undergraduate student's measurement tools and develop and validate a causal relationship model of learning outcomes for engineering undergraduate students. This study consists of a survey that described the indicators and causal relationship and the result of the study. The survey employed five-point Likert scale questionnaires with 55 items, including four factors, namely human skills, organizational skills, information skills, and knowledge and skills in engineering, and causal relationship. The result from 1,316 engineering undergraduate students showed that the causal relationship model was consistent with empirical data at a moderate level. Learning outcomes are strongly influenced by learning style, followed by achievement goal orientation scale, life-long learning skills, institutional and goal commitments, engineering skill self-efficacy, engineering career outcome expectations, and student status through cooperative education, respectively.

In conclusion, learning style was the most influential but student status through cooperative education was less influential for learning outcomes. However, all variables were important for learning outcomes of engineering undergraduate students.

**Keywords:** *causal relationship of learning outcomes model, undergraduate students, engineering*

### 1. Introduction

The rapid growth and globalization affect the economy and society. In the past two decades, higher education institutions have produced graduates in the labor market; however, they must also produce responsible citizens with morals and ethics (UNESCO, 2009). Higher education institutions must be ready in many areas to increase their competitiveness, especially for the development of comparable quality graduates comparing to foreign countries. Their graduates should be able to adapt, have a working skill, and be able to live in the national, religion, cultural, and language diversities (Office of the Higher Education Commission, 2013). In the past, there had been relatively serious concerns about the quality of education; thus, it is indispensable to realize more about how is students' study quality: developed or seeking knowledge, attitude, and skills that are necessary for the institution (UNESCO, 2010). Many changes occur in the educational system, which really needs indicators to assess the learning achievement of students, as learning style has changed from telling or only teachers teaching to enable students can explore new knowledge from everywhere on their own (Pungchompoo, 2016). Furthermore, in the employment context of bachelor graduates, it was found that Thailand can produce graduates into the labor market beyond the demand each year. However, many vacancies are still occurring because the applicants lack the basic skills and specific techniques (UNESCO, 2011), indicating that students, in general, do not show the improvement and develop essential skills during studies period (Arum & Roksa, 2011, as cited in Ursin, Lasonen, Hernandez-Gantes, & Fletcher, 2014).

The society has high expectations on the higher education institutions to operate efficiently and responsibly, concerning their learning outcomes, ability to produce graduates with desirable characteristics that meet the needs in various sectors of society, managing efficiency, and the effectiveness of valuable information to the public. The important information mentioned is such as the cost of graduate production, the number of students, students' dropout rate, students' graduation rate, graduates' employment rate, lectures' quality rate, as well as research and academic works. The production and development of human

resources should be planned based on the information that is consistent with the needs of the country in order to drive economic and social development (Office of the Higher Education Commission, 2013). Therefore, indicators and measurement tools for checking basic information, reflect what students should receive from learning, namely learning outcomes should consider, so that all sectors can receive and access information. However, the review of relevant documents and research found that higher education institutions in Thailand, especially the engineering major, high demand major for the labor market, still do not have learning outcomes measurement but still remind less research related to engineering major measurement. Most of the studies related to factors affecting learning inquiry behavior of bachelor's degree in the faculty of engineering (Buacharen, Techapunratanakul, & Buochareon, 2019) causal factors affecting to learning outcomes of nursing students (Petchkong, 2016) competency factors affecting learning outcomes and perception in terms of university overview of students at Chulalongkorn University (Srisai, 2016).

Therefore, this research interested in measuring learning outcomes, as well as to acknowledge other aspects of the education system and the effectiveness of engineering learning and teaching. Being a professional engineer, in addition to having specific knowledge in the field, there must also be able to integrate interdisciplinarity skills and knowledge in a rapidly changing global, social, and technological context, able to work efficiently and effectively with people from diverse backgrounds and cultures. Also, if the students have good learning outcomes, it is contributed significantly to the reputation of the institution, extracting resources for development, and affect the decision making for further study (Nusche, 2008). Moreover, the researcher is interested in developing causal relationships model of learning outcomes for engineering undergraduate students which consisted of 5 variables such as engineering skill self-efficacy (Mamaril, 2014), engineering career outcome expectations (Marra & Bogue, 2006 cited in Concannon & Barrow, 2009), life-long learning skills (Drewery, Pretti, & Barclay, 2016), achievement goal orientation scale (Mamaril, 2014), institutional and goal commitments (Pascarella & Terenzini, 2005), learning style (Ribera, Ribera, BrckaLorenz, & Laird, 2012). For a reason, to propose a development strategy for improving the learning outcome of students for educational institutions and curriculum to prepare students for the labor market of knowledge-based economies in the 21st century.

## 2. Objective

The main objective of this research was to develop a causal relationship model of learning outcomes for engineering undergraduate students with sub-objectives as follows.

1. To develop indicators and learning outcomes for engineering undergraduate student's measurement tools.
2. To develop and validate the causal relationship model of learning outcomes for engineering undergraduate students.

## 3. Materials and Method

This survey research divided into 2 phases;

**Phase 1** Developing indicators and learning outcomes for engineering undergraduate student's measurement tools

Synthesis components and development of indicators from secondary data: documents, research articles, electronic publications, and research documents. Data collection by using secondary data analysis and making field note. Followed by exploratory factor analysis to develop factor components. According to Hair, Black, Babin, and Anderson (2014), determine the sample size that should be equal to 10-20 times of observed variables. In this research, there were 16 observed variables for confirmatory factor analysis ( $16 \times 20 = 320$ ) and 21 observed variables for path analysis ( $21 \times 20 = 420$ ); thus the sample size is 1,316 third and fourth-year engineering students who have been learning for a while and are ready to work in the workplace, both during their studies and graduation, with sample random sampling from 11 universities. Five-point Likert scale questionnaire was used as research instruments with .67- 1.00 of validity from five experts, and reliability were between 0.886 to 0.967.

**Phase 2** Develop and validate causal relationship model for engineering undergraduate students

This phase aims to develop and validate the causal relationships model of learning outcomes and study the quality level of the causal factors for enhancing learning outcomes by taking the results from phase 1 to analyze the structural equation model.

#### 4. Results

The results of indicators and measurement development for learning outcomes were divided into three parts as follows.

##### 1. General information of respondents

**Table 1** Samples Classified by general information

General information	Number	Percentage
<b>Gender</b>		
Male	588	44.68%
Female	728	55.32%
<b>Age</b>		
24 years	73	5.55%
23 years	444	33.74%
22 years	525	39.89%
21 years	274	20.82%
<b>Types of higher education institutions</b>		
Public university	944	71.73%
Private university	250	19.00%
Rajamangala University of Technology	103	7.83%
Open university	19	1.44%

2. The results of indicators and measurement development for learning outcomes for engineering undergraduate students.

2.1) The results of the confirmatory factor divided into four factors, such as human skills, organizational skills, information skills, and knowledge, and skills in engineering (Khampirat, 2008), as detailed in Table 2.

**Table 2** Skills and indicators of learning outcomes for students

Skills	Items	$\beta$	S.E	$z$	$R^2$
<b>Human Skills</b>					
Integrity and Ethical Responsibility	4	.677	.019	36.020	.458
Respect and Honor the Others	2	.519	.023	22.135	.270
<b>Social Skills</b>					
Social Skills	3	.741	.017	44.612	.549
Self Confidence and Understanding Diversity	4	.833	.013	63.475	.694
<b>Organizational Skills</b>					
Working Effectively and Efficiently	3	.724	.016	46.422	.524
Membership and Leadership Skills	3	.763	.014	53.850	.583
Entrepreneurship	3	.743	.014	53.155	.552
Knowledge of Business and Public Policy	1	.490	.022	22.036	.240
<b>Information Skills</b>					
Communication Skills	6	.720	.015	47.431	.518
Critical Thinking	5	.770	.013	58.144	.593
Learning Ability	3	.707	.015	46.467	.500
Initiative and Understanding Current Issues in Engineering	2	.716	.015	46.279	.513
<b>Knowledge and Skills in Engineering</b>					
Basic Knowledge in Science and Engineering	2	.664	.017	38.078	.441
Engineering Analysis and Design	5	.791	.013	59.523	.625
Applying Professional Instrument and New Technology	5	.604	.021	29.098	.365
Work Quality and Problem Solving	2	.635	.018	35.961	.403
Adherence to the Code Engineering Professional Ethics	2	.618	.019	33.053	.382

$$\chi^2 = 174.784, df = 68, p = .000, \chi^2/df = 2.570, RMSEA = .035, SRMR = .022,$$

