

**MANAGEMENT OF BLOOD DONATION: A CASE STUDY OF  
NATIONAL BLOOD CENTRE OF THAILAND**

**Benjamaporn Dhanakoses**

**A Dissertation Submitted in Partial  
Fulfillment of the Requirements for the Degree of  
Doctor of Philosophy (Development Administration)  
School of Public Administration  
National Institute of Development Administration  
2016**

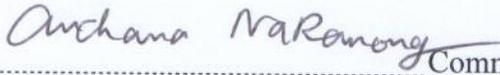
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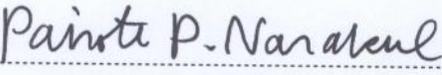
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## **ABSTRACT**

<b>Title of Dissertation</b>	Management of Blood Donation: A Case Study of National Blood Centre of Thailand
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The National Blood Centre (NBC) of Thailand is the major blood supplier for hospitals in Thailand with the responsibility of acquiring at least 1,500 units of blood per day from blood donation. This research mainly aims to search for the NBC's management of blood donation, both in normal and unexpected situations, through interviews. The study also searches for the most important motives enhancing blood donation during unexpected events by employing a questionnaire.

It found that NBC's management of blood donations reveals special concepts beyond general blood donation management compared to other countries in the world. The generousness of people in the country results from the traditional way of life, as well as the "sufficiency economy" philosophy of King Bhumibol Adulyadej playing a key role toward the management of blood donations, both in normal situations and uncertainties. No matter how many times NBC has faced uncertainty, the management of blood donations is always effective.

The three most important motives enhancing blood donations during uncertainty are (1) awareness of the need for blood, preparation, and benefits through social media, (2) many convenient places for blood donations besides NBC, and (3) sufficient parking spots for blood donors. These motives are derived from the attitude of blood donors by applying Kruskal Wallis and Mann-Whitney's approaches.

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Benjamaporn Dhanakoses

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## **ABBREVIATIONS**

### **Abbreviations**

BDC

CMP

CMT

NAT

NBC

PBT

WHO

### **Equivalence**

Blood Donation Center

Crisis Management Plan

Crisis Management Team

Nucleic Acid Testing

National Blood Centre

Planned Behavior Theory

World Health Organization

# CHAPTER 1

## INTRODUCTION

### 1.1 Background

There are many causes of how people become sick or injured, and which require blood transfusions. Some people pass away while others may survive because of effective medical treatment that could cure them. Blood transfusion is one of what is necessary and important for medical treatment. The new technology of advanced medical care and the increasing population of an aging society also generates a higher need for blood. It turns NBC whether it is able to meet the demand of the hospitals or not.

The improvement of the surrounding society contributes to a better quality life and higher life expectancy, which is a great benefit for the society; however, there is also a concern for unexpected circumstances, for instance, an accident or medical care that always needs a blood transfusion. As a result, BDC needs to find an appropriate way to adequately support the needs for blood of a particular society.

Worldwide, BDCs follow the instructions of WHO which states that all blood collection must be received from voluntary blood donors without remuneration. This is the main topic that links to the management of blood donations and for acquiring sufficient blood donations. Each country has different management approaches for blood donation on account of the culture, beliefs, and so forth. Some countries use remuneration to stimulate blood donation, while others merely create awareness for the need for blood (Linden, Gregorio, & Kalish, 1988).

NBC of Thailand is one BDC that manages blood donations without offering remuneration to blood donors, following WHO's approach. In fact, NBC of Thailand has to respond to the increasing demand for blood from hospitals in which its provisions of blood provision is not manage in order to meet the daily demand sufficiently. The NBC, however, needs to achieve the daily target to support the hospitals' demand adequately.

NBC is a non-profit organization that is a major provider of medical services in supporting the demand for blood from hospitals in Thailand. The management of blood donations of NBC of Thailand is majorly supported by the sympathy of people in the country.

Sometimes the regular management approach of blood donation has to be changed according to the situation. If the situation is unusual, the routine activities have to change by following the manual of uncertainty management, whereas the unexpected situation that cannot follow the manual occurs, the contingency approach is requested. And hence, it seems to be a tough time for NBC to deal with the kind of situation that results in insufficient blood donations, particularly during an uncertain time that contributes negative impacts on the dysfunctional performance leading to unsatisfying outcomes of blood supply for the whole country (Thai Red Cross Society, 2013).

Normally, NBC is responsible for providing 1,500 units of blood per day, or at least 45,000 units monthly, to Thailand's hospitals. Everyday NBC has to collect various blood types in which A & B blood groups require the same quantity, AB blood group requires the lowest quantity compared to other blood types, and O blood group requires highest number of blood units (Thai Red Cross Society, 2013).

On normal days, the blood provided has never fulfilled the real needs for blood of many hospitals in Thailand as different places have different demands for blood. This shows that blood supply is insufficient, especially in the time of uncertainty when the blood supply seems to be hardly managed like everyday that it can do things properly without disruption. It challenges the total performance of NBC in dealing with blood donation management in time of uncertainty impacting the number of collected blood units. Blood donation management without the preparation of unexpected circumstances, the would not easily achieve the goal definitely. Therefore, there needs to be an analysis of the management of blood donation in order to determine the implemented approach in normal and unexpected times, as well as have insight of the important motives that enhance the effective management of blood donation.

The authorized decision-makers should gain advantages from this paper when they consider the real needed issues regarding better management of blood donations

after understanding the viewpoints of front-line officers. Moreover, it also leads to prompt management of blood donations for both general and particular circumstances that NBC does not frequently face. And thus, what NBC needs to emphasize for going through the crucial time of any uncertainty is necessary to cover all main issues that effectively have the impacts on sustainable blood supply for the whole country.

Hopefully, this study could provide knowledge regarding management of blood donations for better handling blood collection, even through the time of uncertainty. Uncertainty, more or less, could be a fertile opportunity for the top management level to learn and adjust the organizations to fit with the situation. However, there are theories of management in time of uncertainty suggesting about the ad hoc team for unexpected events in which the team requires being equipped with the right tools to handle the unexpected event effectively for changing the worse situation to be a great opportunity. In other words, it refers to appropriately have the right motives for enhancing the organization's performance that could also assist the organization to survive during a rough time of uncertainty (Altshuler, 1965).

There are various motives that NBC can apply to prevent and cope with the unexpected impacts on management of blood donations. The critical motives for maintaining blood donations through any circumstance are the issues that NBC should pay more attention to assure that the goals can be achieved efficiently. These especially refer to the relevant motivators for enhancing blood donation during a time of unrest. The motives enhancing the effective blood donation management for NBC are generally known as the critical motives of blood donation that positively enhance the management of blood donation during uncertainty, as well as supporting blood provisions to be more effective. Iowa State University (2001) asserted that the critical motives could help organizations handling their performances during the unexpected time to meet the goals in which this study refers to the ones motivating people to donate blood that also links to the well-being of the whole country. And thus, the author aims to search for the motives that contribute the effective management of blood donation, particularly in Thailand during uncertainty periods.

All the above background mentioned about the management of blood donations will be a great benefit in conducting the research that aims to study the management of blood donations of NBC in the general and unexpected times together

with the motives that support the management of blood donations for NBC in Bangkok, Thailand, which plays an important role in providing blood supply for the whole country. The study also would like to provide the lesson learned in handling uncertainty, particularly in the different implementation approach from the existing manual, and also provide suggestions that may benefit the particular organizations which have limited budgets to cope with uncertainty.

The purpose of this study is exclusively to illustrate the emergence of a social science study undertaken in Thailand about the management of blood donations, particularly focusing on the handling with the various situations influencing the daily activities of NBC. In addition, this paper will analyze the effectiveness of the implemented approach regarding management of blood donations and determine the crucial motives that guide NBC to pay more attention to manage the performances and services of blood donations effectively through any events.

This study would also guide NBC to consider the suggestion of officers that may impact on overall management of blood donations during normal and unexpected situations in order to sustain and enhance the blood donations to achieve the goals through all periods of time, rather than letting things happen negatively which affect the blood donation's daily activities. However, this paper cannot conclude that the research finding is the most perfect solution for dealing with all circumstances as it is impossible to do so (Innes, 1996) since there are various practices, ideas and key issues have been developed, as well as the elaboration of literatures has always been updatede.

The author has read through many empirical literatures; nevertheless, it found that the previous scholars' work regarding the management did not specifically focus on how to utilize the critical motives for an organization's effective performance, particularly on the situation of NBC during uncertainty. Those scholars mostly addressed general organization management rather than the issues involving non-profit organization management. Particularly on blood donation, no one worked on the issue regarding the sustainable performance and the key motives enhancing the effective management for organization, especially on the management of blood donations in an emergency that cannot follow the organization's manual. Political unrest in Thailand in 2010 caused uncertainty for NBC in which it had a different

coping strategy compared to other situations of uncertainty that can follow the manual of handling uncertainty. This study would explore how NBC managed the blood donation during that time.

Meanwhile, this topic seems to be more influential and beneficial to many organizations nowadays as they can learn about the management from the case of NBC, even though some characteristics are different from other organizations. Thus, they can learn how the different types of organizations with limited budgets can manage its key performance adequately to be successful, particularly from a non-profit organization that has an impact on the whole country like NBC. Moreover, there is no study particularly on enhancing blood donation management during uncertainty in the case of different handling from the existing manual which organizations could consider as a guideline for supporting the preparation of unexpected events. The author is interested in the application of management theories, including general management and uncertainty management, with the unique characteristics of non-profit organization as NBC. The ways that NBC handles every situation should be considered for whether the theories of management can be applied. The problems and obstacles that NBC faces during unexpected events, as well as the suggested solution would also be explored. Hopefully, the given purposes of the study would be the advantages to other researchers and any people who are interested in this issue.

## **1.2 Problem Statement**

There is not only accidents, but also other causes that always require blood transfusions. This turns the point back to the management of blood donations, and how NBC could manage the adequate amount of blood units sufficiently each day to support the whole country.

As a matter of fact, it is difficult to acquire the needed amount of blood donation in every situation as the surrounding environment and circumstances are unpredictable. There are also unexpected events like natural disasters, quarrels and fighting among people in society that create a higher demand for blood, and making the management of blood donations harder. NBC, however, still keeps dealing with

the fluctuating daily demand in the country. Thereby, the effectiveness of blood donation management is very important to see how NBC could sufficiently meet the actual daily demands for blood.

Nowadays, the world has been moving forward. The old things go by and new things come after. Many things have been changing rapidly like the new technology, increasing infrastructures, advanced medical treatment, haste of life, and an emergence of aging society. As mentioned, these are the major causes that request more blood transfusions to support ones' lives. Hence, it is very important to consider how NBC could manage blood donations to meet the real needs for blood efficiently everyday.

According to a literature review of blood donation management in various countries, the demands of blood transfusions have never matched with the blood supply due to many reasons as they have been mentioned previously. In other words, the blood supply hardly meets the actual demand for blood everywhere in the world (Royse & Doochin, 1995).

Normally, NBC has to collect a minimum 1,500 blood units per day, or 45,000 units every month, for distributing to the hospitals in Thailand. In the case of an unexpected event, suppose that it cannot collect the minimum number of units of blood , it would be considered as insufficient. However, in normal time, the units collected daily are sufficient. Conversely, in the time of unexpected events, sometimes the number of collected blood units goes over the targeted number but sometime it does not even reach 10 units of blood as in the situation of political unrest in 2010 (Thai Red Cross Society, 2013); it raises a concern of how NBC adapts the management to fit with any situation.

From NBC's information, 77% of collected blood units would used to support the needs for blood in various situations (e.g. accident, surgical operation, childbirth, gastritis, etc.), and the rest 23% for supporting the treatment of specific diseases like Thalassemia, Thrombocytopenia, and Hemophilia.

Moreover, the daily goal of NBC is to collect different types of blood units efficiently according to the demands of which everyday blood groups of A and B require 400 units, blood group of AB requires 100 units, and blood group of O requires 600 units (Thai Red Cross Society, 2013).

It is not every day that all blood types can be collected sufficiently, especially during the unexpected times as the numbers of collected blood groups vary with the different blood types of blood donors. These statements also reflect the management of blood donations of NBC that is not a simple issue to handle all demands for blood to be met perfectly.

The above statements are the crucial task for NBC to achieve the daily target in which sometimes it is difficult to collect when the unexpected events occur. There are two kinds of unexpected events that affect the blood donation of NBC: firstly is too many blood donors, and secondly is small number of blood donors.

Particularly, in time of uncertainty like the tsunami in 2004 and the bombing at Ratchaprasong square, these circumstances stimulate a lot of people to donate blood at NBC over the capacity of available resources (Thai Red Cross Society, 2013). This overwhelming number of blood donors is opposite to some countries where blood collection for some ethnic groups is difficult. For example, blood donation in the United State of America, particularly in the group of African Americans, is rare and insufficient, both in normal and uncertainty periods (Shaz et al., 2009). This represents the good-heart of blood donors in Thailand, as well as the of strength of public relationsNBC. This issue raises the point about how NBC can cope with the unexpected number of blood donors against the available capacity of resources.

Furthermore, during the time of political turmoil in 2010, the director of NBC (2015) stated that there was only one blood donor who walked in to donate blood at NBC which is obviously opposite to the previous two situations because the area is near the mob. This situation made NBC helpless. It is the most serious uncertainty of blood donation management that has ever happened before.

This event was a serious issue for people in the whole country, as well as NBC of Thailand. There were numerous organizations affected, especially NBC in Bangkok, Thailand, where the headquarters of blood supply for plenty of hospitals in Thailand is located. It resulted to unusual situations of blood donation management in which the NBC staff could not perform their work properly.

At that time, some public organizations had been blockaded and exacerbated, resulting in a move into temporary workplaces. This included NBC as well as its building's entrance was blocked.

Furthermore, there was a plan that has already been made for coping with uncertainty or unexpected event in advance but in the real-time that plan may not be implemented properly leading to the negatively huge impacts on medical performances and services of the country.

However, the need for blood is still requested as normal. This situation is also another issue that should be studied in how NBC deals with the management of blood donation during normal time and uncertainty. The tough time of NBC regarding management of blood donations under unexpected circumstances is an issue that needs to be paid more attention to for ensuring that the daily target of blood donation can still be met efficiently.

No matter general or unordinary situation, the overview picture of the country under the management of blood donations reflects the well-being and health of the people in the country. This affects the image of the country that can pull or push the economic growth like GDP, foreign investment, and so forth because the well-being of people in the country can reflect the good and bad image of the country.

Since health care is an important topic that most people consider, obtaining blood transfusions adequately is not a small topic but a serious issue due to every life's needs to live with good health, in this light, the capacity of NBC impacts the medical treatment of the whole country.

Thereby, the management of blood donation is a subject matter that should be studied and analyzed in order to emphasize the existing approach to keep it effective and see if there is a point that needs to be adjusted and improved for the better management of blood donations for everyone in the country.

For the better management of blood donations, however, the authorized decision-maker should have the right understanding about the feedback from the frontline officers. This hopefully enhances the management of blood donations of NBC to perform blood donation services more efficiently for pursuing the best results of blood supply for the whole country.

### **1.3 Significance of the Study**

This research supposes to provide benefits regarding management of blood donations for achieving the targeted number of blood donations by effective handling with blood donations no matter what kind of situation. Even though it will normally follow the manual of blood donation management, sometimes the existing manual may not be applicable. NBC, BDC, authorized decision-makers or authorized management representatives, scholars, researchers and other readers who are interested in this field could follow the findings as a guideline to see the different issues that may benefit about management of blood donation as follows.

1.3.1 Awareness of existing and prospective threats could drive NBC to take early action for the better position in dealing with all kinds of situations, often helping organizations avoid more serious problems.

1.3.2 Apply appropriate management theory for managing the goal of achieving the targeted number of blood donations effectively. It could give NBC the upper hand over unwell-prepared management.

1.3.3 Preparation of blood donation management could help NBC continue daily activities through every period of time efficiently.

1.3.4 Having insights about the key motives enhancing the willingness of blood donors, particularly during tough times, could help NBC create a better environment for pursuing the satisfied performance in which this insight also guides what NBC should manipulate and implement appropriately during the tough period of time. This is able to drive the NBC to overcome a major challenge during uncertainty and potentially enhances the effective management of blood donations.

### **1.4 Research Objectives**

According to the management theories, there are various management theories that guide organizations for achieving the goal; these also include the management theories during uncertainty that guide organizations to solve problems during the unexpected time in order to manage and maintain daily activities effectively. The author is interested in the application of these theories with the unique characteristics of non-profit organization, as NBC.

The management approaches of blood donation that NBC implements normally and in the period of any uncertainty should be considered as the theories of management can be applied to help NBC achieve the target and pass through the tough moment of an unexpected event.

The problem or obstacle against the management of blood donations, as well as the solution would also be explored. All the given purposes of the study are expected to be publicized internationally as the advantages to other researchers can more or less guide others to follow efficiently.

The purposes of the study, however, are divided into two main research objectives, as general and unexpected situations. The first to the third objectives are about the normal situation, while the fourth and the fifth objectives explore the important matter in dealing with unexpected events. NBC, hence, will be also able to consider the important issues for handling blood donations that does not occur in normal situations.

The below statements are the purposes of this research.

1.4.1 To study how NBC of Thailand could manage the blood donations to meet the daily target sufficiently.

1.4.2 To analyze the effectiveness of blood donation management of NBC.

1.4.3 To develop the issue(s) beyond the implementation approaches of blood donation management that affects the pursuing of effective management of blood donations.

Besides the appropriate management of blood donations in normal situations, there are also other issues that can enhance the blood donations in timen of uncertainty to be greater.

According to the study of Ringwald, Zimmermann, and Eckstein (2010), demographic factors are what should not be ignored since they influence people on behaving differently in various situations toward donating blood. In order to be achieved, demographic factors vs. motives enhancing the management of blood donation in time of uncertainty should be studied.

1.4.4 To study the differences between demographic factors and motives enhancing blood donations during unexpected event.

1.4.5 To identify the significant motives enhancing blood donations during uncertainty.

## **1.5 Research Questions**

This research paper aims to explore and answer questions regarding the management of blood donation that NBC implemented and the attitudes from the NBC's officers toward the effective of blood donation management, as well as the key motives that affect the willingness of blood donors, particularly in the time of uncertainty, in order to support the management of blood donations at NBC of Thailand, as in the following research questions.

1.5.1 How could NBC normally manage blood donations for achieving the daily target sufficiently?

1) What are the concepts applied for making blood donation management to be sufficiently effective?

2) How could NBC manage the blood donations for achieving the daily target sufficiently in the case of unexpected circumstances?

3) What is an approach applied to cope with normal and unexpected situations for achieving the daily target sufficiently?

1.5.2 What do officers think about the effectiveness of blood donation management of NBC?

1.5.3 What is/are the issue(s) beyond the existing management of blood donations that officers of NBC think the authorized-decision makers should consider for better management of blood donations?

1.5.4 How are the differences between demographic factors and motives enhancing blood donations during unexpected event?

1.5.5 What are the most significant motives having an effect on the willingness of blood donations during uncertainty?

## **1.6 Scope and Limitation of the Study**

### **1.6.1 Scope of Study**

This research focuses on the management of blood donations that NBC regularly implements for achieving the daily targeted number of blood donations, and the attitudes from officers regarding the effectiveness of blood donation management.

Furthermore, the key motivators that positively affect the management of blood donations during unexpected times would also be explored in order to enhance the management of blood donations for NBC.

It aims to investigate the management of blood donations that NBC used for pursuing the sufficient blood supply of the country and the attitudes toward the management of blood donations from the officers who perform the assigned responsibilities for accomplishing blood donations. Besides the attitudes of officers toward the existing management of blood donations, the research would search for the issues beyond the management approaches that the authorized-decision makers should also consider for supporting the future decision-making about the management of blood donation. The scope of the study takes a total of four months for collecting data for qualitative and quantitative methods.

The scope of study can be categorized into three issues which are presented in Table 1.1.

**Table 1.1** The Scope of Study

<b>Issue</b>	<b>Sample</b>	<b>Sample Size</b>
Blood donation management of NBC	Director of NBC	1
Effectiveness and attitudes toward management	NBC's officers	9
Willingness of blood donors	Blood donors	333

### **1.6.2 Limitation**

The data collection merely comes from people inside NBC, as well as blood donors, not being involved with any hospitals as the blood receivers. Even though, the study aims to study the effectiveness of blood donation management of NBC, the data is not collected from blood receivers.

## **1.7 Definitions of the Terms**

### **1.7.1 Management of Blood Donation**

The management of blood donations or blood donation management refers to the ways that authorized-decision makers of NBC achieve the goals. Furthermore the management of blood donations also considers the interrelation of different functions among divisions in NBC. It sustains the interrelationships that could help NBC have the better understanding of how to manage organizations properly (Jones & McRoberts, 1990).

Moreover, the management of blood donation, at this time, is generally understood to be encompassed with all issues that enable functions and various components to make organization work properly (Innes, 1996).

In this study, the management of blood donations does not only refer to one method, but also various means that NBC used to sustain blood donation activities moving forward to achieve the goal. It also includes the motivating matters and essential tasks of NBC that are assigned to enhance the blood donation for pursuing effective blood donation management in normal times and unexpected events. It may involve the coordination and support of other organizations to manage the blood donations to be sufficient as well.

### **1.7.2 Unexpected Time**

The unexpected time or uncertainty time refers to unstable events affecting the ordinary management of blood donations. It can also refer to any circumstance that influences the daily activities of blood donations with or without danger. Moreover, unrest, unexpected, emergency, uncertainty, instability, turbulence or turmoil, refer to the same meaning and also relate to the situation involving a threatening phenomenon, surprising, since non-planned situation (Hermann, 1963).

In addition, unexpected time can be identified as the situation which creates an abrupt change on one or more variable key(s) of the system (Hermann, 1972). Furthermore, uncertainty time is also explained as 1) a major threat to system survival, 2) with little time to respond, 3) involving an ill-structured situation (Turner, 1976), and 4) where resources are inadequate to cope with the situation caused by the turbulence (Hermann, 1963; Starbuck & Hedberg, 1977; Webb, 1994).

Although the unrest calls into question the survival of a system, it can lead to either positive or negative organizational outcomes (Marcus & Goodman, 1991; Pauchant & Mitroff, 1992). Some scholars have even argued that the trauma inherent in unexpected event is developmental for a system by providing individuals within the system opportunities for learning and change (Pauchant & Mitroff, 1992).

In this case study, the unexpected time refers to the situation that negatively affects the management of blood donations. It includes the events causing staff and blood donors to be uncomfortable to donate blood donation properly which impacts the daily performance of NBC.

## **1.8 Benefits of the Study**

The research finding of this paper could be the lesson learned in management of blood donations, especially in the unique characteristics of non-profit organizations like NBC. The study also provides the insight approaches for managing blood donations normally, as well as during an uncertainty circumstance. Moreover, what motives positively generate the suitable management of blood donations for NBC during unexpected events would be presented. Hence, it will be beneficial in case of considering it before making any decisions in the future for the suitable management of blood donations through any kind of circumstance beyond the available management.

The readers are able to utilize the findings or results for considering the management of NBC that has the limited budget to manage and support the situation of blood donations. In addition, the readers can see the significant motives enhancing the willingness of blood donors to come for donating blood during unexpected times in which others can apply them with other kinds of donation management, as well as the theories that can efficiently support management of blood donation.

Furthermore, this academic research would be useful as a guideline for the people who have the authority in decision-making, authorized management representatives in non-profit organizations or other people who are interested to deal with management of blood donations by focusing on the organization that impacts the well-being of the whole country as NBC of Thailand with its management approach for the daily work activities in blood donation services. The readers would be able to

identify the key motivators dealing with blood donations in times of uncertainty for non-profit organizations like NBC.

This study could help the readers search for ways to manage unexpected situations affecting the performance of organizations and the key motives enhancing effective performance management as management of blood donations in this study more or less guide the readers to have a clear idea in managing their organizations. Finally, this paper provides necessary information in the field of managing blood donations, particularly in non-profit organizations, for pursuing of the expected outcomes with limited budgets to implement.

## **1.9 Conclusion**

This chapter briefly introduced the research background, problem statement, significance of this study, research objectives, research questions, scope of the study and benefits of this study. The problem emerged since various changes and improvements have affected people's life, as well as the health conditions that increasingly require blood transfusions. This makes NBC to have the appropriate management of blood donations in order to supply the need for blood for the whole country of Thailand. Moreover, the management of blood donations that NBC implements everyday also impacts the overall well-being of the country as it can lead to a good or bad image of Thailand's health.

The author has an intention to conduct this dissertation to study the management of blood donations of NBC and the issues that support the management of blood donations which include the motivators influencing people to support the management of blood donations during unexpected times. Then, this paper would more or less support people who search for the appropriate approaches for the management of blood donations. The literature reviews or theories will be discussed furthermore in the next chapter.

The author also writes a summary of the research methodology and how the data will be analyzed by using mixed methods of both qualitative and quantitative methods which will be fully described in chapter three and chapter four. In the next chapter, literature reviews will be described by a conceptual framework and will be analyzed in line with the research objectives.

## **CHAPTER 2**

### **LITERATURE REVIEW**

#### **2.1 Management Theory**

The term management in the field of organization refers to a combination that mixes everyone's efforts with the appropriate tasks to efficiently achieve the organization's goal by utilizing the existing resources to generate the satisfied outcomes. It also refers to other activities such as planning what to do, hiring the right staff, assigning appropriate tasks, organizing different functions, guiding the correct working approach, and controlling all functions until they meet the goal. These are manipulated by the organization's various available resources consisting of people, money, technology, as well as natural perspective. Management, however, is concerned with the society surrounding an organization regarding a social science, and it also requires adequate discipline for effectively accomplishing the organization's objectives.

There are many scholars who discuss about management. Henry Fayol pointed out that management should start with forecasting and planning what to do, and after that it must assign tasks and responsibilities to the right ones by using commands and supporting one another, and then it must be controlled. Meanwhile, another scholar, Fredmund Malik, stated that management is the alteration of existing resources to be further useful applications which start from the manufacturing process combining to equipment, machines, and financial resources. Moreover, Ghislain Deslandes demonstrated that there are pressures, obstacles, limitations, copy, creativity, personal performing, various agencies, and social environments concerned with management (Daft & Marcic, 2004).

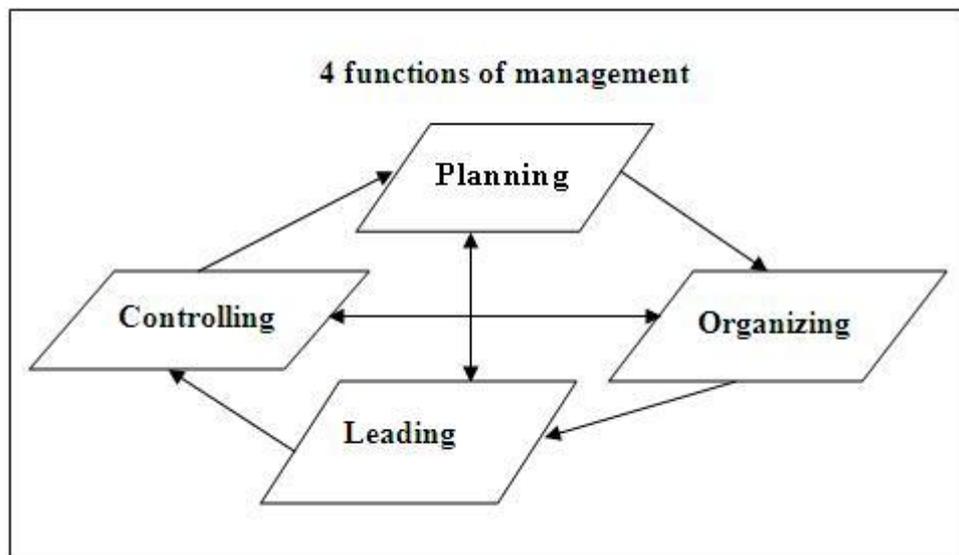
Innovation and marketing are also the basal matter of management which Peter Drucker (1909-2005) discussed is necessary to link the management with marketing by focusing on innovative issues in order to promote or market

successfully. He revealed that organizations should create something new to the market for the success of the organization. In other words, innovation is the key success that makes organizations different from others. Andreas Kaplan particularly gave the definition of management in Europe where the administration of different cultures and societies needs multi-approaches as the principle of management. Organization should give the authority to the director and managers to deal with serious issues and it should have rules and regulations to control the people to perform according to the policy for achieving the goal. The managing size could vary according to the size of the organization. Especially in a big organization, a policy to implement for chief of each division should be obtained by the director.

In the aspect of academic theory, the word management includes specifying an organization's mission, purpose, regulations and dealing with human resources for making things efficient and successful. Successful management also includes appropriate communication for motivating people in the organization to work effectively, leading to the appreciated results. In fact, management is not only looked at as a part of an organization, but also amelioration for the crucial element inside the organization like the relationship and lives of the organization's people (Daft & Marcic, 2004).

Further, it is important that every organization play a prominent role in their businesses, particularly in emergency situations. Business continuity is a must when unexpected turbulence affects the functional and dysfunctional qualities of organizations' business activities. In the first hours of chaos, organizations demonstrate themselves at to whether they posse highly necessary skills for improvisation and immediate action (Rosenthal & Kouzmin, 1997). They are supposed to know how to keep their daily business activities working properly involving large numbers of people, equipment and workplace, as well as sophisticated communication technology. In this section, there are many management theories involved like contingency theory, chaos theory, and complexity theory, and so forth that relate to organization management in unexpected events, as well as the particular literatures regarding blood donation management to handle the contingent turbulence related to this research study.

According to the results of management, people always refer to two terms - “efficiency” and “effectiveness” (Mintzberg, 1973). What organizations do can contribute efficiency, but sometime effectiveness does not follow. In terms of efficiency, it refers to the output of what organizations do with a reasonable cost of investment. In case it can produce a lot of products at a lower cost, organizations are efficient, while effectiveness refers to accomplishing the stated goal, meaning that what an organization sets as its goal can be achieved. This means organization is effective.



**Figure 2.1 The Major Management Functions**

**Source:** Daft and Marcic, 2004.

From Figure 2.1, there are four functions of management, especially the goal of organization, with efficiency and effectiveness by 1) planning what to do to achieve the goal, 2) organizing what people have to do to meet the goal, 3) leading the right direction to perform tasks with motivators, and 4) controlling what people do and correct it appropriately (Daft & Marcic, 2004).

Not only the four main functions of management that should be considered in this topic, but also various perspectives of management involving efficiency and effectiveness of management - classical perspective, humanistic perspective, and

management science perspective - which the author thinks impact organizational performance as NBC is an organization that comprises of various divisions, as well as many people. To manage the work properly, the following management perspectives should be studied.

### **2.1.1 Classical Management**

This is the early period of management evolution that only focuses on productivity. It emphasizes on how the work can be accomplished efficiently without caring about human relationship or the external environment. The main focus is about utilizing the available resources like workers, raw materials, machines, and others, to generate a satisfactory outcome at the lowest cost (Daft & Marcic, 2004).

1) Scientific Management: Frederick Winslow Taylor, the father of scientific management, after the study of time and motion, suggests that productivity can be increased if employees get higher pay. It guides that paying higher incentives can get higher results of work. It concerns with “one best way to organization”, meaning that it must specify a clear procedure and construction of what to do for getting the wanted outcome (Daft & Marcic, 2004).

2) Bureaucratic Organizations: Max Weber, a famous theorist, discloses that organizations should have a standard to perform jobs. Everything that an organization will do must follow the standard procedure in order to avoid mistakes or dysfunctional performance. The workers would be defined as to what to do and the authority to perform tasks. If they generate good performance, they should be promoted, and vice versa. Everyone can see the hierarchy and authority of work. It is top-down management (Daft & Marcic, 2004).

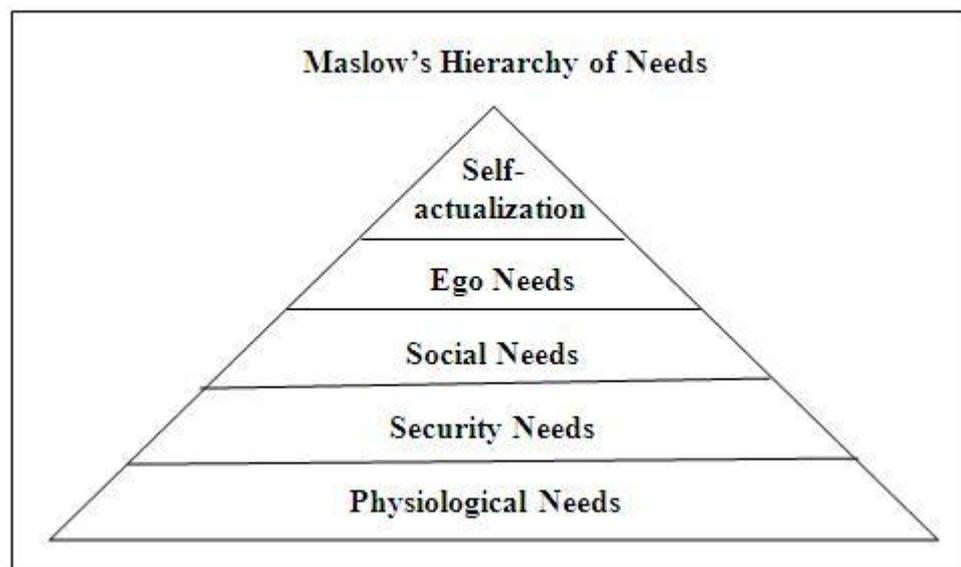
3) Administrative Principles: Henry Fayol states that the functions regarding administration consist of five functions: 1) Planning, 2) Organizing, 3) Commanding, 4) Coordinating, and 5) Controlling. Further, he raises the interesting matter that individual responsibility is equal to individual authority. The division of work is also necessary for reducing production time, as well as enhancing workers' skills. It is concerned with centralization for controlling (Daft & Marcic, 2004).

### 2.1.2 Humanistic Perspective

After previous management concepts mainly emphasize on the work and authority, a humanistic perspective adds more issues about human resources. The author sees that this perspective quite influences the individual performance for organizational success.

1) Human Relations: This concept focuses on human beings as employees who work for organizations rather than only working for job descriptions. After the study of the Hawthorne effect, it was found that people could generate greater performance when they perceive that the leaders care about their feelings. This approach is better than paying higher incentives to workers for getting higher productivity (Barnard, 1938).

2) Hierarchy of Needs Theory: Maslow (1978) states that workers do not only need to be as apart of a social belonging, but they also need higher aspects like autonomy, self-esteem, and self-actualization. He says that people have different and higher desires, so if they are fulfilled with their needs, it can affect their work performance too. There are five main needs of people in society according to Figure 2.2 which Maslow (1978) discussed.



**Figure 2.2** The Hierarchy of Needs

**Source:** Maslow, 1978.

The hierarchy of needs starts from the bottom, a physiological need, which is the fundamental needs of people like food, drink, clothes, and shelter. Above the physiological needs is security needs, which refers to be safe without threat as everyone wants to stay with harmlessness. After that, people want the feeling of social belonging, like love. The higher level over social needs is ego needs, which refers to esteem needs which is about being accepted into society making someone feels confident and important; otherwise one will feel alienated and useless. The highest needs is self-actualization since one recognizes one's own potential and continuously develops oneself or achieves expectations.

The author thinks that this theory seems to influence NBC's officers toward the work of blood donations because they are normal people who have needs, and thus this theory should be involved with the management of blood donations.

3) Theory X and Theory Y: To manage the right people to the right job, this concept guides organizations to select people and assign jobs according to the behavioral categories of them. Theory X categorizes the group of people who are lazy, hate a lot of work, lack ambition, lack responsibility, are selfish, are foolish, and are against change. The group of people in theory Y are opposite to theory X, and hence, they need control and stimulation to be active and accomplish their tasks by the rules, punishment, and motivators. Otherwise, it is difficult to get satisfactory job from those people as they never care about the organization's need and act against change like any policy or procedure, and so forth (Daft & Marcic, 2004).

### **2.1.3 Modern Management Perspective**

This perspective is not concerned only with the work and people, but also the external environment like the social context. There are many concepts regarding the area of social context management for organizations. This era of management emphasizes the surrounding environment affecting the organization. In the past, management approaches focused only on work and human resources, and they did not concern about the outside organization like the social context which can enhance and threaten organizations. Therefore, organizations should respond to the external environment promptly (Daft & Marcic, 2004).