$$TLI = .983 \text{ and } CFI = .992$$

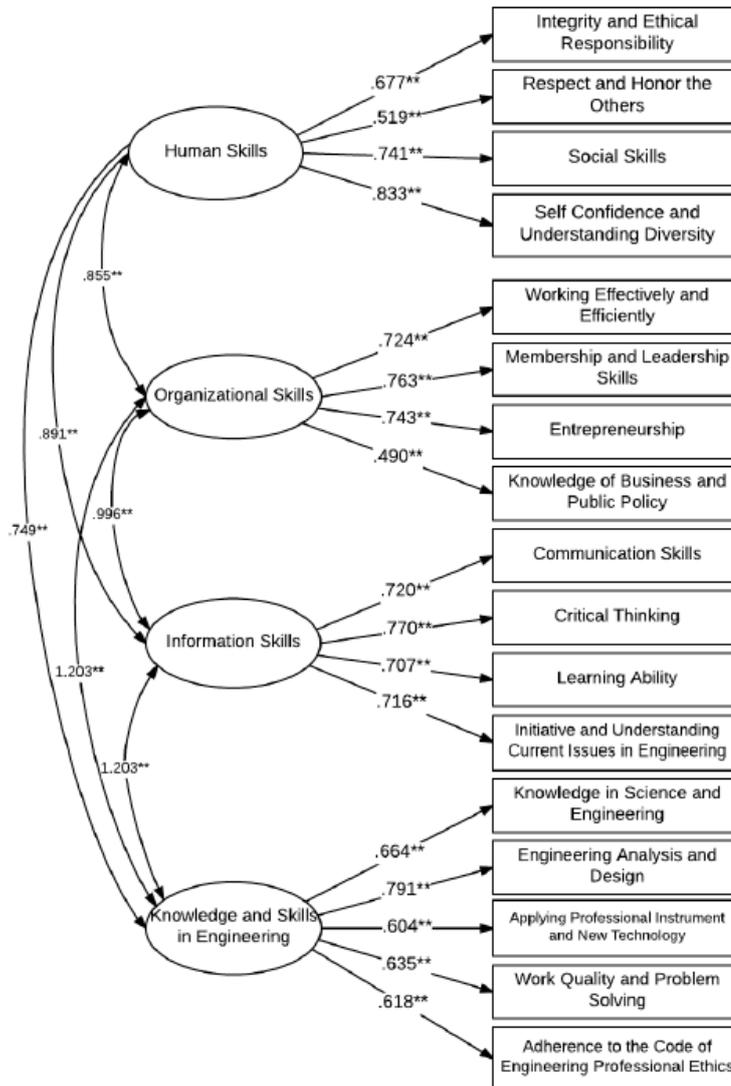


Figure 1 Model for learning outcomes for Engineering undergraduate students

3. Results from constructing the validity of a causal relationship model of learning outcomes for the engineering undergraduate development

3.1 The result of Bartlett’s Test of Sphericity was Approx. Chi-Square = 17712.41, *df*= 210, and *p* = .000, indicating that the variables were related or different from zero with statistical significance at .01 and KMO = .936. The result also showed that the correlation matrix of variables was not an identity matrix, and there was enough correlation between the variables to analyze the composition.

3.2 The result from constructing the validity of a causal relationship model of learning outcomes showed that the factors were consistent with the empirical data with factor loading, as detailed in Tables 3 and 4.

**Table 3** Total, direct, and indirect standardized effects

Variables	Dependent Variables								
	Learning Outcomes			Lifelong Learning Skills			Engineering Skill Self Efficacy		
	DE	IE	TE	DE	IE	TE	DE	IE	TE
Learning Style		.71**	.71**	.83**	-	.83**	-		
Achievement Goal Orientation Scale	.41**	.05*	.46**	-			-		
Life-Long Learning Skills	.40**	.03	.43**	-			-		
Institutional and Goal Commitments	-	.33**	.33**	-			-		
Engineering Skill Self Efficacy	.09**	-	.09**	-			-		
Engineering Career Outcome Expectations	-	.06*	.06*	-			.66**	-	.66**
Co-op Student	-	.01**	.01**	.60*	-	.60*	.13*	-	.13*
Achievement Goal Orientation Scale	.77**	-	.77**	-			-		
Life-Long Learning Skills	.42**	-	.42**	-			-		
Institutional and Goal Commitments				.79**	-	.79**	-		
Learning Style	-			-			.99**	-	.99**

**Table 4** Factor and loading of the causal relationship model for engineering undergraduate students

Observe variables	b	Standardize			Variance/Residual Variance	R <sup>2</sup>
		$\beta$	SE	z		
<b>Learning Outcomes</b>						
Human Skills	.82**	.69**	.02	34.53	.53	.47
Organizational Skills	.99**	.83**	.01	66.94	.31	.69
Information Skills	.94**	.81**	.01	60.78	.34	.66
Knowledge and Skills in Engineering	1.00**	.82**	.01	60.38	.33	.67
<b>Engineering Skill Efficacy</b>						
Experimental Skills Self-Efficacy	.84**	.38**	.02	23.60	.86	.14
Tinkering Skills Self-Efficacy	1.00**	.80**	.02	47.43	.37	.63
Engineering Design Self-Efficacy	.97**	.77**	.02	39.39	.40	.60
<b>Engineering career outcome expectations</b>						
Career Success Expectations	1.00**	.66**	.02	27.61	.57	.43
Life Success Expectations	.45**	.01**	.02	18.60	1.00	.00
<b>Life-Long Learning Skills</b>						
Love of Learning	1.00**	.84**	.02	53.19	.30	.70
Information Seeking	.96**	.80**	.02	48.86	.36	.64
Self-Reflection	.91**	.62**	.02	26.90	.62	.38
Resilience	.30**	.01**	.02	24.53	1.00	.00
<b>Achievement Goal Orientation Scale</b>						
Master Goals	1.00**	.70**	.03	26.92	.51	.49
Performance Approach Goals	.74**	.46**	.03	15.59	.79	.21
Performance Avoidance Goals	.54**	.25**	.02	10.23	.94	.06
<b>Institutional and Goal Commitments</b>						
Goal Commitments	.76**	.43**	.03	13.59	.82	.18
Institutional Commitment	1.00**	.69**	.02	28.82	.53	.47
<b>Learning Style</b>						
Effort Regulation	.58**	.42**	.03	13.93	.82	.18
Collaborative Learning	1.00**	.45**	.02	19.72	.80	.20

$\chi^2 = 213.01, df = 140, \chi^2/df = 1.52, RMSEA = .05, SRMR = .04, TLI = .96$  and  $CFI = .98$



between individuals, society, politics, economic status, and culture, where else, seeing and understanding diversity is the respect of human values (Mann & Dolan, 2003).

2.2 Membership and leadership skills refer to being able to motivate and influence other people's work with a diverse team and create a proud atmosphere for the team, which is important and necessary to work in a diverse organization. Engineers must have the ability to work individually and teamwork, and able to work effectively as a member and leader in the team, especially, multidisciplinary work (Engineers Canada Accreditation Board, 2015), which is consistent with the skills needed in the 21st century, and being able to guide and lead other people (Partnership for 21<sup>st</sup> Century Skills, 2009). Having membership or follower skills can help build relationships with leaders and teams (Hurwitz & Hurwitz, 2015).

2.3 Critical thinking refers to having skills and ability to think critically, analytically, systematically, able to determine important questions, and assess self-knowledge and ability for continuous work's development. People with critical thinking skills will be able to build credibility on their decisions, as it is relevant to assess the quality of the data sources, the facts, the observed phenomena, and findings from researches. All of these depend on the type of industry, the result of the rapid change and development of technology, and a large amount of data. Engineering students need to develop and apply critical thinking skills in their work or academic projects, solving complex problems faced and evaluating important options (Kobzeva, 2015). Analytical skills in engineers will be different from other fields (Douglas, 2012), which will help students to experience success in work and life in the future (Živkoviü, 2016).

2.4 Engineering analysis and design refer to the ability to apply knowledge, processes, techniques, and engineering design, conducting experiments to solve engineering problems, including knowledge and understanding of the impact of engineering solutions, and with perseverance and patience to complete the engineering work. It is because engineering analysis and design is the process of inventing systems, components, or processes to meet the essential needs that result from the use of technology to meet human needs or to solve problems (Khandani, 2005).

### 3. Analyzing the causal relationship of the learning outcomes for engineering undergraduate students' model

The result of the causal relationship model analysis demonstrates that the learning style had the most significant indirect effect on the learning outcomes. Learning style indicators measured in this research included effort regulation and collaborative learning. It shows the effort of self-management, study hard for getting the best results, the exchange of opinions related to study courses with others, that inspire characteristics of self-control in learning, gaining skills, and determination to succeed in studies and work. It is an essential component that predicts academic success, both for students and other environmental factors, and affects the commitment to the program and educational goals. Moreover, this finding is consistent with Graunke and Woosley (2005) that discipline and good interaction with the faculty are the critical variables that determine the academic success of students. Also, it is consistent with Zumbrunn, Tadlock, and Roberts (2011), which found that self-regulation learning was the important predicting achievement and motivation of the learners. It is the process helps learners to have better behavior and better learning skills (Wolters, 2011) and increases academic achievement (Harris, Friedlander, Sadler, Frizzelle, & Graham, 2005; Zimmerman, 2008) as the learners have a follow-up plan (Harris et al, 2005) and assess learning (de Bruin, Thiede, & Camp, 2011) independently.

## 6. Conclusion

Learning style was the most influential but student status through cooperative education was less influential for learning outcomes. However, all variables were important for learning outcomes of engineering undergraduate students. Those involved in the development and promotion of learning outcomes should focus on development and promotion of holistic learning outcomes in the future.

## 7. Recommendation for the use of research

The result of this research can be used as an educational strategy and as a tool for developing a new curriculum to improve engineering students' learning outcomes and preparing the students for the labor market of knowledge-based economies in the Twenty-first Century.