### 1) Contingency Theory

There is no one best way to do things as in the classical perspective management. Organizations should manage things appropriately according to the actual situation rather than following only one available approach. The contingency theory is a major theoretical review that scholars use to view organizations (Donaldson, 2001). Contingency theory is a class of behavioral theories where there is no best way or general practice of decision making to organize and lead an organization. Rather, the optimal course of action in any given situation is instead contingent (dependent) upon the internal and external situation.

Contingency factors moderate the link between human resource management, strategy and performance, and therefore, deny the existence of best practices that work under any circumstances (Galbraith & Nathanson, 1978; Miles & Snow, 1984; Schuler, 1987; Delery & Doty, 1996). Lawrence and Lorsch (1967) supported this argument that different environments need different requirements on organizations. They particularly claimed that the different environments characterized by uncertainty and rapid rates of change in competition, task uncertainty, market conditions, technologies and other circumstances present different challenges, both constraints and opportunities, to organizations rather than peaceful and stable environments. The more uncertain or the more interdependent a task is, the more difficult it is to predict which strategy is the best course of action.

The contingency theory, however, is guided by the general oriented-environment that organizations whose internal features best fit the demands of their environment will achieve the best adaptation (Scott, 1981). Galbraith (1973) argued that a wide range of effective organizations exists; nevertheless, their differences are not random. The forms of organizations' contingencies are different. Organizations are inevitably confronted with new elements in their environment when strategically relevant changes occur. These changes would be created to serve for survival of the organizations. The contingency theory clarifies the critical matter for an organization to adapt the current approach of organization management to fit with the new situation. However, it can be recognized that there is some room for a strategic choice of contingency theory. In the long run, no organization can survive unless it adapts adequately to the environment. Forsgren (2008) pointed out the contingency theory

can be able to “open up” the organization and formulate propositions regarding to how the environment interferes on the strategic behavior of the organization.

According to Morgan (2007), management aims to achieve alignment and a good match between strategies, culture and environment. High performance and efficiency, which is a crucial factor of contingency theory, are dependent on how well organizational characteristics appropriate with contingencies. Therefore, organizations are motivated to avoid miss matching, after contingency change, by adopting new characteristics when needed (Donaldson, 2001; Forsgren, 2008).

## 2) Change Management Theory

There is, however, change management that is also relevant to the issue of managing any unexpected circumstance. Todnem (2005) identified changes as emerging or planned. Nicolini (2009) also referred to change as a process of translating conversations or diffusive with a certain starting and ending point. Translation means that there is no distinctive starting or ending point. The changes translate through conversations and reformulate the reason for change, as well as the outcome of change activities. On the other hand, diffusion means that sometimes change happens, someone initiates change, something directs changes, and somewhere change ends. Organization development practitioners have always seen organizational changes as a process of adapting, for example, translating or re-inventing some ideas to the context where they are to be realized (Stjernberg, 1993). From the translation perspective, resistance is a prerequisite for conversations and views that may improve the change (Dent & Goldberg, 1999).

Nadler and Tushman (1990) presented that there are four different types of organizational changes requiring different types of leadership: incremental, strategic, anticipatory and reactive. Incremental change only affects selected parts of an organization not including the framework with a goal. Strategic changes, on the contrary, impact the entire system. Reactive change focuses on change as a response to external events, while anticipatory change is anticipation of future events and a more proactive approach. These four dimensions contribute to four different changes which are tuning, adaptation, re-creation and re-orientation. Tuning is a change of specific components made from the anticipation of the future, whereas adaption is a change of specific components made from the reaction to external events.

However, re-creation is a change of the entire system as a reaction to external factors, while re-orientation is a change of the entire system as a proactive action. Nadler and Tushman (1990) further mentioned the crucial point that strategic change is essential for an organization where re-creation is associated with more risk and re-orientation with success since the latter usually is performed during a longer time period than a re-creation.

In summary, change management is crucial in creating a readiness for change with an aim to reduce resistance, as well as enabling the change with the resources and time needed.

### 3) Chaos Management Theory

Another theory that is also involved with modern management theory for coping with the external environment is the chaos management theory. Many scholars who have written literature about Chaos Theory have mentioned that the organizational world in some situations appears to be so turbulent and chaotic that it is not possible to predict what happens and when. This makes the traditional approaches in strategic management less appropriate.

One of the ways for managing the unexpected turbulence is creating learning organizations. According to Mintzberg (1994), “we think in order to act, to be sure, but we also act in order to think”. The experiments that work well gradually turn into practicable patterns that become strategies. This is the very essence of strategy making as a learning process (De Wit & Meyer, 1998).

On the other hand, Senge (1990) argued that in an increasingly dynamic, interdependent, and unpredictable world, it is simply no longer possible for anyone to “figure it all out at the top”. The old model, “the top thinks and the local acts”, must now give way to integrating thinking and acting at all levels.

Senge (1990) also stated that adaptation is the first stage in moving toward learning organizations. However, an organization should not just learn to adapt and respond to environment changes; it must also learn to be generative and to expand the capability. Organizations should therefore focus on generative learning which is about creating, as well as adaptive learning which is about coping. Senge (1990) further stated that generative learning requires new ways of looking at the world, whether in understanding customers or in understanding how to better manage a business.

Johnson and Scholes (1997) argued that planning with fixed objectives by a top management strategy formation is no longer the solution. The solution is to develop pluralistic organizations where different ideas and views are concerned. This is more likely to take place where informality, networks of relationships in workplace, and dialogue are to be found. When the plan is done, a learning organization is capable of benefiting from the variety of knowledge, experiences and skills of individuals through a culture which encourages mutual questioning, and challenges around a shared purpose or vision (ibid).

To better understand how organizations can cope with turbulence, one has to start with the chaos theory. Studying chaos theory of natural sciences could facilitate the understanding of how organizations deal with a turbulent environment. In general, chaos is equal to something confusing, messed up and tumultuous. Tetenbaum (1998) described chaos as an unpredictable, complex, and orderly disorder, in which patterns of behavior develop in irregular, but similar forms.

While Stacey (1993) exposed that the term chaos refers to a form of instability where the specific long-term future is unknowable. Chaos, in its scientific sense, is an irregular pattern of behavior generated by human society. Such systems are highly sensitive to small changes in their environments, and can be amplified into assault circles that completely alter the behavior of the system. In other words, the system's future is dependent on what it does, what the systems constituting its environments do, and upon chance. In the long-term, future development is completely unpredictable, but over the short term, it is possible to predict behavior since it takes time for the consequences of small changes to build up.

Stacey (1993) also mentioned that chaos consists of two factors: unpredictability and hidden patterns. Firstly to be mentioned is unpredictability; it means that small changes could cause huge effects since chaos is a system highly sensitive to changes. There is often also a missing link between cause and effect, which can be troublesome for organizations that are used to planing and controlling their operations and strategies. Long-term predictability is near zero, and only short-run outcomes can be predicted. This makes the future that organizations are confronted with highly unpredictable.

The hidden patterns are unique and different, but also of common features belonging to a contained category. These hidden patterns, in some way, control the system (Stacey, 1993). Stacey also disclosed that in business patterns of boom and recession can be recognized, each time they are different in specific terms, defying all attempts to predict them. These recognizable patterns make it possible for humans to cope with chaos.

#### 4) Complexity Management Theory

The theory of complexity management is one more theory regarding the study of organization management for handling the instability. To get rid of chaos in a business context is called the complexity theory. This theory views organizations as highly complex systems in which the best way to achieve the best control possible is to balance on the edge of chaos. For example, neither too much restrictions nor total chaos is desirable (Eisenhardt & Brown, 1998). Stacey (1993) stated that an organization consists of people which do not act in the same way regardless of the situation, but adapt to the present situation regarding an organization as complex. The system is self-organizing; in other words, people act in the way they feel right, and know how and when to change things, and do so. By doing so, they find order in their chaos (Eisenhardt & Brown, 1998). The complexity theory helps to understand how an organization must change to be able to deal with its turbulent environment, since it connects change, chaos, and the organization (ibid).

Regarding the discussion above, Stacey points out the complexity theory by developing eight steps on how to create order to get rid of chaos as below.

(1) Develop new perspectives on the meaning of control. Self-organizing processes can produce controlled behavior even though no one is in control.

(2) Design the use of power. The kinds of group dynamics that are conducive to complex learning occur when open questioning and public testing of assertion are encouraged.

(3) Encourage self-organizing groups. A group will be self-organizing only if it discovers its own challenges, goals, and objectives. Such groups need to be formed spontaneously; the role of the top manager is only to create the self-organizing atmosphere.

(4) Provoke multiple cultures. One way of provoking new perspectives is to rotate people between functions and business units.

(5) Present ambiguous challenges instead of clear long-term objectives or visions. Problems without objectives should be intentionally posed to provoke the emotions and conflict that lead to an active search for new ways of doing things.

(6) Expose the business to challenging situations. Managers who avoid taking chances face the certainty of stagnation, and therefore, the high probability of collapse in the long term. This is because innovation depends significantly on chance.

(7) Devote explicit attention to improving group learning skills. New strategic directions emerge when groups of managers learn together in the sense of questioning deeply held beliefs and altering existing mental models rather than simply absorbing existing bodies of knowledge and sets of techniques.

(8) Create resource slack. New strategic directions emerge when the attitudes and behavior of managers create an atmosphere favorable to individual initiative and intuition, and to learning in groups.

#### 5) Crisis Management Theory

After considering all of the given theories regarding organization management, the issue of uncertainty or crisis management itself should also be reviewed for preparing for the unexpected circumstance that may harm the work of the organization. Crisis management is the systematic attempt to avoid organizational crises or to manage those crisis events that do occur (Pearson & Clair, 1998). Perrow (1984) and Barton (1993) claimed that crisis management involves 1) attempts to eliminate technological failure, and 2) the development of formal communication systems to either avoid or manage crisis situations.

Coombs (2000) clarifies that crisis management literatures have focused primarily on the development of the crisis management plan (CMP). A CMP is a plan which consists of a full range of thoughtful processes and steps that provide against the crisis. CMPs allow for faster and more efficient responses to crises when they do occur (Barton, 1993; Coombs, 2000). Therefore, more organizations now have CMPs than ever before and that number continues to rise (Coombs, 2000).

The overall crisis management has two components that are most relevant to this academic research: the Crisis Communication Plan and the Crisis Management Team. Crisis communication plans design the specific organizational communication actions to be implemented to either prevent uncertainty from occurring, or to manage communications when unexpected events occur. For the Crisis Management Team, it is a key organizational communication. When uncertainty does occur, everyone knows their own responsibilities, as well as the contact information and responsibilities of all other members of the team.

## **2.2 Literatures About Blood Donation**

### **2.2.1 General Blood Donation Management**

The previous discussion was about general management, and the following section is about the way to increase the effective performance of blood supply under normal times and unexpected circumstances, which refers to various factors and psychological aspects. It seems that the demand for blood transfusion has been increasing, and it also requests more support from eligible blood donors to fill up the insufficient blood supply. Due to the threat of sickness that needs transfusions to heal people's pain, the change in the population size, as well as the trend of demographic characteristics in the future, blood collection agencies worldwide need to find ways to handle the increasing demand to help the blood needed ones. As mentioned, it is imperative to study various issues regarding the successful pursuing of blood collection such as factors of motivation and deterrents in blood donation, psychology of blood donors, handling with unexpected circumstances, and so forth.

There are increased needs for blood transfusions around the world, so the study for enhancing the higher rate of blood collection has become an important issue to support worldwide demand for blood (Shaz et al., 2009). Heier, Olaussen, and Svenningsen (2012) indicated that there are many patients and elderly people faced with cancer in which blood transfusion is seriously needed. Nowadays, the size of population and the demographics have been changed, with higher number of elders, while the size of the child population has decreased. These reveal that the increasing portion of elders requires higher care of their health, particularly related to the case of blood transfusions involved has been also higher.

Godin, Vézina-Im, Bélanger-Gravel and Amireault (2012) also stated that the willingness to donate blood of teenagers seems to be reduced aligning to a demographic change that makes the obtaining of blood donations become harder. This topic requires much effort of participation from everyone in every country. There are about 3% to 8% of blood donations from the qualified population in developed countries, and only 1% from blood donors who donate blood frequently (Ringwald, Zimmermann, & Eckstein, 2010). These statements reflect the difficulty in pursuing blood donations from voluntary blood donors who are eligible but appearing in a very small proportion compared with the total number of potential blood donors in each country that can also support blood supply sufficiently. It is challenging to motivate the rest of people who have not become blood donors yet.

Rentas et al. (2012) exposed that the aging population in 2030 will be twice the size of the current number of elderly people in the United States. It is necessary to manipulate the supply of blood to be sufficient with the real need for blood in the coming future. Ngoma et al. (2013) also stated that the demand for transfusions has been increasing, whereas the blood donations from young people has been diminished. It indicates that there is the feasibility of a decreased number of blood donations from youth in the new generation.

There are, however, other reasons making the ease of getting blood donation to be not yet achieved the goal in which the BDCs have to consider the whole process from the beginning until finishing phases that can both enhance and destroy the symmetry of blood collection in order to ensure and prepare the readiness for the increasing in aging population properly. This implies that the study about the psychology of young people toward blood donations should more or less support the issue.

The evolution of blood donations has been developed for ages. In France, the way of pursuing a large proportion of blood supply started during the wartime in 1939 (Lefrère, 2011). During that era, the French had to prepare a large amount of blood in advance for any case that might happen brutally and need transfusions during the time of conflict with Germany. The Centre of blood donations began at the wooden barracks which were used as the laboratory and the room for donating blood. It was a good sign that the feedback of marketing communications about the news of the need

for blood had been positively responded to by thousands of people in the country since they were acknowledged by newspapers with the picture of wooden shacks that were built as a BDC in which blood donation needed the number of units for blood from a lot of people. This occurred in the early period of getting blood from others voluntarily.

It is a smart approach that the BDC allowed donors to only give their hand for donating blood through a hole without seeing their own blood during the donation process, which arm is used as a gimmick and symbol of blood donation (Lefrère, 2011). Everyone must take off their sleeve and put a hand into the operating space in the wall that prevented blood donors to see their own flowing blood which made donors feel comfortable with blood donations there; this is in contrast to letting blood donors see all the process of transfusing that could make donors uncomfortable. This method can protect from the fear of seeing blood which is one of the main barriers against donating blood (Karacan, Seval, Aktan, Ayli, & Palabiyikoglu, 2013). On the other side, there were also nurses and phlebotomists looking after and controlling the whole process of blood donation.

These places, nevertheless, were only the transfusion medicine history of French in 1939 as nowadays, there is not any evidence of these places at that location since they were moved to the concrete building of Saint-Antonie hospital instead; there are only pictures that can show the story of these places (Lefrère, 2011).

The acceptable international approach of blood donation is from voluntary blood donors without remuneration; there is also the method of getting blood from donors by paying money though, such as in Norway and Turkey (Heier, Olaussen, & Svenningsen, 2012). In Norway, there are a lot of people having problems with cancer which include general people and elderly people. There are various medical treatments for cancer patients and blood transfusion is also counted as one of the crucial treatments in dealing with cancer. Surprisingly, there are the options of blood donation in Norway, referring to obtaining blood, whole blood, and specific components, so-called apheresis, from both blood donors who receive remuneration and unpaid blood donors who come to give their blood willingly. The unpaid blood donation, or voluntary donors, began since the period of World War II in which the people in allied countries supported a free society and they seemed to agree with donating blood as an accepted socio-ethical attitude.

The problem of blood supply, nevertheless, in Norway has occurred around the year of 2007 and 2008 because the level of gamma globulin used for intravenous administration is not sufficient, which refers to Norwegians' fresh-frozen plasma that is insufficiently collected (Heier, Olaussen, & Svenningsen, 2012). There is a market where blood donors are paid in the commercial plasma market. This kind of market substitutes the national self-adequacy campaign where the World Health Organization (WHO) and the council of Europe encourage their members to maintain blood and plasma with self-adequacy. There is also the hypothesis stated that the willingness of people toward blood donation has been decreased because of the higher standard of living. Consequently, the short-term in blood supply from novice blood donors is stimulated by various approaches of recruitment campaigns, as well as the reports of uncertainty (Heier, Olaussen, & Svenningsen, 2012).

One of the interesting programs of blood donation in Norway is the effective motivation campaign that has the participation from the crown princess as a blood donor, which has stimulated the number of blood donors of the whole country to increase 5%. Another event that stimulates people to donate blood is the event of July 22, 2011 - the terrorist attack; there is a tremendous number of people who come to donate blood. Heier, Olaussen, and Svenningsen (2012) explained that the biggest challenge of the blood bank is how to retain the new blood donors to repeat for the next donation in the future.

It seems that the number of new blood donors comes through word of mouth from the existing blood donors who perceive that blood donation is an experience making them enjoy and would like to share this impression with others, which is a sustainable technique for recruiting the novice blood donor by the existing first-time or repeat donors who have satisfaction with blood donation. Electronic tools in the modern society can also be used to make a request for blood and appointments for blood donations too.

Heier, Olaussen, and Svenningsen (2012) revealed that the group of unpaid blood donors has a lower involvement of infection through blood donation, compared to those of paid blood donors who have higher-risk of transmissible infection. This, however, shows that the collected blood from volunteers seems to be safer than blood donors with remuneration.

The blood collection centre must consider about the management regarding qualified staff who can treat blood donors in an appropriate and effective way with adequate time, not making blood donors feel too busy or too slow in any process of blood donation.

The definition of each BDC may vary independently like the blood bank in Norway -all blood donors are defined as patients. There is not only the issue of terms used in the blood bank that should be reconsidered, but also the flexibility of data exchange among health care Centres, which have many rules of data transfer. It shows the difficulty of how to access the data of each blood donor if they come from different BDCs.

The data of blood donors is also another topic that should be considered to make the flexible exchange for blood donations among health organizations. This issue should not make it too strict and should assign regional medical enterprises to be responsible for the blood donor's data in each area, rather than leaving it with complexity; if there is any urgent case that needs the data immediately, definitely it should flow smoothly. Therefore, the term that is used to define blood donor should be better changed to encourage them, and the rule setting for data transfer should be modified to be an appropriate manner for easy support to other BDCs.

The interesting point of blood bank management in Norway is about the special technology, or apheresis machine, that can help transferring whole blood donated to be purified in case that the use of red blood cells is reduced. The give approach of blood purification is a good way to balance the self-efficiency of blood supply. It would be greater if hospitals have the basic knowledge of how to manage the consumption of plasma products as it could reduce the use of gamma globulin, as well as octaplas (Heier, Olaussen, & Svenningsen, 2012).

Heier, Olaussen, and Svenningsen (2012) also suggested that it is necessary to have a long-term plan about blood donation in advance for solving the situation of blood shortage that may occur in order to make the balance between blood production and blood consumption. The support and cooperation of other agencies, like the blood-transfusion community and national agencies, are the essential issues that need to be taken into account in order to successfully accomplish activities of blood collection agencies - the role of the national agency must even sometimes be re-established.

Ayyoubi et al. (2010) revealed that there are blood donors who donate blood for receiving remuneration in Afghanistan. In general, there are two types of blood donation - paid vs. unpaid blood donors. In Afghanistan, there is about 5% of voluntary blood donor without receiving remuneration, while the rest of 95% of blood donors donate their blood for individual purposes, like donating for family or friends, in which most of them often receive money in return for blood donations. This group of people are not truly voluntary blood donors.

The study of Ayyoubi et al. (2010) about the blood bank and the management of blood supply in Afghanistan exposed that there is only one public organization of Afghanistan taking work for the nation's blood supply, in which the system of national blood banks composes of the Central Blood Bank of Kabul (CBBK) and its seven branches in the country. Unsurprisingly, the blood supply of Afghanistan is not sufficient and also lacks effective management. CBBK does not have involvement in every aspect of blood supply with all branches in the country, resulting in an unstandardized process of work, followed by various problems like staff training, control of blood transfusions and infectious diseases. The study also discloses that there is not much coordination with other organizations such as the International Committee of the Red Cross (ICRC) as ICRC is responsible only for the issues regarding war, and is not involved with any recruiting campaigns for blood donors.

The effective management of BDC could not be achieved without the standard procedures that are worldwide accepted, as well as the coordination with other organizations, as the story of Afghanistan can be considered as a good example of the problems related to unstandardized blood supply implemented which also affects the blood provisions of the country, and thus reflects the public medical system of the nation. The unstandardized approach of blood supply also refers to the insufficient physicians, staff, equipment, and greater efforts in controlling the blood supply in both normal and urgent times (Ayyoubi et al., 2010).

From the cases of Norway and Afghanistan, they show that the group of blood donors that donate blood and receive remuneration is not considered as unpaid blood donors with willingness to give blood, even if their reasons might be to donate because of individual purposes like for family, relatives, or friends. Even though the main reasons that blood collection centres decide to pay money to blood donors are

the insufficient blood supply and quick blood provisions, they do not still align with the international blood donations concept of WHO that blood donation should come from voluntary non-remunerated blood donors for avoiding infectious transfusion. Since the negative results from paid blood donations tend to show a higher-risk of infectious transfusions than unpaid voluntary blood donor without remuneration, the blood donation agency should promote people to give their blood with the willingness to help others.

In general, the blood donor type can be categorized into four types (Bednall, & Bove, 2011) :

- 1) First-time donor, or novice donor,
- 2) Repeat donor, blood donor who donates more than once,
- 3) Apheresis donor, or plasma/platelet donor, and
- 4) Lapsed donor

### **2.2.2 Motivators and Barriers of Blood Donation**

The study of motives that enhance and obstruct blood donation is helpful in recruiting and retaining various types of blood donors. Unless BDC has insight about the characteristics of different blood donor types and the true motivators toward blood donation, the achievement of the recruitment of new blood donors and the retention the existing blood donors may not be easily successful because different types of blood donors do not always have the same motives for blood donation. Therefore, it is important to study the motives that enhance and deter the behavioral blood donation as these motives can enhance the blood production to be sufficient for blood consumption.

Different regions have different groups of people, cultures, beliefs, and norms that lead to different motivators and barriers to blood donation. The study of Shaz et al. (2009) revealed that African Americans have very lower rate of blood donation than white Americans. To increase the higher rate of donations from this group of people, it is imperative to study the different motives that stimulate and deter them to donate blood.

There are approximately 15 million people who come to donate blood as voluntary blood donors without remuneration yearly, of which African Americans

appears as a small proportion versus the whole population in the United State. There is 73%, for instance, of blood products donated by white Americans in Atlanta and vice versa. African Americans, nevertheless, become a significant minority in a capital city like Atlanta, which is considered as a reason to observe the variation in blood donations for obtaining a sufficient blood supply for the whole society. In fact, the red cell products, which are collected from African Americans, are very useful for healing patients who had sickle cell disease, stroke, acute chest syndrome, and multiple organ failure (Shaz et al., 2009). As mentioned, it requires a similar genetic background of blood donors for phenotype-matched red cell products which could fulfill the blood supply from the group of people who have unlike genetic backgrounds as African Americans for treating others who also have similar genetic backgrounds like them.

The major motives in pursuing blood donation from the group of African America are selflessness or altruism, acknowledgement of the need for blood, a sense of social responsibility, surrounding pressure from society, need to substitute used blood, and stimulate self-esteem (Shaz et al., 2009). There are comparisons between white American blood donors and African American blood donors from the previous studies related to blood donation; they reveal that African Americans seem to be more interested in a gift or incentives, check for infectious agents, and health screen than white American blood donors. The relevant studies also give a sample of African American women where the major drive for blood donation is the acknowledgement of the need for blood, especially, in healing of sickle cell disease for children.

In contrast, the main barriers of African Americans for donating blood are “scare, inconvenience, perceived medical disqualification, being too busy, not being asked, and apathy” (Shaz et al., 2009, p. 192). These deterrents can link to the previous study of African American women where the main deterrents of blood donation can be ranked as follows: inconvenience, scared of needles, and too much time to complete the process, respectively.

It could illustrate that there are different motivators and barriers among race to pursue blood donation in which they affect the recruitment of new blood donors, as well as strategies for sustaining the existing blood donors. The sample and data of Shaz et al. (2009) are college students from an all female institution and coeducational

institution in the Southeastern United States. The study took approximately three months for data collection and there were online questionnaires as well as hard copy ones to get the data of African American students. The results of participants are 96% of African American students aged between 18-20 years old, which 49% of participants have experience about donating blood. It is interesting that the age and level of education move forward with the tendency of blood donation. In other words, the higher education and age increasingly affect blood donations.

There is more explanation of the major motivators and barriers obtained from the survey. The convenient place for donating blood is ranked as the highest rank of the reasons driving African American students to donate blood, followed respectively by the support of the universities in stimulating students to donate blood, emotions of self-satisfaction, personal request to donate and increasing the knowledge about the importance of blood products in the community of African Americans. On the other hand, there is also an explanation of non-donors which proposes that the reason why they do not donate blood is for medical reasons or ineligibility of blood donation as the most frequently mentioned, such as weakness, insufficient weight, tattoo or body piercing, and so on. After that, the second barrier that was cited is the fear of needles and pain; the rest of the reasons included being busy, or taking too much time for blood donation, not being asked to donate, and inconvenience.

There are also small reasons for resisting blood donation which are people do not know the importance of blood donations, as well as they do not want to donate their blood. Besides that, there are involvements of knowledge and beliefs about blood supply. All participants believed that blood supply is necessary all the time as they perceive many aspects like the shortage of blood in hospitals, and the increasing demand for blood as new developments emerged. Most blood donors seem to agree that there is a safeness of blood supply, their health screens are more seriously checked than the past, and the blood is carefully tested against infectious agents. Consequently, blood donors are less worried about receiving transfusions, and also do not agree that blood donation is unsafe, compared to non-donors who do not think similarly. None of the participants were afraid of the disclosure of positive infectious disease tests or any other diseases after donating blood. Rather, blood donors donate blood for acknowledging the blood testing for HIV (Shaz et al., 2009).

Moreover, there is more difference in barriers than motivators (Shaz et al., 2009). It can say that the most influential factor that positively motivates people to donate blood is the convenience of the donating place. Whereas the feeling of being faint, dizzy, nauseated, and wasting time from school or work are disagreed on by blood donors as they do not consider the given points as the reason for donating blood. Non-donors seem to be worried about the safety of blood donation and transfusions, as well as the infectious disease after donating blood. The campaigns of educational institutions that promote blood donations are very important and affect the stimulation for blood supply and blood donations for both African American blood donors and non-donors in which the campaign should be concerned with the awareness of the need for blood and the safety of blood donation.

The convenience, however, is the most essential to retain the blood donors to come back for the next donation, followed by selflessness or altruism, the involvement of educational institutions, and personal request from BDC. The study of African American student shows that the participants were much concerned about the reasons of humanitarianism, pressure from friends and convenience. These also support the view of students that helping others is a good idea as they could be able to leave the classroom, get free snack or cookies, followed by peer pressure. The survey of African American women reveals that the awareness of the need for blood is considered as an important tool to increase blood donations.

The survey of African American college students (Shaz et al., 2009) pointed that the educational institution should be involve with the promotion or campaign enhancing blood donations such as the knowledge and benefit of blood donation for the African American community in order to acknowledge them to perceive that blood donation is very important and does not take too much time as they think. It confirms that the comprehensive knowledge of blood donation helps reduce the fears of potential blood donors regarding what they are afraid of.

This suggests that the knowledge of blood donation and awareness of the need for blood supply like blood shortages are what educational institutions should pay attention to by launching campaigns that positively stimulate people to increase blood donations. In brief, the convenient place for donating blood is not only the issue that should be paid more attention to, but also the providing of useful knowledge to

potential blood donors is essential that it can also increase the blood supply for a particular community like African Americans effectively (Shaz et al., 2009).

Godin et al. (2012) stated that individual people have different motives which depend on categories of blood donors and whether they return for another blood donation, donate whole blood or specific components, the number times donated, and others. These show that various types of blood donors do not have the same motivators for donating blood. The convenience, however, is still the most powerful attraction of blood donation for first-time and repeat blood donors, particularly in recruiting and sustaining blood donors (Godin et al., 2012).

According to the systematic review of Godin et al. (2012), different approaches generate different results in the aspect of effectiveness, in terms of the type of method and the way of delivery to enhance the quantity of blood donation. The systematic review also points out that dealing with the motivators like selflessness and reminder are the most prosperous in enhancing the higher blood collection. Altruism is the major reason pulling attention from people to donate their blood, especially with women and young people. While telephone call is a successful prompt that reminds and motivates people to return for the next coming blood donation effectively, the given method affects the increase of blood supply faster than other approaches where people are not reminded by telephone to come back to donate blood again at the appropriate time. It also means that people who receive a reminding call from BDC would return for the next donation faster than others who do not have the sign of reminder from blood collection Centre.

The cognitive-based approach that is concerned with the motives, like social norms and attitudes, have the efficacy in stimulating people to donate blood. This way also aligns with the Planned Behavior Theory (PBT) in which one can predict the compatible outcome related to blood donation (Godin et al., 2012).

The method underlining the measurement of cognition, or question-behavior effect, has the effect to individual behaviors as the results of question-behavior effect, in which the asking of questions about relevant cognition, can change individual behaviors as well. The mean of delivery that is recommended for the effective increase of blood donation is the face-to-face approach which can generate four times more productivity than reminding by telephone call, but the method of face-to-face requires more time and cost than telephone call (Godin et al., 2012).

The study, however, collected the sample only from college students, so it could not refer to all the population and it should develop different approaches according to the different types of blood donors in order to increase the number of blood donations from different categories of donors efficiently too. The new technology used in modern society, such as e-mail, short message service or so-called SMS, and so on, could be the new techniques that can gain the attention from people to have awareness and come for donating blood (Godin et al., 2012).

Bednall and Bove (2011) also exposed about the factors that support and obstruct the blood supply which does not focus only on one group of sample by gathering the information from previously international and domestic research in order to assess the effectiveness of various factors toward blood donation and generalize them to all populations. The study starts with classifying the types of blood donors into four categories: first-time donor, repeat donor, apheresis donor, and lapsed donor. It also reveals that the success of blood collection centres comes from the participation of people in each community; thus, the insight of motivators and barriers of blood donation should be beneficial for recruiting and retaining blood donors that align with marketing tactics.

Overall, it shows that the convenience is always the most influential factor that blood donors frequently cited (Shaz et al., 2009; Bednall & Bove, 2011; Godin et al., 2012). The convenience is the motivator that is particularly cited by the groups of first-time and repeat donors. The motivator that stimulates first-time, repeat, and apheresis donors is the desire to help others in the society such as selflessness or altruism because these groups of blood donors believe that their blood can save many lives referring to both people in their community and general people who also need blood. This indicates that altruism as a prosocial stimulator making people want to share and help others willingly.

Godin et al. (2012), additionally, divided the desire to help others in the society into two subsets: altruism and collectivism. Collectivism refers to donating blood particularly for supporting family, friends, or community, while altruism refers to donate blood to general people who need transfusions. There is, however, personal value or moral norms that affects donors' decision to donate blood since individuals have the belief that helping others by donating blood is a moral obligation that they

should do in which it does not concern with their religion, but it is personal belief indeed.

The reputation of BDC itself is the most frequently mentioned by first-time and lapsed donors. In fact, the reputation of the blood collection agency still link to the existing and prospective blood donors (Godin et al., 2012). It could enhance the confidence of them toward blood donation which makes them feel safe about the quality of blood services regardless of anxiety of negative results after donating blood; thus, marketing communication, like advertisements, seems to inspire many people to trust in blood collection agencies; this would make the reputation for BDC as well. After trusting and being satisfied with the blood services experience, blood donors would return and generate word of mouth to tell others that they feel good about donating blood, and definitely the words that they tell other people should persuade prospective blood donors to become first-time donors as well.

There are the blood donors since they perceive about the demand for blood. Especially this group of people refers to lapsed donors as they want to give their blood to help others after they acknowledge the need for blood transfusions, even they are not eligible to do so. More or less, if the blood collection centre can manage the announcement of the need for blood to the public effectively, it could enhance the number of blood donations. Another motive that can drive a group of repeat donors, which is always cited as a reason to donate blood, is reciprocity, which stimulates them to think that it is helpful for their beloved people and they themselves in the future in case that they might need for blood or any component of the blood product. Donating blood for making oneself appreciate and answering curiosity regarding to the process of blood donation are also counted as motives for blood donation, especially for first-time and lapsed donors.

Besides that, there are many techniques related to marketing campaigns of blood donation like face-to-face communication, telephone calling, appeal letter to donate, advertisement, and blood drives at workplaces or convenient locations that are suitable for existing and prospective blood donors. The study shows that using the approaches of appeal letter, telephone call, and face-to-face marketing for increasing blood supply can influence lapsed donors, whereas other types of blood donors do not discuss that the given approaches of marketing techniques can stimulate their intention toward blood donation.

Interestingly, there is the motive of marketing technique that all types of blood donors cite as influencing their willingness to donate blood, which is the blood drives that move to be located at their workplace. Receiving incentives is another motivator that brings the majority of blood donors, like first-time, apheresis, and lapsed donors, to donate blood. Most of them state the benefit of blood donation as a free medical checkup which can stimulate them to come for donating blood. The others types of incentives like money, free checkup for health, taking time off from work or school, knowing one's own blood type, gift, examination of infectious ailment, and official recognition of blood donation from BDC can stimulate apheresis donors to donate blood, particularly in term of money that apheresis donors seem to be more interested in than other types of blood donors.

Social norms and environmental pressure could also motivate people to make blood donations, especially for repeat donors as they donate blood because they think it is a common thing to perform in the society. First-time and lapsed donors are encouraged to donate blood by other people; this shows that social norms from the social environment play an important role in blood donation as a donating motivator.

Besides, Godin et al. (2012) also mentioned about the deterrents of blood donation that generally exist everywhere, not a particular country or ethnic group. The study reveals that the barriers among blood donors are different according to the types of blood donor too. The research exposes that the deterrents are less mentioned than motivators. The most citing of barriers, however, is low-efficacy in which blood donors and non-donors refer to their lifestyles as the barrier to donate blood. Family and work, for example, make them uncomfortable to completely donate blood.

Non-donors claim that their help of blood donation may not sufficiently fulfill the needed amount of blood as individuals always have the reason to support their thoughts. People also report low involvement as a barrier making them never think of blood donation as had never been in their minds. Inconvenience is another barrier that most people cite. Due to the working hour, as well as the location of BDC, it makes people feel difficult to come for donating blood. Both blood donors and non-donors mentioned that the issue that obstructs them from blood donation is marketing communication that more or less stimulate and create the awareness of the need for blood to them.

People also point out many issues as the deterrents of blood donation: unattractive incentives, lack of knowledge regarding blood donation, and dissatisfaction of blood service experience. Unattractive incentives refer to both unwanted gifts and inappropriate incentives that blood donation agencies provide. Lack of knowledge about blood donation is relevant to the awareness of the need for blood in an individual community, followed by place of blood donation where people should go but they do not know or have information about it. In the case of dissatisfaction of blood service experience, it refers to both the performance of staff and the feeling toward the atmosphere of BDC that generates a negative perception to blood donors.

The process of blood donation is relevant to the deterrent toward donating blood since many people refer that they are scared of needles, they are worried about the negative effect of blood donation that might occur like illness, and they do not want to see their blood too. Word of mouth from others who have had bad experiences about blood donation is also a barrier against prospective blood donors to make blood donations. The personal value of people like the belief of religions and so on, is another deterrent that harms the blood supply as well.

Karacan et al. (2013) stated that it is beneficial to study the factors of motivation toward blood donation in order to support blood donation campaigns. Alessandrini (2007) also exposed that there are different motives for donating blood. These motivating factors influence the groups of first-time, repeat, apheresis, lapsed, and eligible donors. Several scholars disclose that the major motives influencing blood donation are:

- 1) The convenience to donate blood like the nearest location, accessibility, etc.,
- 2) The social drives e.g. altruism, and
- 3) Personal value like morality.

Contrastingly, the major deterrents toward blood donation are self-efficacy in which people often claim that they do not have time to donate blood. On the contrary, Karacan et al. (2013) revealed that altruism does not affect the prediction of motivator for blood donation in Turkey. It also refers to the issue of empathy in that it does not affect with the same circumstance of donating blood. Both altruism and empathy have

low involvement in the field of decision making to help others, especially, they rarely affect blood donors who have negative experiences of blood donation and feel uncomfortable related to their health after finishing the blood donation.

Whereas, most scholars show that altruism and empathy have pretty much influence toward blood donation for voluntary blood donors (Davis, Hall, & Meyer, 2003). Steel et al. (2008) also disclose that the factor that has the most influential motive regarding to blood donation is social responsibility rather than altruism and empathy.