### Recommendation for next research

More studies should emphasize designing activities that help the students develop essential skills to improve the learning outcomes.

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## Knowledge Management of Human Capital through the Learning Organization of the Agricultural Cooperative Federation of Thailand Limited.

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### Abstract

Knowledge Management (KM) of Human Capital through Learning Organization (LO) of the Agricultural Cooperative Federation of Thailand Limited (ACFT) has been the most important strategy of human capital development. The research objective tried to investigate how knowledge management of human capital as factors affected the operational cost reduction of the ACFT. The study population was the members of the ACFT in the middle region of Thailand. It turned out with 27,186 individuals of ACT membership. Purposive sampling was applied as the sampling technique. It turned out to be 1,850 individuals of the ACFT membership as a sample size. The primary data were collected by questionnaire. Data analysis was applied Confirmatory Chi-square, Root Mean Square Error Approximation (RMSEA), Goodness Fit Index (GFI), Comparative Fit Index (CIF), and estimated parameters were calculated by Structural Equation Model (SEM) to measure the factors influencing the ACFT operational cost reduction. The research results showed that Chi-square, RMSEA, GFI, and CIF were equal to 4.150, 0.0054, 0.9643, and 0.971, respectively. The estimated parameters were calculated from SEM expressed two positive coefficients of exogenous variable--learning dynamic ( $\hat{\beta}_1$ ) = 0.399 and technology application ( $\hat{\beta}_5$ ) = 0.912 of human capital in the ACFT, which meant that learning dynamic and technology application had positive influencing factors on the operational cost reduction of the ACFT. The KM of the human capital of the ACFT is the main strategy of human capital development. Two categories of KM in the ACFT, which comprised of 1) learning dynamic and 2) technology application, had a significantly positive impact on operational cost reduction of the ACFT.

**Keywords:** *Knowledge Management, Human Capital, Learning Organization*

### 1. Introduction

The Agricultural Cooperative Federal of Thailand Limited (ACFT) (2019) is an organization formed by the gathering of provincial cooperative gatherings across Thailand, with members as agricultural cooperatives and farmers. According to the Cooperative Act BE 2542, registered on May 30, 1952, has a status as a juristic person, using the name "Wholesale Cooperative of Thailand Limited" and requesting registration to change its name to "Agricultural Cooperatives Federal of Thailand Limited" on October 1, 1975, Assembly covering approximately 3,900 agricultural cooperatives with a total membership of over 6,000,000 households. ([www.co-opthai.com](http://www.co-opthai.com)).

Human capital is the most valuable resource among other resources in organizations. Like other organizations, the Agricultural Cooperative Federal of Thailand Limited (ACFT) (2019) has been concerned about this point. One of the main functions of the ACFT, stated in the Cooperative Act, B.E. 2542, is to provide knowledge for human development. Over 50 years, the ACFT has adhered to human capital development through the training program, studies, and others. Recently, the ACFT has adopted the concept of knowledge management and learning organization as the means for human capital development. Theoretically, Knowledge management (KM) is significantly concerned with the three ways of learning, which are the right person, the right knowledge, and the right time. It implied that there were some attachments to the organizational strategy and the knowledge contained. The knowledge creativity to escalate the organizational duties. Also, it is a guarantee that the originations are recognized and encouraged by the members' organization. Besides, knowledge management encloses knowledge creation. Sometimes, it merely focuses on knowledge sharing, knowledge storage, and the process of knowledge refinement ([www.knowledge-management-tools.net](http://www.knowledge-management-tools.net)).

Intimately, knowledge is connected and indicates the know-how process and the understanding procedure. The knowledge itself is owned by the individual as their experience product and besieges the social norms through the evaluation of new inputs of their environment (Davenport & Prusak, 2000). It was proposed that knowledge is the unity among the human experience, the value of the individual, the informative context, the expert's insight, and the basic institution where it supplied the evaluation of experience and framework which embodied the new information and individual's experience. Besides, it commonly generated and utilized people's minds. In terms of organizational function, it frequently implanted the documents, including the organizational routines, personal practice, and social norms.

In order to succeed in organizational knowledge management (KM), human capital requires deep expertise of knowledge constitutes. At present, the scholars have to set up the barriers between the data and information. It is viable to move one step. Besides, they take a look at the knowledge pattern that contains and the unique approaches which all of them could be accessed, shared, and combined. The boundary of knowledge management (KM) is not extensively accepted. Knowledge management is the way to make the right intellect available to fit the right person. Also, it is to ensure that any business enterprises can learn. Moreover, it would be able to retrieve and utilize its information linked to the present-day application. Peter Drucker stated that the coordination of organizational expertise resources and its exploitation is to shape both usefulness and competitive usefulness (Drucker, 1999). Sometimes, the new knowledge creation disagreement occurs. Wellman (2009) defined the limits of the knowledge boundary of learning and its technique applied for the management of people already realized. Also, he argues that knowledge creation is frequently comprehended as a segregate regulation and frequently falls along with innovation arrangement. Bukowitz and Williams (1999) connected knowledge management (KM) straightly to tactical knowledge and strategic desire. Due to his point of view, he explained the knowledge management as a broad significance. His explanation is in the same direction as Davenport and Prusak (2000), which stated that knowledge manipulation is the process of the cooperation's information through a systematical organization which particularizes the system for following situations which are acquiring and organizing. It is also attained the sustaining and applying situation, and the knowledge sharing and knowledge renewing in terms of both the tacit knowledge and specific skillfulness of personnel to increase the organizational performance and value.

In terms of human capital development, learning organization (LO) is considered as the way to generate new knowledge and improve human capacity. There is a variety of debating concerning the mechanisms and scope of human learning in the organization. In the scope of research work, the researcher set up the Knowledge Management (KM) functioned as a means for human deployment identified as the exogenous variables following the work of Cook and Leidner (2019). In their research work, they constructed their research works for the companies in the states of Minnesota, Atlanta, and Texas, USA (Cook & Leidner, 2019). The research idea was adopted for the author's research and variables testing. For the correctness and suitability of the research methodology of the ACFT case, the researcher applied Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) (Kline, 2015). It statistically turned out of the significance of 5 exogenous variables of KM which were learning dynamics, organizational culture, organizational transformation, human capital empowerment and technology application ( $x_1 - x_5$ ).

Nowadays, it is the challenge of organizations to encounter with the disruptive technology and digital era and business competitiveness (De Long, 1997). Organizations have to adjust themselves for business competitiveness. Similarly, the ACFT performs its business like other business operations. It has been faced with competitiveness, which has to make its organizational management as cost reduction. The paradigm of cost reduction has been adopted to the ACFT since 2005. By doing that, it encourages all cooperative members and others to concern about the cost reduction in the ACFT, for example, paperless working, online working, electronic financial activities. Cost reduction is the procedure applied by an organization to diminish its cost and to raise their returns. Fundamentally, both fixed and variable costs are concerned. In this case, the ACFT focused on operating cost reduction, which emphasized on their expenditures associated with the running and administrative cooperation expenses included the expenses in operating appliances, equipment, and materials (Belyh, 2020). From the last ten years of the cost reduction paradigm application, the ACFT reported that its operating cost had been declined by 15 to 25 percent ([www.co-opthai.com](http://www.co-opthai.com)). Cook and Leidner (2019) studied knowledge management systems in the organization. They identified that operating cost reduction was one of the corporate strategies that led to the viability and enduringness under the condition of competitiveness. Also, they defined the operating cost reduction as an endogenous variable. Following their research work, the idea was adopted. With the

accuracy and propriety of research methodology, the Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) (Kline, 2015) was applied to identify cost reduction as an endogenous variable for my research work.

From past to present, there were plenty of research works of knowledge management in the organization, both domestic and international research outcomes. However, there was no research work emphasized on the Agricultural Cooperative Federation of Thailand Limited, even if it was formed over 65 years. Its organizational functions also got involved in the Agricultural Cooperative members as the members of the ACFT and the farmers as members of Agricultural Cooperatives throughout the kingdom of Thailand. Again, the ACFT performances redounded to over 6 million farmers' households accounted for 85 percent of the whole nation (www.statbbi.nso.go.th/staticreport & www.co-opthai.com). It is very interesting to conduct the pilot research project to investigate how factors of Knowledge Management (KM) of human capital as affected the operational cost reduction of the ACFT. Besides, the research outcomes would be some benefits for the ACFT to apply for the organization strategies, business plan, and organization policy in terms of the human capital development goal.

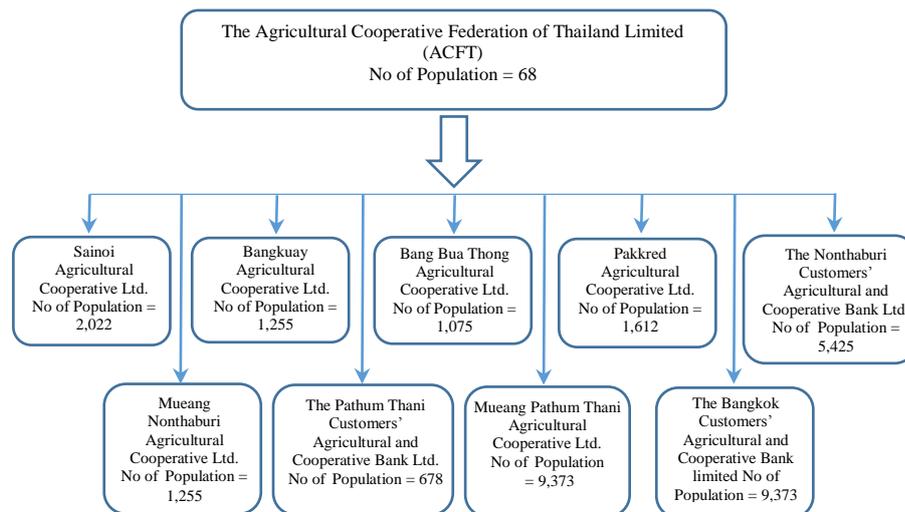
**2. Objectives**

This research aimed to investigate how knowledge management of human capital as factors affected the operational cost reduction of the ACFT.