Ngoma et al. (2013) observed that the demand for blood transfusions in Japan has increased, while the blood supply from the young generation people is not sufficient. Hence the psychological determinants as the behavior of donating blood should be studied in order to generate an understanding of what issues can support and obstruct blood donation - so-called motives and deterrents. The motives that are often mentioned among Japanese, who are university students, are “convenience and personal value” (Ngoma et al., 2013).

While the most important deterrent among young Japanese university students is fear, particularly, non-donors, regarding the willingness to give blood that involves with the fear of many things like scare of needles, scare of hurt, and scare of seeing their own blood (Duboz & Cunéo, 2010). It is clear that it is imperative to have the comprehension toward blood donation, as well as manipulation of the fear of young blood donors for gaining a higher proportion of blood supply from the group of young people.

Monobe et al. (2006) also stated that the obstacles of blood donation among Japanese university students are fear and wasting of their time. Generally, the inconvenience, low self-efficacy, negative viewpoint, and lack of knowledge about blood donation are the common issues that are always claimed as the barriers of blood donation (Bednall & Bove, 2011). For those, who are not young blood donors, particularly non-donors, have similar barriers as young Japanese university students, which is fear. But non-donors, additionally, have the fear of health conditions and have never been asked to donate blood (Duboz & Cunéo, 2010). The fear of non-donors does not only refer to fear of pain, needles, and the sight of blood, but also the fear of acknowledging unexpected diseases or viruses that might be found after the

process of health screening (Piliavin, 1990; Boulware et al., 2002; Wiwanitkit, 2002; Hupfer, Taylor, & Letwin, 2005)

It has been seen that selflessness or altruism, perception of the need for blood, moral norms, social stimulation, refilling the used blood, and enhancing one's self-esteem are the main positive factors that impact the recruiting and retaining campaigns for blood donation (Gillespie & Hillyer, 2002). The study of African Americans' motives and deterrents showed that this ethnic group of people has been interested in incentives, health checks, and suspected diseases regarding blood transfusions, rather than white American donors (Glynn et al., 2002). African American blood donors like blood donation reminders from BDC by mail, special donating campaigns encouraging them to donate, and participation among the community of BDC (Shaz et al., 2009).

Particularly young African American women claim that the factor that has a positive impact on blood donation is the perception that the sickle children need for blood transfusion (Grossman et al., 2005). For African American university students, the most cited factors are the convenience, the participation of the university, and one's own satisfaction to donate blood as the positive factors of blood donation (Shaz et al., 2009). In a specific group of African Americans who attend a church, the reasons for donating blood are that they want to help another life, and that they know that blood is what many people need (Shaz et al., 2010).

In contrast, the deterrents of blood donation among African Americans are the inconvenience, fear, lack of time, not being asked, unconcerned or apathy, and "perceived medical disqualification" (Gillespie & Hillyer, 2002). Besides that, bad practices and unsatisfactory skills of staff are often mentioned by African Americans regarding the negative factors toward blood donation too (Schreiber et al., 2006). Being scared of needles, feeling of inconvenience, and spending too long are mentioned as the most powerful barriers of blood donation for young African American women (Grossman et al., 2005). African American university students pay the most attention to the safety of blood donations, and the major deterrent of blood donation is the fear of donating blood (Shaz et al., 2009).

James et al. (2013) stated that it is important to have an insight of the differences in motivators and deterrents of blood transfusions in different ethnic

groups of people in order to enhance the strategic promotion in getting new blood donors successfully. The study of James et al. (2013) also revealed that the factors that impact positively on blood donation are taking less than 4 hours for donating blood, being invited to donate, and being tested for whether the level of blood sugar is high or not.

In the aspect of deterrents toward blood donation, James et al. (2013) also showed that uncomfortable place and time to donate blood, fear of needles, pain, afraid of getting sick, and lack of acknowledgement about the place of blood donation. This scholar presents that the various aspects among donor's age, ethnicity, household income, and marital status generate the different outcomes of motives and deterrents of blood donation. There are, however, similar motivators and barriers among different demographic criteria as well. The mean of marketing campaign is the point that seems to be a major motive for the group of lapsed donors, excluding other types of blood donors like first-time, repeat, and apheresis donors (Bednall & Bove, 2011).

Bednall and Bove (2011) also disclosed that individual lifestyles, as well as inconvenient place and time of the blood collection Centre, are what people often mention as deterrents to blood donation. In other words, convenience of place and time to donate blood, and fear of various issues like needles and donating blood, are the major positive and negative factors of blood donation respectively (Grossman et al., 2005; Shaz et al., 2010). The scholar, Shaz et al. (2010), also mentioned that people prefer convenience in the terms of time and place of blood donation, blood drives that move close to their workplaces, as well as donating time less than one hour. Custer et al. (2007) stated that deferral or acknowledgement of ineligible ones regarding blood donation decreases the possibility of blood donation. Dissatisfaction with staff practices and skills results in negative experiences for blood donors, making them not come back for the next donation, especially for "minorities" (Schreiber et al., 2006).

In fact, the main reason of deferral is the low level of hemoglobin, which frequently occurs with female donors, and marketing communication in the community has much influenced the temporary deferred donors as if they have the awareness of the need for blood transfusions, they will return for blood donation again

after the deferral period expires (James et al., 2013). To overcome the inconvenience, BDC should provide blood mobiles located close to workplaces, spread the news of the need for blood, ensure the information is available of sites for donating blood, as well as make people perceive that the time of the donating process is not over an hour. To win the feeling of fear, the knowledge of blood donation, as well as making blood donors confident, are very helpful to diminish people's fear (James et al., 2013).

The previous statements mainly discuss about the motives and barriers of general blood donors, even different demographic characters, but the reasons against the increase of blood supply also refer to deferral. Ngoma et al. (2013) pointed out that the reasons and characteristics of blood deferral in Japan is that blood donation in Japan is received from voluntary donors without remuneration. There is, however, a proportion of deferral rate of blood donation in the case that the prospective donors are ineligible, and this issue is another crucial matter to consider for sustaining and achieving the blood supply.

The problem of blood donation regarding the deferral rate comes from two main groups of people: 1) Young people, and 2) Women. Due to teenagers' lifestyles (e.g. body piercing, tattoo, drug, etc.), while women are often concerned with pregnancy and breast-feeding or lactation. It is also reported that women with the given reasons of deferral have the lowest rate of return for donating blood again, even though they have no more conditions for deferral (Blood Products Research Organization, 2012). The study of Ngoma et al. (2014) also stated about deferral causes since the heart of acquiring an appropriate, safe, and maintainable blood supply is the collection of blood from eligible, low-risk, and voluntary blood donors. This concept is implemented with the process of recruitment for novice blood donors that chooses the blood donors and sustains the existing voluntary donors.

Although, the process of selecting an eligible blood donor is flowed the standard of worldwide blood collection centres, the strict requirement of the screening process also threatens the balance of blood supply versus demand for blood transfusions as if prospective donors are not eligible to give their blood, then they are deferred donors, and there tends to be a low probability that deferrals, especially first-time donors compared with repeat donors, will not come back to donate again even after ending of the deferral period and conditions (Ngoma et al., 2014). The main

reasons of the screening process of blood donations for getting the right blood donors leads to the temporary deferral of blood donations which results from the condition of low hemoglobin and the decision of professional staff after the interview, while the reasons for permanent deferrals are about unsafe sex, use of illegal drugs, and individual “transplantation” (Ngoma et al., 2014).

The difference, nevertheless, in demographic groups also involves deferral reasons. The level of hemoglobin to donate blood, whether it is sufficient or not, is still the most required condition in screening the appropriate blood donors against deferrals. The case of an insufficient level of hemoglobin often occurs with women who come for the first time and they also have problems of insufficient iron stores. Hence, it is important to provide and give information about the requirement for blood donation, as well as the knowledge of how to be an eligible blood donor. This can be established as the guideline of how to solve the problem of iron loss to ensure that the number of deferred donors will decrease, whereas the collected units of blood supply will increase. They should not, however, forget to explain the reasons and solution of deferral every time that donors are eligible in order to encourage them to come back for blood donations again when they become eligible (Ngoma et al., 2014).

### **2.2.3 Psychological Management toward Blood Donation**

The blood supply should also apply the relevant theories and psychology toward the successful increase of blood donations. Since Godin et al. (2012) revealed previously that the Planned Behavior Theory (PBT) is involved with factors like social norms and attitudes which stimulate people to ignore or increase the blood collection to be sufficient as they affect people’s decisions toward blood donation, the outcome can be predicted by applying PBT.

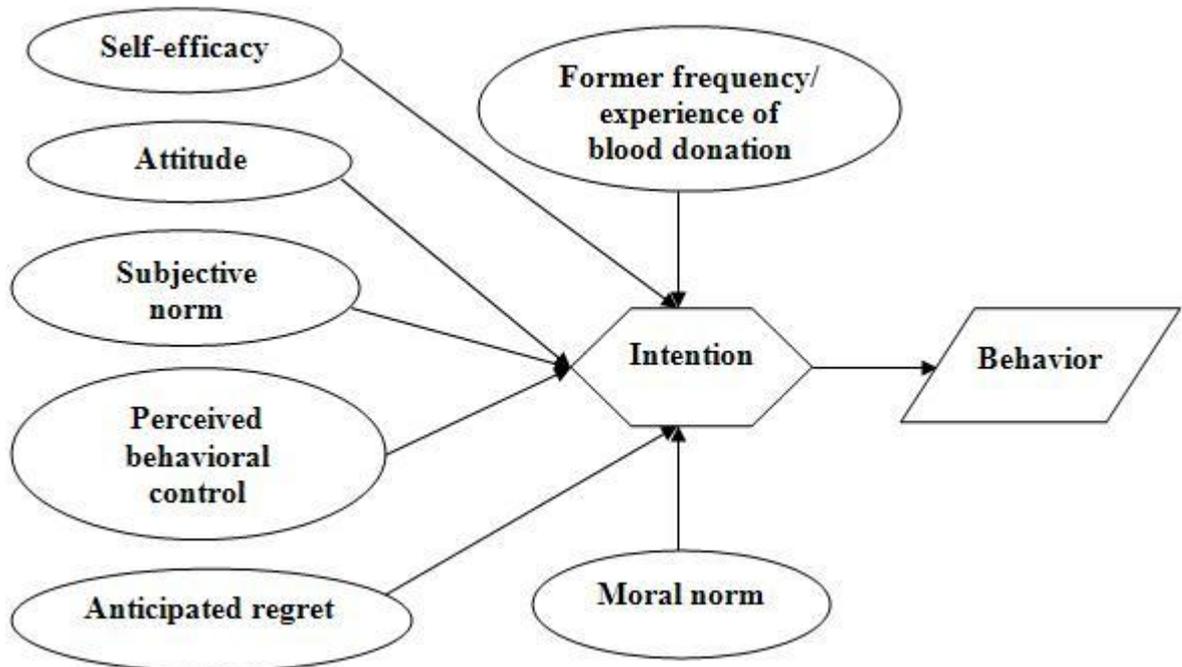
Ringwald, Zimmermann, and Eckstein (2010) mentioned that the change of demographic characteristics tends to affect the insufficient blood supply owing to the importance of existing blood donors. There is also the tendency that the willingness to donate blood by young people reduces, while the demand for transfusions by elders still increases. This implies that to keep blood donors coming back to donate blood again is crucial and necessary. In developed countries, there is about 3% to 8% from eligible population and there is only 1% of blood donation receiving from people who

frequently donate blood. It is reported that 50% or above of first-time donors will not come back again for the next blood donation. Hence, it seems to be an important task of blood collection agencies to convert first-time donors to be repeat donors by utilizing the PBT and relevant psychological motivators as retention of the existing blood donors is the key success for increasing the blood supply.

Repeated blood donors are people who have been tested and certified to be qualified donors with cost-efficiency as they are more likely to return for the next donation and they could bring new blood donors that can fulfill the need for the blood supply too.

Making first-time donors become repeated blood donors requires blood collection agencies to communicate with blood donors immediately at the point of beginning together with trained staff who know how to motivate and treat blood donors professionally, as well as reducing blood donors' worries by providing the feeling of convenience to donate blood. There is also a theory that can be applied to manage motivation of blood donation - the PBT. This theory focuses on the intention of humans in which he/she would act according to what one perceives as a good outcome to do a particular thing, or sometimes a person believes in oneself's ability to do something completely.

It is necessary to have a psychological comprehension of blood donors in order to motivate blood donors appropriately. More insight of psychology for increasing blood donations could apply with the given theory. Self-efficacy, for instance, is about knowing whether blood donation is easy or difficult for oneself to make it complete. Moral norms also affect people's behaviors if they realize that it is good to donate blood and vice versa. There is also a figure explaining the PBT regarding blood donors' intention toward behavioral blood donation (Figure 2.3).



**Figure 2.3** External Factors Regarding the PBT

**Source:** Ringwald, Zimmermann, and Eckstein, 2010.

Figure 2.3 presents that there are many external factors that affect the behavior toward blood donation; even though those factors do not come internally, they still have direct effects on the intention of human's mind though, resulting in a particular action or behavior. This reflects that the decision of blood donors about blood donation comes from their own internal feelings (Ringwald, Zimmermann, & Eckstein, 2010). There are many external factors that influence people toward behavior or change their mind regarding donating blood as well.

Ringwald, Zimmermann, and Eckstein (2010) implied that the external factors that directly affect intention and finally impact to a particular performance could generate the negative effect toward intention, such as inconvenient place or environment, unsatisfactory staff, taking too long for the donation process, and others. Therefore, it is better to create something that internally motivates blood donors to keep in mind that donating blood is what they should always perform.

Ringwald, Zimmermann, and Eckstein's (2010) study also stated that demographic factors of the target population in each particular area is another thing

that should not be ignored, and BDCs need to understand because there are various cultures, beliefs, norms, political and social perspectives, as well as unexpected circumstances that drive people to behave differently. In other words, it means that to study the motives which influence people to come back to donate blood could help BDC launch promotional campaigns successfully. Schreiber et al. (2006) reveal that people with an age lower than 30 years old, female, and with a lower level of education have a higher tendency to come for the next blood donation, while, those people with a higher educational level have less possibility to come back for the next donation.

Dodd et al. (2002) also presented that people between ages 16-17 years old always come back to donate blood rather than those in other age ranges. Interestingly, it is also disclosed that most people who frequently donate blood are male living in urbanized areas.

In contrast, the study of Misje, Bosnes, and Heier (2009) differently disclosed that women younger than 45 years old in Norway have less potential to return for another blood donation due to a pregnancy and lactation as the main reasons to claim for not coming back again. Of these studies are showing that different areas with different demographic factors result in different possibilities of blood donation.

Gillespie and Hillyer (2002), however, stated that the proportion of qualified blood donors have been reduced owing to the improved process of screening for malady relating to infectious transfusions; this causes the disappearance of roughly one-half million blood donors every year. The new regulations for avoiding harmful diseases negatively decrease the number of voluntary blood donors by approximately 3% as well. There are many blood collection Centers trying to expand the amount of blood donations from new and existing blood donors. Unfortunately, it seems that what they need could not be completely fulfilled, even they received funds to support the activities due to many factors that have to be reconsidered in order to pursue the right solution.

The repeated blood donors show the higher potential to support the blood collection than first-time donors, even though the obtained proportion of blood donations from repeat donors is such a small proportion, but it can ensure that this group of blood donors is responsible for supporting the need for blood perfectly not only in the United States but also other countries in the world.

Moreover, the characteristics of blood donors can also help to consider and predict the responsibility of donors who are suppose to return for another blood donation. In general, the characteristics of blood donors in the United States are middle-age, white male volunteers who like donating near the infirmary (Hillyer, 2002). The obtained data recently showed that most donors are married people who have a kid or children, and they are the ones with the rare types of blood compared to non-donors.

Particularly, the high feasibility to become repeat donors is white men (Oswalt, 1997). If classifying by gender, donating blood from male donors is more than female donors, but the number of women has increased recently compared to earlier decades. The age of donors who frequently donate blood changes all the time depending on the size of population and the donor type studied. There is a study of donor race and place of birth where surveyed donors joined the “Retrovirus Epidemiology Donor Study (REDS)” (Gillespie & Hillyer 2002) exposing that there is a decline in the figures of white donors everywhere, while white there is increasing the small number of donors, especially, those are Hispanic (Wu et al., 2001).

In the aspects of educational level and income of blood donors, it showed that repeat donors have a higher educational level than first-time donors, with at least a college education (Ownby et al., 1999). This shows that the level of education and income of blood donors have the parallel direction in which they are higher than the possessed levels of nondonors. There is a correlation of blood donation in Greece with occupation, gender, and educational level in which the majority of donors are male, in the armed forces, and with a high awareness of the need for blood, as well as the knowledge of blood donation (Chliaoutaki et al., 1994).

In the part of elderly donors, the majority of them are older than 63 years old, white, married people, who are wealthy and have high level of education. It is interesting that even though the elderly donors are expected to have problems about the conditions of health that might not meet the requirements for eligible blood donors, it is opposite with the expected concern since mostly elders qualifyied to donate blood.

The study of Gillespie and Hillyer (2002) found that the number of first-time donors has decreased, which reflects the attention toward blood donation. To attract

attention to the right target, Wu et al. (2001) found that blood collection agencies should target blood donors amongst high school or college students, particularly white men.

For the side of repeat donors, this group of people give a high commitment to blood donation resulting in “78% to 79% of all donors” (Piliavin, 1990) being repeat donors. It is suggested that the strategy used for getting new blood donors and sustaining repeat donors, should focus on the motivational factors and characteristics of them (Wylie, 1993; Royse & Doochin, 1995). There are two ways of acquiring the total number of blood donations adequately: stimulating the recruitment of first-time donors, and sustaining repeat donors for the next donation. these approaches can further increase the blood supply and are a long-term benefit for the blood collection Centre (Tucker, 1987).

The possibilities that BDC should pay more attention for pursuing repeat donors are about 1) “the shorter time interval” (Gillespie & Hillyer, 2002), 2) the older age of people as the increased ages have a higher proportion of blood donation than younger people, 3) the high level of education as higher education shows high repeat rate of donors, and 4) people with “Rh-negative status” (Gillespie & Hillyer, 2002) or rare blood types. These given issues show a high repeat rate of blood donors (Ownby et al., 1999).

In conducting promotional campaigns to support blood donation, it should be kept in mind that recruitment and retention programs are not the same; therefore, to launch retention campaigns for existing blood donors, advertisements should be applied that blood donors are interested in like how to encourage the self-efficacy and be eligible toward blood donation. Ringwald, Zimmermann, and Eckstein (2010) stated that it is necessary to communicate with blood donors suddenly at the point of blood donation since the beginning, and blood donation agencies should deliver the appropriate types of invitations like letter, telephone call, e-mail, or new communication technology (e.g. Facebook, Instagram, Twitter, etc.) in order to keep in touch and remind them to come back for the next blood donation. These methods also enable them to get new blood donors as their friends, colleagues, families, and so forth.

As the busy lifestyle of living and lack of time for people who live in the modern society may cause people to forget about the time of the next blood donation, individual reminding of when the next coming donation is important. It should also look at blood donors' interests in order to apply the promotional media successfully. Blood donation agencies should make blood donors feel like they are a part of the blood supply's success (e.g. giving blood donor card, certificate, or any sign presenting thankfulness from BDC), and then they would be proud and willing to support blood donation.

The most reason driving people to give their blood, especially for first-time, repeat and apheresis donors, is the comfortable site of blood donation such as the easy accessibility which this leads to higher blood donation (Wu et al., 2001). BDC should also utilize a website to facilitate blood donors to see the necessary information like the schedule of blood drives, place, time, look for a comfortable location, time to access the site, and book the appropriate time for blood donation. It is also recommended that sufficient staffs, blood mobiles at comfortable locations, more opening hours of BDC as ideas for developing the convenience issues of blood donation which enhances the increase of blood collection as well.

Another considered point is that the staff of BDC must be trained professionally to make blood donors happy and satisfied; unless they are well trained, the negative feedback from blood donors might follow, affecting the overall image of BDC which also generates the unsatisfied perception regarding the experience of blood donation, and this might negatively spread to the society. The worry of donors about blood donation should be protected and reduced by selecting the appropriate tools of advertisement. The images, for example, of needles and blood bag or blood, are not suggested to present on the advertising media as they stimulate the anxiety of blood donors against increasing blood supply. It should be represented in a way that cheers them up (Wu et al., 2001).

In the brochure that may be used to support the marketing communication of BDC, there should contain the necessary information for blood donors (e.g. the need for blood transfusion, who will be benefit from their blood donation, what are the risks and worries regarding blood donation). If the brochure can provide sufficiently important information, the worries about donating blood of prospective blood donors

would be diminished; this is the way to protect blood donors' anxiety. There are various ways to support the reduction of worries like music, games, television, and others, which help relax people to donate their blood.

Creating a blood donation experience is a smart technique to keep blood donors come back for the next donation. This also refers to the skilled staff, convenience, and regards of unexpected events that may be harmful to blood donors. Therefore, making blood donors feel good with physical and psychological conditions should be implemented for generating a higher number of blood donations for both novice and existing blood donors.

In fact, there are incentives that blood collection agencies can use to motivate blood donors, but it is not important enough to pull attention from blood donors since the relevant scholars expose that offering high value incentives could destroy blood donors' intention toward blood donation as the high value of incentive would make them ashamed because most blood donors donate blood with altruism rather than considering the value of the offer. It must be careful to select and offer the incentives of blood donation, especially nonmonetary gifts that can decrease the commitment toward blood donation because it is the sensitive issue to some types of people.

It is not everyone who is eligible to donate blood at a particular period of time due to some health conditions and the risk of individual lifestyles e.g. tattooing, taking illicit drug, etc., concerned, making some people become temporarily deferred blood donors, while some people become permanent deferred blood donors. This deferral affects the decreased rate of blood donation so, it is important to remind temporarily deferred blood donors to come back to blood donation site again when it is the time that they suppose to be eligible to donate blood. Blood donation agency should not forget to explain by giving deferred blood donors the reasons of deferral donation, why they could not donate blood at that time as well as the guiding of how to become eligible blood donors, in order to keep blood donors' attention and stimulate them to come back for donating blood again when it is an appropriate time.

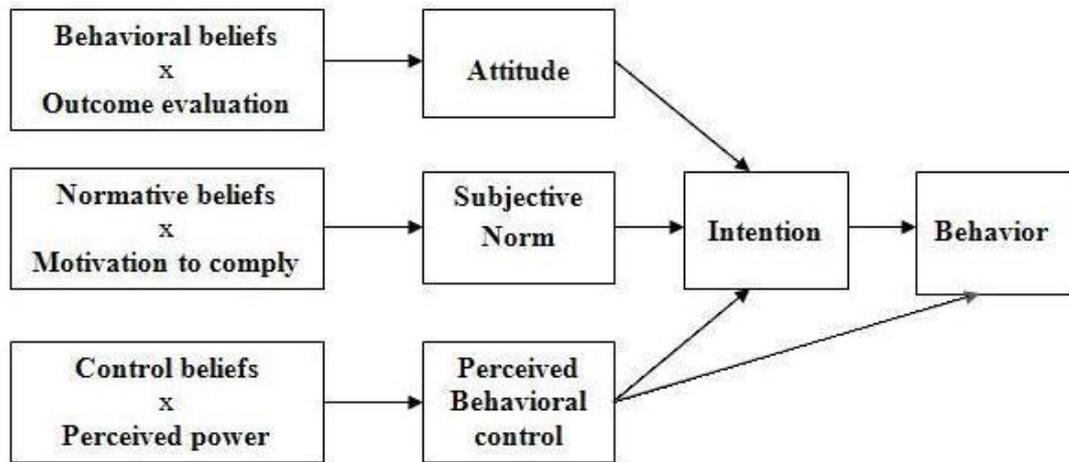
Katz and Kabat (2007) disclosed that it is important to improve the method that supports the way of pulling temporarily deferred blood donors back to blood donation site like using of automatic machine that could deliveries the invitation message of blood donation to all those of deferred blood donors shortly prior to the

expired period of deferrals. This tool can apply to keep in touch with all blood donors promptly too and this way can increase the rate of return for deferral blood donation successfully. It is also emphasized that blood donors should not forget to find the interest of blood donors and use the right marketing approach to stimulate them appropriately in order to pursue the expected increase of blood donation. The marketing promotion of blood donation, for instance, may create the awareness of the need for blood, especially, for the group of donors who are interested like the sick orphan children, etc.

Another issue that seems to be crucial for pursuing the higher blood collection is asking the useful information from blood donors like the plan of moving their residence in ahead future, in order to keep in touch and be ready to guide the appropriate sites of BDCs where suit to them and they want to go to that site willingly too. Besides that, BDCs have to keep the good images toward surrounding communities for maintaining the reputation of BDCs as some blood donors are not affected by any motivating factors but the reputation of BDCs themselves make them readily willing to donate blood. This also refers to the information of BDC on the website as it is necessary to provide the needed information to blood donors in order to let them acknowledge and choose the appropriate channel of blood donation suitably.

The study of psychology of blood, donors particularly, the movement of first-time donors to be repeat donors needs to consider the relevant theories such as the PBT, which is used to anticipate the trend of blood donors' behavior related to their intention of blood donation Godin et al. (2008). There is scholar stating that the PBT is the proposition that intention is considered as the "closest factor of behavior" (Masser et al., 2008). Intention itself is affected by attitude (the result after estimating the acting behavior), subjective norm (recognition of society's force to perform acceptable behavior), and perceived behavioral control (recognition of powerful matter over executing behavior). The given factors have roundabout relationship toward behavior through intention. Besides intention, perceived behavioral control also has the direct impact on behavior in which that behavior is not acted with desire.

Masser et al. (2008) also presented the model regarding the PBT and explain the involved relationship among them toward the decision of blood donation or behavioral blood donation, please see figure 2.4.



**Figure 2.4** The Model of the PBT

**Source:** Ajzen, 1991.

The figure 2.4 exposes that the concept regarding beliefs toward behavior, anticipation-value idealism concept, attitude ones, could be stimulated by beliefs relating to the outcome of behavior measuring from the significance or value that is laid on the outcome. Subjective norm can be considered from expectation factors of particular ones and parties that are measured by individual impetus.

The perceived behavioral control also grounds on belief which “a self-game determinant” (Masser et al., 2008) with attitude and subjective norm. The insight of beliefs can be utilized by separating the two sides of behavioral groups: “performer vs. nonperformer” (Ajzen & Fishbein, 1977) in order to create the right project regarding to enhance execution of interested behavior effectively. Conner and Spark (2005) stated that intention is determined as the most powerful prediction of behavior, in which subjective norm has less expectation toward intention, comparing to attitude and perceived behavioral control.

All of the above description about the PBT’s variables can usefully anticipate about the intention and behavior of people toward blood donation. Ferguson et al. (2007) also point that intention is an only one predictor of behavior through evaluating the performing of behavior. It is also necessary to know about the control factor, like the social control, that influences the intention toward blood donation

(Ferguson et al., 2007). The judgment, however, whether or not to donate blood, depends on the aspects of ethical principle as well as the possibility consequence relating to donate blood such as scare, and worry for someone (Armitage & Conner, 2001; Farley & Stasson, 2003; Godin et al., 2005). It is noted that one of the direct impact on intention is moral belief that influences people to come for blood donation and moral belief also roundabout the relationship with intention through attitude (J. France, C. France, & Himawan, 2007).

It can only state that moral belief has the important influence with blood donors excluding nondonors (Godin et al., 2005). It also revealed that the perceived behavioral control or the control factors, and predicted regret can predict the intention significantly. There is one more that should consider for improving the movement of career types of blood donors from first-time donors to be repeat donors for the bright future of blood supply (Piliavin, 1990).

Callero and Piliavin (1983) determined that when the cognitive impetus level augments, the impact of social influence should be reduced. From the relevant studies, the moral belief seems to be the major role in retention of blood donation placing on behavior. Ajzen and Fishbein (1980) stated that the PBT is the premise that the judgment whether to donate blood according to reasonable and methodical approaches that are relevant to the existing information for making consideration. The given premise does not involve with the individual sentiment which may also affects people's decision on blood donation (Richard, Pligt, & Vries, 1995).

In the aspect of worry, Abraham and Sheeran (2003) refer to the circumstance that people may think about the expected disappointment of blood donation while blood donors who have experience in donating blood associate with bad feeling, not worry, due to lack of success in donating blood (Richard, Pligt, & Vries, 1996).

Godin et al. (2007) reiterated that the expected disappointment or regret has on essential impact on behavior of blood donation, referring only to people who use to donate blood previously. This means that experienced blood donors do not want to meet the response of terrible emotion like disappointment about the lack of success in blood donation. Many scholars indicate that blood donors' habit or behavior in the past can better predict the behavioral trend of blood donation rather than the concept of PBT (Bagozzi, 1981; Piliavin, 1991).

Charng, Piliavin, and Callero (1998) gave a definition of habit that is a half-automated performance related to “a well-learned behavior” (Charng, Piliavin, & Callero, 1998, p. 305). It could say that blood donation happens as it is just what one does, or just want to do so, without the carefully rational determination. For blood donors who donate blood frequently but not over five times. It seems that intention is the exclusively important “predictor of behavior” (Charng, Piliavin, & Callero, 1998). While habit or behavior in the past, especially, to blood donors with five times or above of blood donation experience, is the important in prediction for behavior of blood donation (Ferguson & Bibby, 2002).

Piliavin and Callero (1991), however, indicated that the blood donors who often donate blood, not only once but also many times, the most influential factor of behavior is habit preferably than intention. There are also other factors that can change donors’ minds resulting to behavior of blood donation like the location of blood mobile; this shows that no matter intention or behavior can always be transformed (Godin et al., 2005).

Another point that has the impact on behavioral blood donation is self-identity, the perception that people realize as they have an important role to perform a specific duty in the social living. There is a connection between self-identity and the intention toward behavior found on the “identity theory” (Stryker, 1968; Stryker, 1987). Once behavior is reproduced frequently, self-identity seems to be influential to the future determination rather than any major factors under the model of PBT (Chang, Piliavin, & Callero, 1988). This means that once blood donors perceive the self-identity as a particular duty to donate blood, they possibly return and complete their responsibilities. Chang, Piliavin, and Callero (1988) also said that behaviors in the past have an important relationship with the behavioral blood donation. Healy (2006) stated that the heart of worldwide blood donation concept for sustaining the existing blood donors is such an essential matter. It is quite relevant to, the approach that persuades novice blood donors to come back for their next donation at the appropriate time, and the progress of developing the career types of blood donors as well (Godin et al., 2005).

Piliavin and Callero (1991) suggested that the attitude, acceptable norms, beliefs, and control factors, toward the intention have the significant impact on first-

time blood donors' behavior to return for future blood donation. First-time donors have about anticipated worry and disappointment concerns involving with their intentions to donate blood (Ditto & France, 2006). Moral belief is also counted as the supporter of behavioral intention (J. France, C. France, & Himawan, 2007). The technique that is used in sustaining first-time blood donors is the special treatment showing care of them by reducing their worry, concerns about any fear and negative images of blood donation, and convince them that they can do it, etc.; these techniques can motivate them to come back again for further donation in the future (Meade, France, & Peterson, 1996; Abraham & Sheeran, 2003).

Ferguson et al. (2007) stated that motivating first-time donors to become repeat donors should make them act like their habit, rather than reasoned decision, such as seeing blood drives or donating centres can frequently remind them to return for another donation at an appropriate time. As habit itself can change overtime, which is not sufficient to sustain blood donors in the long-run due to the environmental factors like time, site, and staff, are influential to them too (Wood, Tam, & Gerrero, 2005). Custer et al. (2007) also confirmed that it is not everyone can donate blood whenever they want since there are the surrounding circumstances involved and these factors affects to blood donation behavior such as moving to new workplace, motivation of friends and families, changing the pattern of living, location, opening and closing times of BDC, and so forth, which have much effect on vulnerable intention toward blood donation behavior or habit.

Collier and Callero (2005) mentioned that it is a good idea to motivate first-time donors to have the awareness of particular in social as a blood donor, this step should start with supporting their habits that frequently come to donate in which they perceive the value of their giving, and then making them devote themselves as an important part of the social giver. This approach is little affected from outside as if BDC can make first-time blood donors to have internal recognition of their role toward blood donation; no matter there are some disturbances involved, they definitely do not stop their intention to accomplish their duty as a blood donors (Sanchez et al., 2001).

The way of implementation regarding the support of donating behavior would be greater in case that there are some gifts showing the thanksgiving for their donation

such as a small token or symbolic sticker, to show their devotion. It should avoid offering a valuable or expensive stuff like cash or “gift voucher” (Sanchez et al., 2001) because it is a sensitive issue for some people, even the fact they would like to donate blood but when acknowledging that they would receive an expensive incentive in return, they are more likely to step back from BDC (Robertson & Reicher, 1997). Such threat harms the blood donors’ will (Heider, 1958; Robertson & Reicher, 1997). It can say that blood donors who have self-identity in their mind do not care about the beneficial return of blood donation, no matter how valuable it is, they would keep donating blood properly as it is their responsible role to do so for the society (Turner, 1978).

Since the blood donors who already have the habit of blood donation, it would be greater if blood donation agency can adjust their inner habit to become self-identity instead (Collier & Callero, 2005). It is important to successfully think of the strategy for changing their habits to be role-identity. Callero (1985) said that the commitment as a role-identity of blood donors can make them perceive themselves as a member of social givers and this better enhance the behavioral blood donation than offering an expensive gift to donors. It should not ignore that the responsibility of blood donors even ones who have self-identity in their mind, can also move backward if they face with deferral donation (Cross & Markus, 1994).

There are also, however, the strong obstacles destroying both potential and existing blood donors’ intention, worry, and the afraid of neurocardiogenic syncope or vasovagal response, that quite impact the will of blood donors since they may think about the bad effects after donating blood (Sauer and France, 1999; France et al., 2004). Kolins and Herron (2003) indicated that the deterrent that harms young potential blood donors, particularly, those with “generation X” (Barbara et al., 2008), is the inconvenience and thus, this barrier much affects their will and behavior toward blood donation. Callero and Piliavin (1983); Godin et al. (2007) suggested that since the beginning period of blood donation, for first-time donors, is very essential phase to create the first impression for making them come back to donate again in the future. Most repeat donors perceive that they are eligible and have self-efficacy to continue donating blood to society, whereas, ones with low self-efficacy will not come back again since they have the bad experience about blood donation even it is not BDC’s fault, they feel that they couldn’t further give any support in donating blood anymore.

The fundamental components of blood donation, for example, short waiting time to complete the process, offered gift, etc., influence blood donors to repeat donating blood. The study of Callero and Piliavin (1983) showed that the shorter period of waiting time can pull blood donors back to the donation site as they feel comfortable to do so without a long waiting time. Blood donation agencies have to consider the consistency of the fundamental elements of blood donation as sometime it can harm the intention of donors even they have a good attitude and moral norm about donating blood. It is also a duty of blood collection agency to follow blood donors who disappear at the time that they should present for donating blood, by telephone call, e-mail, etc. The method should offer the choices of time to donate in ahead future as well as the available donation places that are suitable to them, and finally, asking them to specify the coming time for the next donation with the encouragement to come back at the appointed time (Lipsitz, Ferguson, & Abas, 1989).

Wood, Tam, and Gerrero (2005) pointed that the interesting aspect that blood donors who come with the stable context or circumstance as external factor does not impact the behavior of blood donors, that seems to easily return for next donation, as if it is intrinsic habit supported by static environment or surrounding context, it is hard to change donor's mind to reject the repeated donating blood. While changeable environments, like structural component of blood donation site, social factors, and so on, can influence the intention of blood donors toward behaviors with the perception of uncomfortable situation to come for the next donation (Harrington et al., 2007).

Many people come with intention to donate their blood but the results are appeared as lapse, it is a crucial task of blood collection agency to provide the knowledge of how to make blood donation as an easy process to perform in order to keep them coming back for donating blood as their units are valuable to other lives. Moving the habit, however, of blood donors to have self-identity is the main approach to sustain blood donors in long-term. No matter what factors or impacts from outside affect, the blood donors with role-identity in mind almost are not affected, and thus, creating "self-verification" to them should be implemented in order to make blood donors perceive that they are one of the important givers who have the role to donate blood to another life in the society (Kolins & Herron, 2003).

#### **2.2.4 Blood Donation in Time of Uncertainty**

Besides the insights of the relevant theory and psychology regarding to the improving for blood donation, BDC should also prepare the readiness about the unexpected circumstance that may occur and affects the demand for blood transfusion. This refers to the blood donation management under the uncommon situation like uncertainty.

Morgan et al. (2014) revealed that catastrophic events can have effect on the business continuity in blood services in which two case studies regarding to the event with potential catastrophe affecting the national blood services of Australia and United Kingdom. The study explores the real-time response as well as recovery action that were consistent with prompt emergency plan. The business continuity of blood service centre from this article emphasizes on rapid responding and coping with unexpected crises.