**3. Materials and Methods**

**3.1 Data Collection**

The study population was the human capital of Agricultural Cooperatives Limited, who are the members of the Agricultural Cooperative Federation of Thailand Limited (ACFT). Since it is the pilot research project, the researcher made the scope of population study only the agricultural cooperatives located in Bangkok and vicinities, which were Patum Thani and Nonthaburi province whose adopted the Knowledge Management and Cost reduction paradigm of their practical performance regularly. The human capital of 10 agricultural cooperatives limited, including the ACFT were considered as the study population, which comprised three categories of human capital--cooperative committees, cooperative officers, and cooperative members. The total numbers of 27,186 human capital from these ten agricultural cooperatives limited were identified as the study population. (See Appendix). The study population is shown in Figure 1.



**Figure 1** The Study population

According to Neuman (2019), the purposive sampling technique was applied as a sampling technique. It turned out to be 18,500 individuals of human capital in the ACFT and its agricultural cooperatives members and their members, which could be expressed in Figure 2. The determination of the

sample size was specified based on the Structural Equation Model (SEM) as the data analysis. Due to the studies of Kline (2015), Lacobucci (2009), and Chareonwongsak (2017), they stated that the minimum number of sample size was equal to 200. Therefore, 1,850 samples were adequate for collecting.

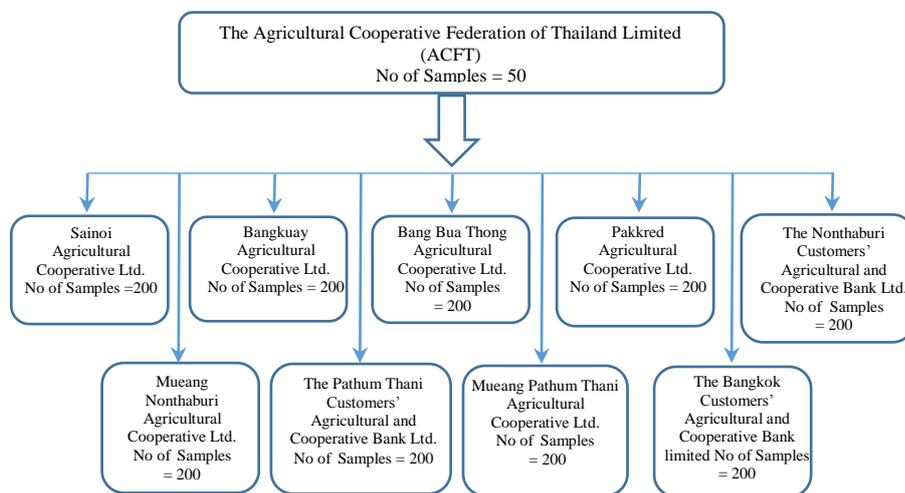


Figure 2 Number of Samples

The primary data were collected by questionnaire. Following to Neuman (2019), the examination of content validity of the questionnaire as the data collection tool expressed by Index of Item-Objective Congruence: (IOC) which evaluated by three specialists, a professor of Michigan State University, USA, an expert of Ministry of Education, The Royal Thai Government, and a statistician of the National Statistics Office, Ministry of Digital Economy and Society (2020), The Royal Thai Government. The result showed the IOC value of 0.906, which expressed the content validity of the questionnaire as a data collection tool. Reliability was evaluated by Conbranch’s alpha. The pre-test of 30 questionnaires was conducted as tryouts at Mahasa Rakam Agricultural Cooperative Limited (Bryman, 2016; Neuman, 2019 & Kline, 2015). It turned out with the 0.910 Conbrach’s alpha coefficient, which expressed the reliability of the questionnaire as the data collection tool. According to Kohl and Reisman (1994), Bryman (2016), Neuman (2019) & Kline (2015), the Conbrach’s alpha coefficient was good enough and also met the requirement of reliability. Therefore, both validity and reliability tests met the requirement (Neuman, 2019). The exogenous variables of  $x_1$  to  $x_5$ ; learning dynamics, organizational culture, organizational transformation, human capital empowerment, and technology application, were collected by a questionnaire that was measured using a Likert scale of 1 to 5, scaling given to provide samples to respond how much they replied from strongly agree to strongly disagree with a specific question (Neuman, 2019; Chareonwongsak, 2017).

### 3.2 Data Analysis

As a multivariate statistical analysis, the Exploratory Factor Analysis (EFA) was conducted. The EFA was applied as a methodology of statistics to find out the foundation of the data structure of a significant number of variable categories applying factor analysis technique to determine the fundamental relationship between variables that were measured. It is widely applied to a scale developing and provides to determine a group of latent established a bundle of variables measured (Finch, 2019; Kohl & Reisman, 1994; Fabrigar & Wegener, 1994). Besides, the Confirmatory Factor Analysis (CFA) was applied in social science to examine the measurement of fundamentals along with the researcher’s realization with the factors nature formulate (Brown, 2015 & Schumacker, Lomax & Schumacker, 2015).

The Structural Equation Model (SEM) was applied as data analysis. It is the analysis of multivariate variables to determine the foundation or structural relationship of variables. This statistical technique is the aggregate of 2 statistical analyses--factor analysis and multiple regression. (Kline, 2015 & Boomsma, 2012). Theoretically, this statistical methodology is applied to the structural relation analysis of 2 variables, which are variables measured and latent variables (Schumacker et al., 2015). The statistics were applied as Confirmatory Chi-square, Root Mean Square Error Approximation (RMSEA), Non-Normed Fit Index

(NNFI), Comparative Fit Index (CIF), and estimated parameters applied Structural Equation Model (SEM) to measure the factors influencing the operational cost reduction of the ACFT (Kline, 2015; Hoyle, 2012 & Schumacker et al., 2015).

#### 4. Results and Discussion

The Exploratory Factor Analysis (EFA) is shown in Table 1 below.

**Table 1** Descriptive Statistics of Exogenous Variables

	Mean	Std. Deviation	Analysis N
$x_1$ (learning dynamics)	3.8953	0.6732	1,850
$x_2$ (organizational culture)	3.9567	0.7132	1,850
$x_3$ (organizational transformation)	4.0281	0.6313	1,850
$x_4$ (human capital empowerment)	3.9532	0.8132	1,850
$x_5$ (technology application)	3.7582	0.6423	1,850

Source: Calculation

**Table 2** Correlation Matrix of Exogenous Variables

	$x_1$	$x_2$	$x_3$	$x_4$	$x_5$
$x_1$ (learning dynamics)	1.000	0.432	0.321	0.281	0.425
$x_2$ (organizational culture)	0.432	1.000	0.352	0.382	0.412
$x_3$ (organizational transformation)	0.321	0.352	1.00	0.362	0.462
$x_4$ (human capital empowerment)	0.281	0.382	0.362	1.00	0.362
$x_5$ (technology application)	0.425	0.412	0.462	0.362	1.00

Source: Calculation

**Table 3** KMO and Bartlett's Test of Exogenous Variable

Kaiser-Mayer-Olin (KMO) Measure of Sampling Adequacy	0.853
Bartlett's Test of Sphericity Approx Chi-Square	283.236
Df	7
Sig	0.000

Source: Calculation

**Table 4** Communities of Exogenous Variables

	Initial	Extraction
$x_1$ (learning dynamics)	0.216	0.305
$x_2$ (organizational culture)	0.356	0.605
$x_3$ (organizational transformation)	0.286	0.505
$x_4$ (human capital empowerment)	0.386	0.625
$x_5$ (technology application)	0.362	0.614

Source: Calculation

**Table 5** The Rotated Factor Matrix of Exogenous Variables

	Factor	
	1	2
$x_1$ (learning dynamics)	.875	.065
$x_2$ (organizational culture)	.759	.089
$x_3$ (organizational transformation)	.679	.072
$x_4$ (human capital empowerment)	.676	.036
$x_5$ (technology application)	.758	.078

Extraction Method: Maximum Likelihood.

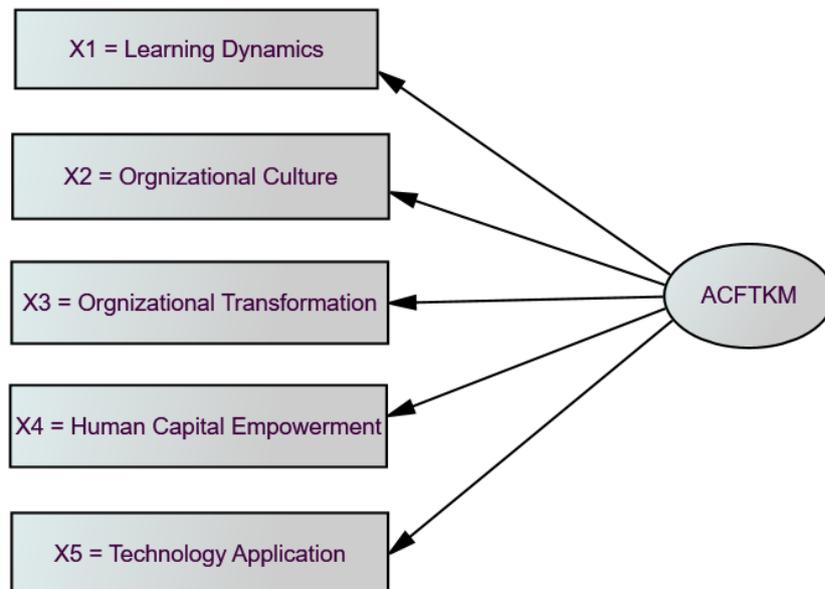
Rotation Method: Varimax with Kaiser Normalization.<sup>a</sup>

a. Rotation converged in 3 iterations.

**Table 6** The Initial Eigenvalues of Exogenous Variables

Factor	Initial Eigenvalues			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
1	1.921	48.032	48.032	1.420	35.502	35.502
2	1.826	25.125	73.157	.556	13.895	49.398
3	1.635	15.885	89.042			
4	1.438	10.958	72.690			
5	1.429	10.863	100.000			

According to Table 1, the average of exogenous variables ranged from 3.7582 - 4.0281, while the standard deviation ranged from 0.6423 - 0.8132, with 1,850 observations. Table 2 expressed that there had a mild correlation between 2 exogenous variables which were  $x_1$ (learning dynamics) and  $x_2$ (organizational culture) with the correlation value of 0.432, which was quite true for the case of the ACFT. In Table 3, the Kaiser-Mayer-Olin Measure of Sampling Adequacy value was shown up of 0.853, which means that the exogenous variables could explain this model by 85.30 percent, which was a good explanation. For Bartlett’s Test of Sphericity Approx Chi-Square, the value showed 283.236 with the statistical significance of 0.000. It was explained that the test of fit for these exogenous variables was suitable for this model (Finch, 2019; Kohl & Reisman, 1994; Fabrigar & Wegener, 1994; Schumacker, et al., 2015). In Table 4, the initial and extraction statistics of exogenous variables expressed from 0.216 to 0.386, meaning that all exogenous variables were suitable for the model building. So, the researcher should keep all of the exogenous variables ( $x_1 - x_5$ ) in the model (Kline, 2015). In Table 5, the rotated factor matrix expressed two categories of exogenous variables 1, 2. With the factor statistic comparison, the values showed statistical values of Categories 1 and 2. Obviously, in Category 1 the factor statistics were more significant than Category 2, which suggested the research to make only one category in the model (Kline, 2015). In Table 6, the initial eigenvalues of exogenous variables expressed the extraction sums of squared loadings with the cumulative percentage of 49.398. It means that in case the researcher divided the exogenous variables into two categories, then the exogenous variables could explain the model only 49.398 percent. Following the works of Kline (2015), he suggested that in case the cumulative percentage less than 0.50, then the researcher should not divide the exogenous variables. Therefore, the researcher designed to make exogenous variables; only one category showed in Figure 3 below.



**Figure 3** The Exploratory Factor Analysis of Exogenous Variables

For the Confirmatory Factor Analysis (CFA), it could be expressed in Table 7 below:

**Table 7** Confirmatory Factor Analysis (CFA) Indicators of Exogenous Variable ( $x_1$ -  $x_5$ )

Confirmatory Factor Analysis Indicators	Statistic	Criteria
Chi-square	3.842	< 5
Degree of Freedom (df)	3	
P-value	0.397	> .05
Root Mean Square Error of Approximation (RMSEA)	0.062	< .08
Goodness of Fit Index (GFI)	0.987	> .09
Comparative Fit Index (CFI)	0.987	> .09

Source: Calculation

According to Table 7, after the researcher made the CFA, so the next step of data analysis was constructed the Confirmatory Factor Analysis (CFA). It turned out with Chi-square statistic of 3.842 df = 3 p = 0.397, meaning that the Chi-square statistic was statistical insignificance ( $p > .05$ ). It implied that the CFA was suitable for the exogenous variables ( $x_1$ -  $x_5$ ). The Root Mean Square Error of Approximation (RMSEA) was 0.062. Kline (2015, pp. 212-216) gave the criteria for good RMSEA statistics was the range from .05 to .08. The output showed the RMSEA statistic of 0.062 which meant the CFA of the exogenous variables ( $x_1$ -  $x_5$ ) met the requirement, and all exogenous variables were suitable for the model. Besides, the goodness of fit statistic (GFI) and comparative fit index (CFI) was equal to 0.987 and 0.987, respectively. Kline (2015, pp. 212-216) suggested that the GFI and CFI should be higher than 0.90. The outputs showed both of GFI and CFI statistics were more significant than 0.90, which meant the all exogenous variables ( $x_1$ -  $x_5$ ) were suitable for the model.

### The Structural Equation Model (SEM)

The results of the structural equation model are shown in Tables 8 and 9 below.

**Table 8** The Estimated Parameters of Exogenous Variables by Structural Equation Model (SEM) Endogenous Variable = Cost Reduction

Exogenous Variables	Estimated Parameters	P-value
$x_1$ (learning dynamics)	$\widehat{\beta}_1 = 0.399$	.00001
$x_2$ (organizational culture)	$\widehat{\beta}_2 = 0.002$	.08450
$x_3$ (organizational transformation)	$\widehat{\beta}_3 = 0.010$	.15067
$x_4$ (human capital empowerment)	$\widehat{\beta}_4 = 0.0167$	.28067
$x_5$ (technology application)	$\widehat{\beta}_5 = 0.912$	.00001
R-square = 0.8752		
Number of Observations = 1,850		

Source: Calculation

**Table 9** the Structural Equation Model Fit Indicators for Knowledge Management of Human Capital through the Learning Organization of the Agricultural Federation of Thailand Limited

Structural Equation Model Fit Indicators	Statistic	Criteria
Chi-square	4.150	< 5
Degree of Freedom (df)	3	
P-value	0.674	> .05
Root Mean Square Error of Approximation (RMSEA)	0.00054	< .08
Goodness of Fit Index (GFI)	0.9643	> .09
Comparative Fit Index (CFI)	0.9710	> .09

Source: Calculation

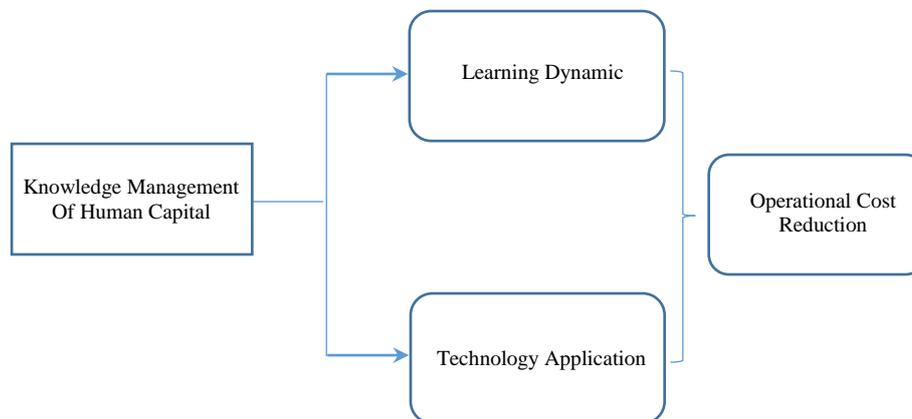
According to Table 8, as the output of the structural equation model (SEM), the exogenous variables, defined as the knowledge management of the ACFT, were comprised of  $x_1$  (learning dynamics),  $x_2$  (organizational culture),  $x_3$  (organizational transformation),  $x_4$  (human capital empowerment), and  $x_5$  (technology application) while the endogenous variable was determined as the cost reduction  $y_{61}$  of the

ACFT and  $E_1$  was the error term of the endogenous variable. The estimated coefficients of  $x_1$ ,  $x_2$ ,  $x_3$ ,  $x_4$ , and  $x_5$  were expressed as 0.40, -0.05, -0.19, -0.05, and 0.91. All estimated coefficients were statistically significant at 99 percent of the confidence interval, which means that all endogenous variables had an impact on the endogenous variable, the cost reduction ( $y_{61}$ ).