In another word, the successful results of both cases came from emergency response plans for recovering the incidents, and the clear direction and control of leadership and staff that co-operate with the supports of external organizations. The explicit emergency procedures including communication mechanism that is critically utilized during the period of uncertainty in which the capability of mass messaging is needed to be considered in order to convey the important message to all staffs in organizations and stakeholders (Morgan et al., 2014).

The first place that Morgan et al. (2014) mentioned is blood service centre in Filton, United Kingdom. Filton blood transfusion service centre is responsible about more than 40% of national blood production, manufacturing, and testing that also include all blood components. On Monday 24 September 2012, there was a floodwater coming inside the building which affected the whole operation of blood service centre due to the power was shut down affecting all ongoing electric devices and management systems of blood transfusion service (Morgan et al., 2014).

However, the situation was in controlled by the effective uncertainty management approach in which the necessary support from external agencies and important stakeholder were associated. During the period of flooding, the blood service was provided elsewhere and blood stocks were also transferred to other places. In addition, the IT network system which was the heart of blood service

operation was repaired since the day after flood entered the building, and it was fully functional in the next day (Morgan et al., 2014).

Moreover, the first issue that Filton blood transfusion service centre paid much attention was the cleanness of building to ensure the all functions in the centre were still under the standard of WHO; there were continuous maintenance and cleanliness for making blood services centre aseptic and ready to be utilized normally again. Nevertheless, there was deregulation for some issues applied, it also still met minimum requirement (Morgan et al., 2014).

Additionally, the alternative blood supply was coordinated to support the hospital at the time of uncertainty; the great effort from local and national emergency teams as well as workforce collaboration that generated the excellently controlled circumstance resulting to the situation became properly within 2 weeks after. The business continuity was effective without any abnormal complaint or mistake that might follow unless Filton blood transfusion service centre have emergency response procedure promptly. Filton blood transfusion service centre did not only pay attention to the real-time response and recovery approach but also searched for the cause of incident. It found that some part of culvert was broken and the pump was insufficiently installed. This made the centre modify them to be proper and adequate for potentially abundant coming of water level (Morgan et al., 2014).

The stated case gives the lesson that the collaboration of every essential departments both inside and outside organization is the issue that must be planned for recovering the incident, especially the command and control approach need to be adjusted; the number of participant for emergency response and recovery must also be considered which referred to both local and national emergency teams; the national provision of blood components must be reconsidered for dealing with the unexpected event; the essential trainings must be improved and provided for coping with the emergency; the effective communication for mass messaging must be prepared; and the threat and risk measurement must be monitored regularly too (Morgan et al., 2014, p. 155).

Another case study of keeping the business going during unexpected event of blood collection Centre is about the failure of Australian blood network management system. This case shows that having the manual contingency plan in advance can help

solving the urgent circumstance promptly as the BDC can cope with the unexpected event within 42 hours. Australian Red Cross Society is the sole blood supplier in Australia that manipulates both metropolitan and regional sites of blood collection centers.

In the early morning around 4am on July, 24, 2012, there was the failure in IT system for dealing with blood collection management, this failure affected all data as well as the application used; these caused the computer network system inaccessible. The situation of failure for this place appeared only 42 hours in which the ordinary activities of BDCs could also still continue properly by implementing the manual contingency approach meaning that the all works that related to computer system were changed to be manual works instead during that time.

The situation of applying manual contingency procedure was the utilization of disaster recovery system which made a steady environment providing the operation kept going smoothly even though the capacity of performance was diminished. This required the seriously looking after for the operational activities vs. system loading. When the BDC faced with this kind of unexpected error, it must ensure that all of the important activities could still move forward properly so, the business continuity plan must be applied immediately since the situation of the whole national system of blood management was outage.

There were also two major parties of responsible agents, like the previous case of Filton, national and regional emergency management committees. The national emergency management committee was the one who assigned and ranked the important business activities of individual region, while regional emergency management committee had to handle with the local operation; the standard of blood quality control was still maintained manually (Morgan, 2014). There are also state agencies, National Blood Authority and Therapeutic Foods Administration involved supporting the situation; they assisted Australia Red Cross Society to accomplish the recovery.

The extra working shifts of staffs was also required to sustain the blood supply to various hospitals; this included night working shift for continuing business activities run properly throughout 24 hours a day. To enhance the speed of problem solving, the necessary requirement like outsourcing the expert in a particular field is

very important and helpful to speedily resolve the failure of network system to become properly. In another word, it did not need to be the people inside BDC to solve the problem of network failure but the external expert who can bring the normal situation back to the Centre shortly was recommended (Morgan, 2014).

The way of getting rid of fear for blood donors should not only consider for the normal time of blood donation but also the urgent time of uncertainty. In French, the approach for pursuing the large amount of blood during the wartime in 1939 used the wooden barracks as the place of BDC and it only allowed donors to give their arms for donating blood through the wooden aperture of partition without seeing their' own blood while donating blood. This is a good technique to support marketing communication about the news of the need for blood that shows only the picture of arm through the hole of partition which can reduce the fear of people in case of seeing blood, resulting that thousands of people in the country came for donating blood.

Nollet (2013) indicated that planning and implementation would bring about the great understanding of uncertainty management in which the unexpected event may be in the forms of natural disaster or even the man-made disaster. The advances technique is not the most required equipment but it is necessary to have at least a medium like radiobroadcast that can publicize the need for blood to the public in order to make blood transfusion run smoothly during the time of uncertainty.

Reviewing the article regarding blood support in warfare of Rentas et al. (2012) presented that conducting the contingency plan for any unexpected situation is imperative indeed. It must have the cooperation with other institutes to ask for the assistance in time of unexpected situation, so it requires understanding the current situation and supporting one another even across the nation in order to successfully transfer the need for blood promptly at the right time and place.

It must establish ad hoc Centre for an urgent situation to collect, manage, control, test, and transport the required amount of blood; it is suggested to have doctor to support at the ad hoc site during the urgent time. The appropriate plan includes the necessary equipments, and trained staffs are also required to be prepared for an emergency case. It is imperative to calculate the essentially required amount of blood in advance by estimating with current and future needs.

The information, tools, trained staffs, techniques, and approaches for obtaining blood like interviewing process, quick screening mechanism, the way of maintenance equipment, etc., must always be updated promptly. This also refers to the clear contingency plan in detail for each section to cope with unanticipated event. Besides that, it is a great plan to have the obtained amount of blood over the actual need due to the unexpected event or uncertainty may happen anytime which may also require higher amount of blood, so it should be prepared in advance (Rentas et al., 2012).

### **2.3 Blood Donation Management of NBC of Thailand**

NBC is, one of the agencies under Thai Red Cross Society, responsible for daily collecting 1,500 blood units or at least approximately 45,000 units in every month to the many hospitals in Thailand. If it cannot collect the mentioned number of blood donation sufficiently or less than 1,500 blood units a day, it would be considered as insufficient units of blood donation. Especially, in time of political turmoil in 2010, the director of NBC (2015) stated that there were only one blood donors walked in to donate blood at NBC as the others could not easily come to the site surrounded by the political protesters. This situation made NBC target the blood collection outside the site by depending on blood mobile unit instead.

There are about 77% of blood donation obtained from blood donors used to replace the used blood in different situation e.g. accident, surgical operation, childbirth, gastritis, etc., and there are 23% used for healing particular diseases like thalassemia, thrombocytopenia, hemophilia, etc. The daily goal of NBC is to collect number of blood units differently according to the blood types in which blood groups of A and B require 400 units, blood group of AB requires 100 units, and blood group of O requires 600 units (Thai Red Cross Society, 2013).

This presents that the blood collection approach does not only refer to whoever but also the type and characteristics of blood donors. Since there are some types of blood donation like apheresis donation that nowadays it only allows male donors to donate platelets. Therefore, the perception relates to personal information of blood donors is also be applied with the particular blood donation campaigns in order to collect blood units efficiently aligning to the target group of blood donors. As

blood never been sufficient to the increasing number of demands which requires promotion or campaign to support the blood supply of NBC efficiently (Thai Red Cross Society, 2013).

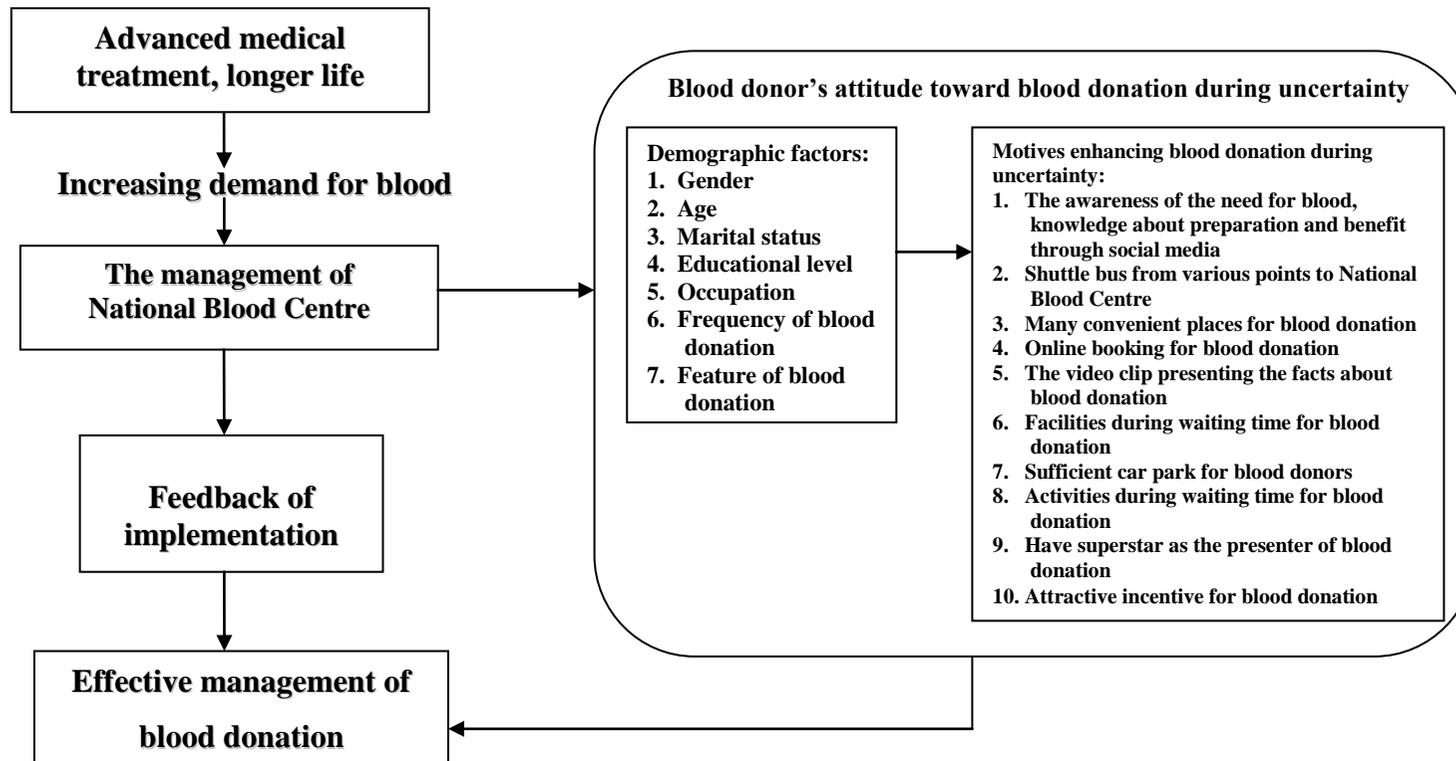
## **2.4 Conceptual Framework**

The conceptual framework of this academic research is applied mixed research methods starting from qualitative approach by studying how NBC manages the blood donation for sufficient distributing to the total need for blood of the whole country. The study also refers to the interviews for the management approach of blood donation from the Director of NBC who has the authority about the decision-making of blood donation management. After that the researcher would interview the officers about the feedback of existing blood donation management; this would also includes the issues that they think authorized-decision maker should consider for improving the management of blood supply to meet the unstable blood demand.

The important motives that suppose to enhance the management of blood donation particularly in time of unexpected event will be applied in order to support the management of blood donation by asking the respondents about their attitude toward each of providing motives in the questionnaires. The given motives that are used in the questionnaire gathered from the suggestion of officers and the insights on literature reviews related to the main concepts of key determinants for enhancing the better management of blood donation during uncertainty.

The conceptual framework, moreover, is made upon the literatures about general blood donation management, blood donation in uncertainty, motivators, barriers, and psychological management as well as the suggested issues gathering from the interviews of NBC's officers in order to improve and make the better management of blood donation. This is also expected to contribute the effective blood donation management of NBC for generating daily blood supply sufficiently for the whole country.

The following figure is to examine the conceptual framework of the study which focuses on NBC's management of blood donation.



**Figure 2.5** Conceptual Framework of Mixed Research Methods

The previous figure shows the main conceptual framework of mixed research methods combining of qualitative and quantitative approaches. This conceptual framework will be further analyzed by the questionnaires and interviews with the sample of NBC. This part will be described in the next chapter. However, the conceptual framework will be examined together with the outcome results later in chapter four and five.

The qualitative approach is on the left hand side while the part of quantitative approach is presented on the right of conceptual framework under the field of blood donor's attitude toward blood donation during uncertainty which encompass individual demographic information of respondents and the motives that suppose to enhance the management of NBC during uncertainty.

The motives enhancing blood donation during uncertainty are gathered from literature reviews and interviews from NBC's officers owing to demographic factors and motives can influence people to support blood donation (Ringwald, Zimmermann, and Eckstein, 2010). Moreover, the model of the Planned Behavior Theory (Ajzen, 1991) as well as the suggestions of NBC's officers also discloses the relative motives that can successfully help NBC launch promotional campaign for the management of blood donation during uncertainty.

The quantitative approach presented in the right of figure 5 leads to consider the most important motives that blood donors prefer for blood donation during uncertainty. In another word, of these motivators vs. demographic variables reflect the blood donor's attitude about blood donation during uncertainty in which they can enhance the management of blood donation to be more effective.

## **2.5 Hypotheses**

There are seven hypotheses that are set to find the differences between demographic factors toward the motives enhancing the management of blood donation in time of uncertainty by considering the average ranks at 5% significant level or not.

The hypotheses are analyzed according to demographic factors of blood donors toward the motives enhancing blood donation during unexpected event by

considering, if NBC provides the given motives for blood donation which are also presented in the figure 5, what motives are the most significant for blood donation during uncertainty. The hypotheses are used to consider whether or not each group of demographic factors has the different attitude toward the given motives. These hypotheses also reflect how different individual backgrounds think about blood donation management of NBC during the tough period of time that may or may not happen again in the future.

#### Hypothesis 1

H0: There is no statistically significant difference among genders toward the motives enhancing the management of blood donation in time of uncertainty.

H1: There is a statistically significant difference among genders toward the motives enhancing the management of blood donation in time of uncertainty.

#### Hypothesis 2

H0: There is no statistically significant difference among age ranges toward the motives enhancing the management of blood donation in time of uncertainty.

H1: There is a statistically significant difference among age ranges toward the motives enhancing the management of blood donation in time of uncertainty.

#### Hypothesis 3

H0: There is no statistically significant difference among marital statuses toward the motives enhancing the management of blood donation in time of uncertainty.

H1: There is a statistically significant difference among marital statuses toward the motives enhancing the management of blood donation in time of uncertainty.

#### Hypothesis 4

H0: There is no statistically significant difference among educational levels toward the motives enhancing the management of blood donation in time of uncertainty.

H1: There is a statistically significant difference among educational levels toward the motives enhancing the management of blood donation in time of uncertainty.

#### Hypothesis 5

H0: There is no statistically significant difference among occupations toward the motives enhancing the management of blood donation in time of uncertainty.

H1: There is a statistically significant difference among occupations toward the motives enhancing the management of blood donation in time of uncertainty.

#### Hypothesis 6

H0: There is no statistically significant difference among frequencies of blood donation toward the motives enhancing the management of blood donation in time of uncertainty.

H1: There is a statistically significant difference among frequencies of blood donation toward the motives enhancing the management of blood donation in time of uncertainty.

#### Hypothesis 7

H0: There is no statistically significant difference among features of blood donation toward the motives enhancing the management of blood donation in time of uncertainty.

H1: There is a statistically significant difference among features of blood donation toward the motives enhancing the management of blood donation in time of uncertainty.

## **CHAPTER 3**

### **RESEARCH METHODOLOGY**

Chapter Three describes the research methods that were utilized in this study. The main contents of this chapter include research approach, research design, data collection, population and sampling, dependent and independent variables, measurement, as well as data analysis.

#### **3.1 Research Approach**

When acquisitioning new knowledge, there are two general research approaches to derive from, either deductive or inductive research (Bryman & Bell, 2007). This study uses a deductive approach, which is a theory testing method that starts with already established theories and seeks to understand if the theories apply to specific cases (Hyde, 2000).

Qualitative research and quantitative research are two different research methods of gathering data (Bryman & Bell, 2007). However, the author is in agreement that each of the two methods lead to valid research findings in their own right. Qualitative research aims to gain a deeper understanding of human behavior and the underlying reasons behind such behavior which further investigates the “why” and “how” of decision-making (Hyde, 2000; Bryman & Bell, 2007).

Therefore, this academic research applies both qualitative and quantitative research approaches. The qualitative method starts from interviewing the authorized decision makers, as well as the officers of NBC, while the study also applies the deductive approach or quantitative research method which will examine the key determinants that contribute to the willingness of blood donors to support the management of blood donations for NBC by using previously acknowledged theories from literatures and the suggestions of officers.

This empirical research mainly uses a qualitative approach to gain a deeper understanding of how authorized decision-makers, who have the authority to manage blood donations for NBC, can make the blood supply meet the blood demand, as well as solve the problems regarding management of blood donation in general and unexpected times. The qualitative approach is applied in order to investigate the how and why of the chosen area.

In the mean time, in the quantitative approach, statistical models for visualizing the data that would be collected is also applied by using a questionnaire with NBC's blood donors to analyze their attitudes toward the keys motives enhancing the management of blood donations in order to enhance the effective management of blood donations during unexpected times.