Following the research objective, the research results showed in Table 9 expressed the statistics of Chi-square, RMSEA, GFI, and CIF was equal to 4.150, 0.0054, 0.9643, and 0.971, respectively, meaning that the structural equation model constructed by the researcher was appropriated (Kline, 2015, pp. 235-240). Since the research objective attempted to find out the endogenous variables, which had a positive impact on the cost reduction of the ACFT. In other words, the researcher tried to investigate the positive impact of knowledge management factors that had a direct impact on the cost reduction of the ACFT. In the sense of positive or direct impact, it could be expressed that when the ACFT as an organization encourages these knowledge management factors, and then it would be led to the cost reduction of the ACFT. The research results expressed these two positive estimated parameters of endogenous variables, which were learning dynamics and technology application of knowledge management factors. The estimated parameters were calculated from the Structural Equation Model (SEM) expressed two coefficients of an exogenous variable-- learning dynamic ( $\widehat{\beta}_1$ ) = 0.399 and technology application ( $\widehat{\beta}_5$ ) = 0.912 of human capital in the ACFT. It meant that learning dynamic and technology application had positive influencing factors on the operational cost reduction of the ACFT. The researcher results were consistent with Cook & Leidner (2019) and Long (1997) who found that learning dynamics was the key factor for cooperating cost reduction since employees or human capitals whose encourage themselves to learn, study and apply new things in their life would be easier to understand and practice the way of cost reduction in the organization. Following Chareonwongsak (2017), who studied the enhancing board motivation for competitive performance of Thailand's cooperatives, found that learning dynamics and technology application had strongly influenced the competitive performances.

For the rest of 3 exogenous variables of knowledge management factors which were  $x_2$  (organizational culture),  $x_3$  (organizational transformation),  $x_4$  (human capital empowerment). The estimated parameters ( $\widehat{\beta}_2$ ), ( $\widehat{\beta}_3$ ) and ( $\widehat{\beta}_4$ ) were statistical insignificance ( $p > .05$ ), which meant that organizational culture, organizational transformation, and human capital empowerment had no impact or influenced on cost reduction of the ACFT. This research results had the contradictory output with Long, D. D. (1997, pp.3-7) who studied building the knowledge-based organization: how culture drives knowledge behaviors, stated that the organizational culture had affected on cooperating cost reduction. However, for the ACFT research results, the output was different. It was a possible reason to explain the different cultures between Thai and US-led to the different research outcomes. Also, in terms of organizational transformation, there was a small chance for the ACFT to transform its organizational structure since it was drawn by the Thai cooperative act, which legislated by the Royal Thai government. Human capital empowerment in cooperatives would be the key factor for its performance (Chareonwongsak, K., 2017, pp.5-8). In this study, the human capital empowerment did not effect cost reduction. The possible reason to explain would be that the majority of agricultural cooperatives' members live with farming ways. Most of the time the authority of cooperative administration depended on the committees or the cooperative board (Chareonwongsak, 2017)

According to the research results, it is shown that among five exogenous variables which were  $x_1$ (learning dynamics),  $x_2$ (organizational culture),  $x_3$ (organizational transformation),  $x_4$ (human capital empowerment) and  $x_5$ (technology application). In terms of knowledge management (KM), there were only two exogenous variables had statistically significant (Table 7). The 1<sup>st</sup> variable was learning dynamics, and the 2<sup>nd</sup> variable was technology application, which had a direct positive influence on cost reduction. In the way of simple explanation, the research outcome could be drawn as the figure 4 below, for the expression of figure 4, it expressed that the knowledge management of human capital through the learning organization paradigm of the Agricultural Cooperative Federation of Thailand Limited (ACFT) should be emphasized on two dimensions of knowledge management which were learning dynamics and technology application as shown in figure 4. In terms of research output application, the ACFT and other agricultural cooperatives can make the drawn picture below as a simple application of KM.



**Figure 4** the Results of Knowledge Management of Human Capital through the Learning Organization of the Agricultural Cooperative Federation of Thailand Limited

## 5. Conclusion

The Agricultural Cooperative Federal of Thailand Limited (ACFT) (2019) is an organization performed as a non-profit organization which has mainly concerned on the human capital development and the organizational cost reduction through the concept of the learning organization. Knowledge management (KM) of the human capital of the Agricultural Cooperative Federation Thailand limited (ACFT) is the main strategy of human capital development following the concept of the learning organization. Two categories of knowledge management in the ACFT, which comprised of 1) learning dynamic and 2) technology application, had a significantly positive impact on operational cost reduction of the ACFT. According to the research results, the ACFT should have its strategy to encourage and support human capital to get involved in learning's dynamic behavior through life-long learning. Also, the ACFT would have the strategy of technology application to support its business operation.

Technology utility in the ACFT is considered one of the important know-how management for human capital. Technology application also allows creating much less costly, environment, and purchaser friendly solutions. The technology application is applied in the enterprise to have a focus on the day by day life problem-solving. Technology application which comprised of artificial intelligence, cloud technology, machine learning, blockchain, robots, the internet as well as digital marketing. Those functioned as a part of the innovation and problem base solving methodology in organizations (Sharma, 2019; Chareonwongsak, 2001; Cook & Leidner, 2019). According to the studies of Kolb, Ho, Mancini, & Gary (2011) and Bhatt (2001), they stated that technology application had a strong influence on cost reduction. With the time dimension change, human beings would concern with cost reduction by technology substitution to reduce cost and energy consumption. Technology applications would be a part of the human being.

## 6. Acknowledgments

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**Appendix**

The name of Agricultural Cooperative Limited	Numbers of Population				Numbers of Samples			
	Cooperative Committee	Cooperative Officers	Cooperative Members	Total Numbers	Cooperative Committee	Cooperative Officers	Cooperative Embers	Total Numbers
The Agricultural Cooperative Federation of Thailand Limited	17	51		68	10	40		50
Sainoi Agricultural Cooperative Limited	12	13	1,997	2,022	2	3	195	200
Bangkuay Agricultural Cooperative Limited	9	4	1,242	1,255	2	3	195	200
Bang Bua Thong Agricultural Cooperative Limited	11	7	1,057	1,075	2	3	195	200
Pakkred Agricultural Cooperative Limited	13	7	1,592	1,612	2	3	195	200
The Nonthaburi Customers' Agricultural & Cooperative Bank limited	12	10	5,403	5,425	2	3	195	200
Mueang Nonthaburi Agricultural Cooperative Limited	10	5	663	678	2	3	195	200
The Pathum Thani Customers' Agricultural & Cooperative Bank limited	13	12	9,348	9,373	2	3	195	200
Mueang Pathum Thani Agricultural Cooperative Limited	7	4	319	330	2	3	195	200
The Bangkok Customers' Agricultural and Cooperative Bank limited	12	9	5,327	5,348	2	3	195	200
Total	116	122	26,948	27,186	28	67	1,755	1,850





## APPENDIX A

### RANGSIT JOURNAL OF SOCIAL SCIENCES AND HUMANITIES (RJSH)

#### ACKNOWLEDGEMENTS

The launch issue of the RANGSIT JOURNAL OF SOCIAL SCIENCES AND HUMANITIES (RJSH) would have been difficult without the assistance and efforts of many competent people who graciously lent their support. The Editor would like to thank all the reviewers who have given so generously of their time to assess manuscripts submitted to the Journal for the period January to June 2020. The Editor is grateful for their advice and for their promptness in dealing with the manuscripts. The following is a list of acknowledgments of those who offered expert counsel and guidance on a voluntary basis, reviewed manuscripts, contributed manuscripts, or provided other means of assistance.

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## APPENDIX B

### RANGSIT JOURNAL OF SOCIAL SCIENCES AND HUMANITIES (RJSH)

#### NOTE FOR AUTHORS

##### 1. Aims and Scope

*Rangsit Journal of Social Sciences and Humanities (RJSH)* is a multidisciplinary international scholarly journal that aims to provide a high profile vehicle for publication of various new issues in different academic areas. The scope of the *Journal* encompasses, but not limited to Interdisciplinary Studies in Humanities and Social Sciences, any of the following areas:

##### **Social Science**

Criminal Justice  
Economics  
Social Innovation  
Political Science

##### **Humanity**

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Language  
Arts & Design

##### 2. Submission Deadline

Submissions are to be permanently open. A manuscript submitted between July 1<sup>st</sup> and December 31<sup>st</sup> will be considered for publication in the January-June Issue of the subsequent year whereas a manuscript submitted between January 1<sup>st</sup> and June 30<sup>th</sup> will be considered for publication in the July-December Issue.

##### 3. Categories of Articles

The *Journal* accepts the following types of articles:

1. **Research Articles:** A research article is a regular quantitative or qualitative article which aims to present new findings or interpretations.
2. **Notes or Address:** A brief record of something or speech written down that presents important issues.
3. **Review Articles:** There are two types of review articles: non-systematic (or journalistic) reviews and systematic reviews. Non-systematic or journalistic reviews provide a summary of evidence derived from primary studies that have been selected and synthesized according to the author's personal and professional perspective. Non-systematic reviews can cover a wide range of subject matter at various levels of totality and comprehensiveness. Systematic reviews, on the other hand, provide summaries of related primary studies that have been searched for, evaluated, and selected and reported according to a rigorous methodology.
4. **Innovations:** An innovation is an article which aims to present creative arts and designs, procedures or devices.
5. **Comments or Critiques:** A comment or critique is a short article that makes comments or replies to a comment on another article already published by this Journal.
6. **Book Reviews:** A book review is a short article that is written by a specialist and read by the general community. The aim of a book review is to give a brief summary of the book's strengths and weaknesses and to evaluate the book's overall usefulness to the audience it is intended for.

Research articles, review articles, and innovations should not exceed 15 pages of standard A4 paper using *RJSH* format. Notes, comments or critiques, and book review should not exceed 5 pages. Template for research articles is available at <https://rjsh.rsu.ac.th>. All categories of articles must coincide with manuscript preparation instruction (see Manuscript Preparation Section).

#### 4. Editorial Policies

*RJSH* accepts only the work that has not been published; that is not under consideration for publication, elsewhere; and that its publication has been approved by all co-authors and the relevant authorities responsible at the institute where the work was conducted. Submission also implies that the authors have already obtained all necessary permissions for the inclusion of copyrighted materials, such as figures and tables from other publications. Previously published work will not be considered for publication. Submitting a copied piece of writing as one's own original work is considered plagiarism. The *Journal* is published by Rangsit University Press, Thailand. Contributions are in English. Copyright is by the publisher and the authors.

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Cochrane, A. (2007). *Understanding urban policy: A critical approach*. Malden, MA: Blackwell Publishing.

Palmer, G. R., & Short, S. D. (2010). *Health care and public policy: An Australian analysis* (4th ed.). South Yarra, VIC: Palgrave Macmillan.

Bulliet, R. W., Crossley, P. K., Headrick, D. R., Hirsch, S. W., Johnson, L. L., & Northrup, D. (2011). *The earth and its peoples: A global history* (5th ed.). Boston, MA: Wadsworth.

### **Chapter in edited book**

Richards, K. C. (1997). Views on globalization. In H. L. Vivaldi (Ed.), *Australia in a global world* (pp. 29-43). North Ryde, Australia: Century.

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O'Neil, J. M., & Egan, J. (1992). Men's and women's gender role journeys: A metaphor for healing, transition, and transformation. In B. R. Wainrib (Ed.), *Gender issues across the life cycle* (pp. 107-123). New York, NY: Springer.

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#### **Example:**

Tester, J. W. (2008). The future of geothermal energy as a major global energy supplier. *Proceedings of the Sir Mark Oliphant International Frontiers of Science and Technology Australian Geothermal Energy Conference*, Canberra, Australia: Geoscience Australia. Retrieved from [http://www.ga.gov.au/image\\_cache/GA11825.pdf](http://www.ga.gov.au/image_cache/GA11825.pdf)

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Norasingha, A. (2009). *Expression and distribution of mucorinic receptors in hepatic composite of the cirrhotic rat* (Master's thesis). Rangsit University, Pathum Thani.

### **Editorials**

Author./ (Year of publication)./Title of Editorial (editorial)./Journal Title,/ Volume(Issue),/Page numbers.

#### **Example:**

Fisher, R. I. (2003). Immunotherapy in Non-Hodgkin's lymphoma: Treatment advances (editorial). *Semin Oncol*, 30(2Suppl 4), 1-2.

### **Journal Articles**

Author./ (Year of publication)./Article Title./Journal Title,/ Volume(Issue),/Page numbers.

**Example:**

- Leelawat, S., Leelawat, K., Narong, S., & Matangkasombut, O. (2010). The dual effects of delta 9-tetrahydrocannabinol on cholangiocarcinoma cells: Anti-invasion activity at low concentration and apoptosis induction at high concentration. *Cancer Investigation*, 28(4), 357-363.
- Polk, A., Amsden, B., Scarrrt, D., Gonzal, A., Oknamefe, O., & Goosen, M. (1994). Oral delivery in aquaculture. *Aquacult. Eng*, 13, 311-323.
- Seals, D. R., & Tanaka, H. (2000). Manuscript peer review: A helpful checklist for students and novice referees. *Advances in Physiology Education*, 23(1), 52-58.
- Srichandum, S. & Rujirayanyong, T. (2010). Production scheduling for dispatching ready mixed concrete trucks using bee colony optimization. *American J. of Engineering and Applied Sciences*, 3(1), 823-830.

**Letters**

Author./ (Year of publication) ./ Title of Letter ./ *Journal Title* ./ Volume(Issue) ./ Page number.

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- Enzensberger, W., & Fisher, P. A. (1996). Metronome in Parkinson's disease (letter). *Lancet*, 347, 1337.

**Notes**

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**Example:**

- Haier, R. J., Schroeder, D. H., Tang, C., Head, K., & Colom, R. (2010). Gray matter correlates of cognitive ability tests used for vocational guidance. *Biomed Central*, 3, 206.

**Unpublished/In Press Articles**

Author./ (In press Year) ./ Article Title ./ *Journal Title* ./ (in press).

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- Veena, B. (2004). Economic pursuits and strategies of survival among Damor of Rajasthan. *J Hum Ecol*. (in press).

**Internet periodicals**

Author./ (Year of publication) ./ Article Title ./ *Journal Title* ./ Volume(issue) ./ page numbers ./ Retrieved mm dd, year, from the full URL of the web page

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- Adams, P. J. (2000). Australian economic history. *Journal of Australian Economics*, 5(2), 117-132. Retrieved June 12, 2001, from <http://jae.org/articles.html>

**Internet non-periodicals**

Author./ (Year of publication) ./ Article Title ./ Retrieved mm dd, year, from the full URL of the web page

**Example:**

- Lemire, D. (n.d.). *Write good papers*. Retrieved July 1, 2010, from <http://www.daniel-lemire.com/blog/rules-to-write-a-good-research-paper>

**Newspaper retrieved from a database**

**Article – with an author**

Author./ (mm dd, Year) ./ Article Title ./ *News agency* ./ Retrieved from the full URL of the web page

**Example:**

- Darby, A. (August 20, 2002). Rarest tiger skin a rugged survivor. *Sydney Morning Herald*. Retrieved from <http://www.smh.com.au>

**Article – without an author**

Article Title./ (mm dd, Year) ./ *News agency* ./ Retrieved from the full URL of the web page

**Example:**

Rarest tiger skin a rugged survivor. (August 20, 2002). *Sydney Morning Herald*. Retrieved from <http://www.smh.com.au>

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**Tables:** Tables must be cell-based without vertical lines. They should be produced in a spreadsheet program such as Microsoft Excel or in Microsoft Word. Type all text in tables using 9-point font or less. Type the caption above the table to the same width as the table. Insert tables and table captions into the main text. Tables should be numbered consecutively. Footnotes to tables should be typed below the table and should be referred to by superscript numbers. Submit separate files of tables in their original file format and not as graphic files in addition to incorporating in the main text. Tables should not duplicate results presented elsewhere in the manuscript (e.g., in graphs).

**Proofs:** Proofs will be sent to the corresponding author by PDF wherever possible and should be returned within 1 week of receipt, preferably by e-mail. Corrections must be restricted to typesetting errors. It is important to ensure that all of your corrections are returned to us in one all-inclusive e-mail or fax. Proofreading is solely the responsibility of the author(s). Note that *RJSH* may proceed with the publication of your article if no response is received in time.

**Reprints:** Authors will receive free copy of the journal in which their work appears.

**English Language Editing before Submission:** Authors for whom English is a second language may choose to have their manuscript professionally edited before submission.

## **6. Manuscript Submission**

Manuscripts should be submitted electronically to the Editor-in-Chief as an attachment via the RJSH submission system, in word processing format. The *RJSH* submission form must be completed. Included in the submission form are (a) the title and authors, (b) complete contact information for the corresponding author (mailing address, e-mail address, and telephone and fax numbers), (c) confirmation of the originality of the reported work, (d) approval of the submitted version of the manuscript by all authors, and (e) the authors' consent for publication in *RJSH*, if accepted. The submission form is available at <https://rjsh.rsu.ac.th>.

## 7. Manuscript Revision and Re-submission

There are four editorial decisions: Accept, Accept with Minor Revision, Resubmit with Major Revision, and Reject. A Reject decision is definitive and authors may not submit a new version of the manuscript to the *RJSH*. A Resubmit with Major Revision requires a major re-write of the manuscript and/or inclusion of significant new data, and thus the creation of a new manuscript, which will thus be assigned a new submission date. An Accept with Minor Revision decision implies that the paper can, in principle, attain the required standard of the *Journal* without major change. Editors may or may not have a revised manuscript reviewed (generally, by the original reviewers), in order to ascertain whether changes to the original manuscript adequately responded to the criticisms. If changes made do not result in a paper of the required standard, the revised manuscript will be definitively rejected. If a revised manuscript of “Accept with Minor Revision” is accepted, the original submission date will be retained.

## 8. Copyright Agreement

Once a manuscript is accepted for publication, authors will be required to sign a Copyright Transfer Agreement form (CTA). CTA is available at <https://rjsh.rsu.ac.th>. Signature of the CTA is a condition of publication and papers will not be passed for production unless a signed form has been received. Please note that signature of the Copyright Transfer Agreement does not affect ownership of copyright in the material. Please submit the completed form with the final version of the manuscript back to the *RJSH* submission system.

## 9. Further Reading

The following resources will provide valuable guidelines for the preparation of manuscripts.

Anonymous. (n.d.). How to write abstract. Retrieved January 17, 2011, from

[http://www.journal.au.edu/au techno/2006/jan06/vol9num3\\_howto.pdf](http://www.journal.au.edu/au techno/2006/jan06/vol9num3_howto.pdf)

Anonymous. (n.d.). How to write an abstract: Links and tips. Retrieved January 17, 2011, from

<http://research.berkeley.edu/ucday/abstract.html>

Koopman, P. (n.d.). How to write an abstract. Retrieved January 17, 2011, from

<http://www.ece.cmu.edu/~koopman/essays/abstract.html>

Lemire, D. (n.d.). Write good papers. Retrieved January 17, 2011, from <http://lemire.me/blog/rules-to-write-a-good-research-paper/>

Plonsky, M. (n.d.). Psychology with style: A hypertext writing guide. Retrieved January 17, 2011, from <http://www.uwsp.edu/psych/apa4b.htm>

Seals, D. R., & Tanaka, H. (2000). Manuscript peer review: A helpful checklist for students and novice referees. *Advances in Physiology Education*, 23(1), 52-58.

Jones, A., & Pham, H. (n.d.). Basic Referencing using the APA System, Teaching and learning unit, Faculty of Economics and Commerce, The University of Melbourne. Retrieved February 15, 2011, from <http://www.scribd.com/doc/57603066/A-Pa-Style>





## APPENDIX C

### RANGSIT JOURNAL OF SOCIAL SCIENCES AND HUMANITIES (RJSH)

#### *Research Article Single-Column Template*

Please note that the paper size is standard A4 size (approx 8.27 x 11.69 in)

**Type your title here using 11-point Times New Roman bold font on 12-point line spacing.  
The length of the title of the article must not exceed 2 lines.**

Author Names (Use 10-point Times New Roman font on 11-point line spacing.

Begin with the first name of the author followed by the last name. For more than one author, type 'and' before the last author's name. For more than two authors, also separate each name by a comma (,).

Identify each author's affiliation by superscript numbers at the end of the author's last name.)

Author Affiliations (Use 9-point Times New Roman font on 10-point line spacing.

Include institutional and e-mail addresses for all authors. Place superscript number in front of author's affiliation corresponding to author's name.)

Received date month year / Revised date month year / Accepted date month year / Publish Online date month year

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#### **Abstract (10-point bold font on 11-point line spacing)**

For abstract content, use 9-point Times New Roman font on 11-point line spacing. First line is indented 0.5 inch. An abstract of up to 250 words must be included. Include your major findings in a useful and concise manner. Include a problem statement, objectives, brief methods, results, and the significance of your findings.

**Keywords:** List up to 6 keywords and separate each keyword by a comma (,). The keywords should accurately reflect the content of the article. The keywords will be used for indexing purposes.

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#### **1. Introduction**

The actual manuscript will be published in a single-column style in the RJSH journal. This single column template is adopted as a user friendly format. Thus, with this template, the main text is set in a single column. Type text with 10 point Times New Roman font on 12 point line spacing, with a 1.25 inch left margin, 1 inch bottom and right margin, 2 inch top margin, 1.2 inch header, and 0.6 inch footer. First lines of paragraphs are indented 0.5 inch. Please note that the paper size is standard A4 size (approx 8.27 x 11.69 in). In MS Word, select "Page Layout" from the menu bar, and under Paper Size select A4 Size.

The introduction should put the focus of the manuscript into a broader context. As you compose the introduction, think of readers who are not experts in this field. Include a brief review of the key literature. If there are relevant controversies or disagreements in the field, they should be mentioned so that a non-expert reader can find out about these issues further. The introduction should conclude with a brief statement of the overall aim of the experiments.

To insert a citation in the text use the author-year system, i.e., the author's last name and year of publication. Examples are as follows: "Since Johnson (2008) has shown that..." or "This is in agreement with results obtained later (Benjamin, 2010)". For 2-3 authors; all authors are to be listed, with "and" separating the last two authors, for more than three authors, list the first author followed by et al. The list of references should be arranged alphabetically by authors' names. All publications cited in the text should be presented in a list of references following the text of the manuscript. The manuscript should be carefully checked to ensure that the spelling of authors' names and dates are exactly the same in the text as in the reference list. Responsibility for the accuracy of bibliographic citations lies entirely with the author(s). Citation of a reference as "in press" implies that the item has been accepted for publication. Authors are responsible for the accuracy of the content of the references.

## 2. Objectives

The objectives of the study should be specified explicitly.

## 3. Materials and Methods

This section should provide enough detail to allow full replication of the study by suitably skilled investigators. Protocols for new methods should be included, but well-established protocols may simply be referenced.

## 4. Results

The results section should provide details of all of the experiments that are required to support the conclusions of the paper. There is no specific word limit for this section. The section may be divided into subsections, each with a concise subheading. The results section should be written in past tense.

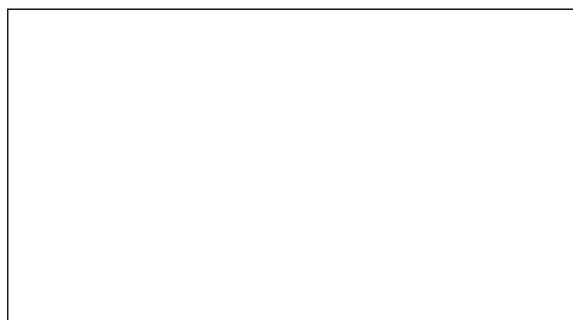
Tables must be cell-based without vertical lines. They should be produced in a spreadsheet program such as Microsoft Excel or in Microsoft Word. Type all text in tables using 9-point font on 10-points line spacing. Type the caption above the table to the same width as the table.

Tables should be numbered consecutively. Footnotes to tables should be typed below the table and should be referred to by superscript numbers. Submit separate files of tables in their original file format and not as graphic files in addition to incorporating in the main text. Tables should not duplicate results presented elsewhere in the manuscript (e.g., in graphs).

**Table 1** Table caption

C1	C2	C3	C4
R1			
R2			
R3			
R4			
R5			
R6			

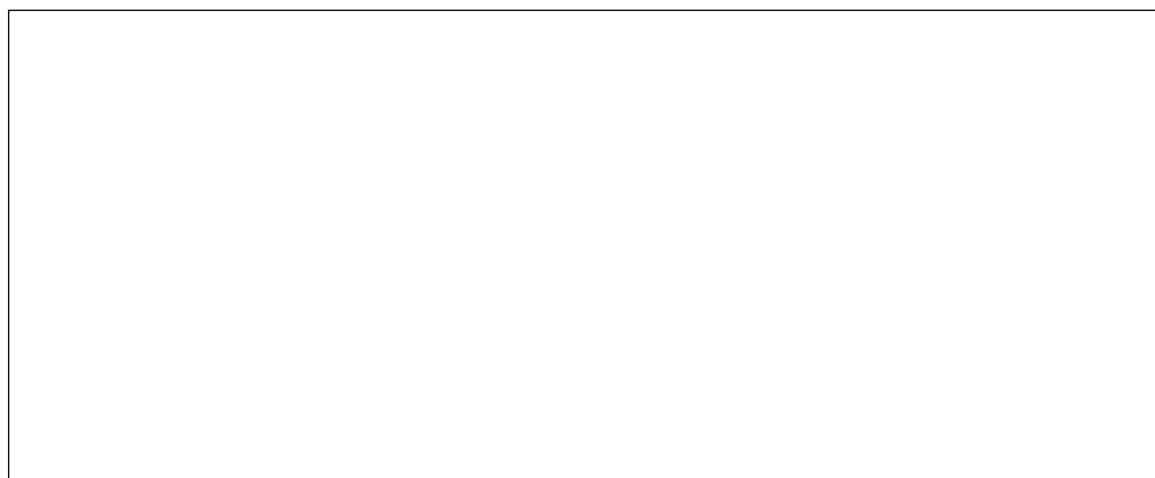
If figures are inserted into the main text, type figure captions below the figure. In addition, submit each figure individually as a separate file. Figures should be provided in a file format and resolution suitable for reproduction, e.g., EPS, JPEG or TIFF formats, without retouching. Photographs, charts and diagrams should be referred to as "Figure(s)" and should be numbered consecutively in the order to which they are referred



**Figure 1** Figure caption

**Table 2** Table caption

C1	C2	C3	C4	C5	C6	C7
R1						
R2						
R3						
R4						
R5						
R6						
R7						
R8						
R9						
R10						

**Figure 2** Figure caption

## 5. Discussion

The discussion should spell out the major conclusions of the work along with some explanation or speculation on the significance of these conclusions. How do the conclusions affect the existing assumptions and models in the field? How can future research build on these observations? What are the key experiments that must be done? The discussion should be concise and tightly argued. Conclusions firmly established by the presented data, hypotheses supported by the presented data, and speculations suggested by the presented data should be clearly identified as such. The results and discussion may be combined into one section, if desired.

## 6. Conclusion

The Conclusion section restates the major findings and suggests further research.

## 7. Acknowledgements

People who contributed to the work but do not fit criteria for authorship should be listed in the Acknowledgments, along with their contributions. It is the authors' responsibility to ensure that anyone named in the acknowledgments agrees to being so named. The funding sources that have supported the work should be included in the acknowledgments.

## **8. References**

*RJSH* uses the American Psychological Association (APA) referencing style, details of which can be found at <http://www.apastyle.org/>. References are arranged alphabetically according to the last names of the authors and then chronologically. The first line of each reference is aligned left. Use hanging style of 0.5 inch after the first line of each reference. Example of APA references format exists at appendix B.



APPENDIX D

RANGSIT JOURNAL OF SOCIAL SCIENCES AND HUMANITIES (RJSJ)
MANUSCRIPT SUBMISSION FORM

Type of submitted article: [Mark (✓) the appropriate choice]

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## APPENDIX E

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