### **3.2 Research Design**

This academic research is a mixed methods research as the data will be gathered through interviews and questionnaires in order to obtain more knowledge regarding the subject of study, and furthermore try to clarify the research problem. According to Neuman (2003), this particular design is more connected to data gathering than other research approaches. The research design of this paper is concerned with how the research purpose is shaped, and furthermore how the questions will be answered.

Moreover, what is generated from the empirical material, as well as the conclusion, is highly influenced by the research design (Bryman & Bell, 2007) in which the author expects to get the information about blood donation management in times of uncertainty by empirical study. In general, there are three main aspects of research design - exploratory, descriptive and explanatory (Neuman, 2003; Saunders et al., 2009) - in which this research collects the data for gaining a better understanding of the problem. Moreover, it is employed in a creative, open minded and flexible way to achieve further knowledge and develop methods for measurement in an unfamiliar subject (Neuman, 2003). The research also follows the ideas of Bryman and Bell (2007) explaining how this kind of design can provide the data needed to establish and clarify a research problem possible to further investigate, as it

is commonly used when investigating the general nature of a research problem. Furthermore, the description and explanation about the collected data from interviews are presented in the paper as well.

The qualitative method of this research collects the data by interview according to Table 3.1. The table presents how the research is designed to collect the data with the insight of the study by interviewing NBC's officers.

**Table 3.1** The Planning for In-Depth Interview

Key Informants	Scope of Interview
1. Director of National Blood Centre	1) Responsibility of NBC 2) Causes of increasing demands for blood 3) The progress of blood donation management 4) The groups of blood receivers 5) The belief toward giving blood 6) Campaigns supporting blood donation 7) General management of blood donation 8) Application of international standard 9) Influence of the way of life 10) Apply the philosophy of sufficiency economy 11) Deal with uncertainty circumstances 12) Activities promoting blood donation
2. Public Relation Officer	13) Announcement of blood mobile units 14) Involved supporters of blood donation 15) Advanced communication technology of blood donation
3. Public Relation Officer	16) Reminding tool for repeating blood donation 17) Various incentives persuading blood donation 18) Promote blood donation every three month
4. Blood Collection Officer	19) The process of blood donation 20) Daily target of blood donation 21) Places for collecting blood unit

**Table 3.1** (Continued)

<b>Key Informants</b>	<b>Scope of Interview</b>
5. Blood Component Production Officer	22) Daily plan for blood mobile units
	23) Quality and safe of blood collection
	24) Qualification of blood donor
	25) Available equipment for providing blood donation
	26) Impacts of the way of life toward blood collection Decision-making based on sufficiency economy concept
	27) Work according to international standard
	28) Safe and qualified blood is a matter
	29) Staffs work and sleep at workplace
	30) Limited human resource
	31) Accomplish job requires voluntary staffs
6. Blood Screening Officer	32) Require more fixed sites in central region for the NAT screening
	33) The transportation for carrying blood units to the nearest site for NAT screening
	34) Satisfied with overall management approach
7. Blood Screening Officer	35) Hire past-time technicians must be informed in advance
	36) Need to be promptly updated for managing workload in time
8. Blood Screening Officer	37) Suggest advanced communication technology for updating announcement
	38) The message for right understanding of blood donor
9. Blood Screening Officer	39) Promote everyone to donate blood every three month
	40) Avoid making people donate blood simultaneously over capacity of staffs
	41) Perception of the need for blood
10. Blood Distribution Officer	42) Balance the stock of blood units
	43) Proportion of blood distribution
	44) Quality and maintenance of blood
	45) Transportation for delivering blood products

This table is used as a direction for interviewing each key informant from various departments of NBC. The questions asked to ten key informants are presented in Appendix 2. The results of the interviews, however, are presented in the next chapter describing the scopes of interview in detail which are about the results according to the scopes of interview in table 2 presented.

### **3.3 Unit of Analysis**

The purpose of this research aims to investigate how NBC deals with the management of blood donations and the key motives enhancing the better management of blood donations during unexpected times for NBC in Bangkok, Thailand. The unit of analysis for the study, hence, is the organization, NBC, in Bangkok, Thailand, in which the study separates the sub-unit of analysis for this organization into the group of people to be interviewed and the group of people to participate in the questionnaire.

### **3.4 Data Collection**

The data collection methods used in this research are interviews and questionnaires asking the attitudes of participants regarding to management of blood donations at NBC, and the motives enhancing the effectiveness of blood donation management in times of unexpected events. The interviews ask the director of NBC about the management approach used in blood donations during uncertainty, as well as asked the attitudes of officers at NBC about the effectiveness toward management of blood donations during normal and unexpected circumstances (see appendix B). Nevertheless, the questionnaires were given to participants at NBC of Thailand (see Appendix C).

The qualitative method collects data from face-to-face interviews with authorized-decision makers and the officers of NBC to ask how authorized-decision makers decide on managing the situation of blood donations when uncertainty affects the performance of NBC, and to obtain feedback on the management approach respectively. The quantitative method collects the data from NBC's blood donors,

asking for their attitudes toward the key motives regarding the management of blood donations during normal times and uncertainty in order to enhance the number of blood donations efficiently in the long-run.

It was planned to take approximately one month according to the availabilities of the interviewees. The interviewees include the Director and nine officers from various divisions of NBC; the interviews will be conducted as standardized open-ended interviews, commonly known as “semi-structured interviewing” (Cohen, Manion, & Morrison, 2011). An interview guide was used to provide exact wording and questions in order for all interviewees to be asked the same basic questions in the same order. As stated by Cohen et al. (2011), this increases the comparability of the responses.

It is of great importance to choose a suitable data collection method when carrying out a time-limited study (Bryman & Bell, 2007). Patton (2002) and Cohen et al. (2011) described the use of open-ended questions to offer flexibility to pursue the interviews in whatever direction appeared to be appropriate. By letting the interviewee use his or her own imagination and perception on questions, the chance to receive richer and more in depth qualitative data is increased (Lichtman, 2010).

Furthermore, data collection is used to support the analysis of management of blood donations at NBC for this study has been conducted in different ways through online sources as secondary data such as newspapers, news releases, and websites to acquire background information and further combine with interviews and questionnaires.

In the meantime, the study in the field of quantitative research methodology took three months for collecting data from blood donors in NBC which requires the official approval of ethical committees to allow the survey to be conducted inside NBC. This issue also took time for the permissions of National Blood Centre’s Ethical Committee since the questions on the questionnaire may be sensitive issue for blood donors.

According to Bryman and Bell (2007), for the quantitative method, the research object needs to be measured and the results should be presented in numerical form. The quantitative method is used when the investigated subject is known beforehand and the result is presented in figures, percentages and/or numbers. It

comes from the investigation of frequency or a phenomenon. However, Eneroth (1984) argued that the biggest problems with quantitative studies are to decide on what to measure and how to conduct this measurement, how to validate the measurement and finally how to present the measured result. For the reasons above, the author chose to use both qualitative and quantitative methods in parallel to derive the best research results.

### **3.5 Population and Sampling**

According to Bryman and Bell (2007), there are two kinds of sampling, random and non-random selections. This study is based upon both selections: random is for distributing questionnaires to blood donors, and non-random is for interviewing the NBC's director and officers of the implementation approach.

The population that the author chose for this academic research is the people who work for NBC in Bangkok, Thailand and its blood donors. The author randomly selected blood donors to provide their attitudes toward the motives that efficiently enhance blood donations in the time of uncertainty.

The selected non-profit organization, NBC, is the representative of the population of the study. NBC is a major supplier for blood provisions for Thailand; it sometimes is affected dramatically by unexpected turbulence since NBC is located in the heart of the capital city, Bangkok, Thailand, where disturbances frequently occur.

For instance, in the time of political unrest in 2010, it was faced with a lot of troublesome events since the protesters blocked the main roads in Bangkok in order to blockade against access to public workplaces, which definitely obstructed the accessibility of NBC and affected the blood supply of the whole country. However, the author decided to study NBC's management of blood donations since it had been working on blood donations through the tough period of unexpected turbulence to achieve the goals of blood provisions for the whole country.

These above statements could be claimed that the selected organization is what the author should study as it is the major blood donation collector and this place represents the unique characteristics of a non-profit organization which has a limited budget and resources to support the management of blood donations to achieve its

goal. The author divided the population and sampling for quantitative and qualitative approaches as below.

### **3.5.1 Population and Sampling for Quantitative Approach**

The population in this research, in the field of quantitative approach, which uses random sampling, is blood donors at NBC in which this organization is a non-profit organization that was dramatically affected by the situation of political unrest in 2010 where approximately 2,000 blood donors over 3-4 days were unable to donate blood at NBC. The reason that the author selected the situation of political unrest in 2010 to be used as the sampling for the quantitative approach is because this event is different from the existing manual for managing the uncertainty, which NBC has been following.

Moreover, the given number is the approximately expected number of potential blood donors who were predicted to come to NBC during the 3-4 days of the political unrest in 2010. Therefore, the population of the study in the field of quantitative approach is 2,000 blood donors; using the Yamane (1967) formula with a  $\pm 5\%$  level of precision, the sample of the second group, thus, is 333.

### **3.5.2 Population and Sampling for Qualitative Approach**

The sample of the qualitative approach is divided into two sections: 1) the Director of NBC who has the authority in decision-making regarding management of blood donations, and 2) the in-depth interviews with nine officers who worked according to the assigned management approach by the Director due to the best available participation, in order to illicit feedback toward management of blood donations at NBC (see Appendix B).

## **3.6 Dependent and Independent Variables**

### **3.6.1 Independent Variables**

In the part of the quantitative research approach, this study uses a questionnaire in order to determine the motives enhancing the management of blood donations during uncertainty by asking blood donors as respondents, and hence, the

independent variables of this study are individual demographic variables of respondents as follows:

- 1) Gender,
- 2) Age,
- 3) Marital status,
- 4) Educational level,
- 5) Occupation,
- 6) Frequency of blood donation, and
- 7) Feature of blood donation.

Furthermore, these independent variables also affect the management of blood donations as individual demographic variables can impact the performance of NBC in collecting blood units during uncertainty, as different backgrounds and different attitudes influence the pursuing of a sufficient number of blood donation. These independent variables are considered as the motive enhancing the management of blood donations during uncertainty.

### **3.6.2 Dependent Variables**

The dependent variable of this research is used to find the blood donor's attitude toward the motives enhancing blood donations during uncertainty. The dependent variables of this research paper, hence, are related to the motives enhancing the blood donations during uncertainty which come from both reviewing the literatures regarding blood donation management, as well as the motivators supporting people to donate blood through times of uncertainty. These variables, however, are also gathered from the suggestions of NBC frontline officers about how NBC could better enhance the management of blood donation.

In another words, the dependent variables of the study come from the literature reviews and the officers' suggestions of NBC in which these variables have potential to enhance the management of blood donations to be more effective for NBC through normal and uncertainty times as the following motives:

- 1) The awareness of the need for blood, knowledge about preparation and benefits of blood donation through social media
- 2) Shuttle bus from various points to NBC

- 3) Many convenient places to donate blood
- 4) Online advance booking for blood donations
- 5) Video clip that presents the facts regarding blood donations
- 6) Facilities available when waiting to donate blood
- 7) Sufficient parking spaces for blood donors
- 8) Activities available when waiting to donate blood
- 9) Have superstar as a representative of blood donations
- 10) Attractive incentives for blood donations

The given motives are used as the dependent variables that potentially enhance the blood supply of NBC to achieve the daily target in tough periods of time, as gathered from literatures. As Ajzen (1991) expressed about the Planned Behavior Theory, it can anticipate about the intentions toward behavior in which these motives can lead to the intended behavior toward blood donations. Moreover, these motives are what NBC's officers suggested in order to enhance the management of blood donations during uncertainty.

### **3.7 Measurement**

The measurement is for the quantitative research approach. The data was collected through a 10-question survey consisting of Likert scale responses measuring individuals' attitudes on the topics of relevant motives enhancing the management of blood donations during uncertainty for NBC of Thailand. The rating scale is from "5" = Strongly Agree, to "1" = Strongly Disagree.

The survey also included questions on the following demographic information on respondents: gender, age range, marital status, educational level, occupation, frequency of blood donation, and feature of blood donor. The demographic information is also vital to study the characteristics of blood donors by considering what category of interest affects the willingness of blood donors toward the management of blood donations.

The distribution of the questionnaire was separated into two phases (see Appendix C). The first phase was a pilot test. According to the feedback of the respondents, some minor modifications were made. The modifications were mainly

concerned with grammar, orders of the questions and technical issues of the questionnaire. Since the main content of the questionnaire was not changed, the results of the pilot test were included in the final analysis of the research.

The second phase of the data collection was distributed to the public for a month. The researcher distributed the questionnaires randomly to blood donors in NBC in order to obtain a clear answer of what motives enhance the management of blood donations that people think NBC should provide for blood donations during unexpected events.

The analysis was measured by the degree of importance of the motives enhancing blood donations during uncertainty for NBC, in which the class width can be calculated following the method of Kanlaya (2010).

$$\begin{aligned} \text{The class width} &= \frac{\text{Maximum score} - \text{Minimum score}}{\text{Number of class width}} \\ &= \frac{5 - 1}{5} \\ &= 0.80 \end{aligned}$$

From the above calculation method, the levels of agreement toward the attitude of blood donations in the questionnaire translate as the follows:

The average mean between 4.21 – 5.00 = strongly agree

The average mean between 3.41 – 4.20 = agree

The average mean between 2.61 – 3.40 = neutral

The average mean between 1.81 – 2.60 = disagree

The average mean between 1.00 – 1.80 = strongly disagree

### **3.8 Data Analysis**

At the beginning, the author decided to use T-test and F-test in order to compare statistical models regarding variables, but it had to be changed to non-parametric tests instead since checking normality of data in SPSS found that the data was not normally distributed against assumptions of parametric statistical test. Kruskal Wallis test and Mann-Whitney test was then applied instead of parametric tests.

The statistic methods applied in the study are Kruskal Wallis test and Mann-Whitney test. The purpose of using those models is to decide whether the numerical results quantifying hypothesized relationships between variables are significantly different or not.

In order to find the importance level of the key motives enhancing blood donations during uncertainty to improve the management of blood donations for NBC, descriptive analysis was used because it basically the important level of motives enhancing the management of blood donations in times of unexpected events to be compared.

In addition, to design the conceptual framework of the key motives enhancing blood donations during uncertainty and the value of the statistically significant differences among variables, this study employed SPSS to calculate the values of the statistically significant difference of each motive.

These statistical approaches aim to generate the perception toward the motives that most respondents think are the most influential motives enhancing blood donations during uncertainty. If NBC provides the motives that are identified as very important tools for supporting the NBC's management of blood supply, the more effective management of blood donations during uncertainty should be followed. This means that no matter what kind of situation emerges, the management of blood donations is maintained effectively.

Last but not least, this research also used descriptive statistics by using mean and standard deviation to find the frequency and the important level of demographic information variables toward the motives, and to describe the characteristics of the groups of sample.

## **CHAPTER 4**

### **RESULTS**

#### **4.1 Results from the Part of Interviews**

From the interview, the NBC's management of blood donations in normal situations and uncertainty is effective. There are many unexpected events affecting the management of blood donations but the collected number of blood units has never been insufficient. The pursuing of blood donations has been influenced by the traditional way of life in Thailand, like the loyalty to the royal family, the religious beliefs, as well as the generosity of Thais, which drives them to always support blood donations, even in times of uncertainty. It can obviously be seen from the bombing event at Ratchaprasong in 2015, after the news of the tragedy was released, a lot of people came to donate blood at NBC, even there was no announcement regarding the need for blood.

In the aspect of management, the "sufficiency economy" philosophy of King Bhumibol Adulyadej has influenced the NBC's management of blood donations. Since the NBC's management of blood donation sufficiently balance as blood collection performs according to the actual demand, it does not collect blood units over or lower than the actual need for blood. It also manages important issues with the reasonable decision-making as well as the lesson learned from pass experience.

The results, however, presents how NBC can pursue the daily management of blood donations sufficiently to support the hospitals in Thailand, and how NBC deals with unexpected situations affecting the management of blood donations, as well as the issues that need to be considered for further success of blood donations in times of uncertainty.

#### **4.1.1 The Process of Blood Donation**

According to the interview, the process of donating blood at NBC has to follow procedures: 1) completion of the registrations form, 2) physical checkup, 3) donate blood, 4) have refreshments. The first process is for screening the quality of blood donors as to whether they can donate blood donation. The second phase is performed by staff and technicians who basically check for the physical qualification of the blood donors. If approved, the third step involves staff controlling the flow of blood until it finishes. Finally, blood donors are served food and drink to replenish the wasted energy from donating blood.

After that all collected blood units would be sent to the blood screening division in order to screen for infectious agents and Nucleic Acid Testing (NAT) before transferring to the blood component production division who produce blood products according to blood distribution division reports. At this time, blood distribution division will consider and manage the proportion of blood distribution to hospitals adequately and retain some portions as the available stock at NBC which is prepared for any unexpected circumstance.

#### **4.1.2 The Management of Blood Donation**

Dr. Soisaang Pikulsod, the director of NBC, said “besides blood donation at NBC, everyday the blood donation management of NBC also provides blood mobile units to perform blood donation service outside in order to support the daily blood supply”. However, it has to collect blood according to the daily number of targeted blood units which is announced by the blood distribution division which will check the available units of blood from hospitals in Thailand. After that, the blood component production division will prepare blood bags for the blood collection division. At this phase, the blood collection division will plan and arrange the schedule for blood mobile units to perform blood donation services. The public relation division would also announce the news of upcoming blood donation events in order to create awareness.

### Dealing with Various Uncertainties

Normally, when uncertainty occurs, NBC would follow the guideline of the manual for coping with uncertainty as the self-immunity. This manual has been made after NBC gets experience from Tsunami disaster, then preparing itself for next uncertainty by following the manual, indicating who, where, and how to deal with unexpected event particularly in the case that the number of blood donors is over capacity of available resources or over expectation for NBC's daily operation. Everyone can follow the construction inside the manual to solve all the problems. For example, this kind of solving can refer to the situations of tsunami in 2005 and bombing at Ratchaprasong in 2015 said a blood collection officer.

A public relations officer said that in 2010, the period of political turmoil seems to have an impact on the management of blood donations at NBC as this kind of uncertainty is different from what NBC is used to - the political protesters affected the accessibility of NBC, the headquarters of BDC of Thailand. It affected the number of blood donors who came to donate blood at NBC, and as the result, there was only one blood donor, while others may not have been comfortable to come to NBC because it was dangerous. NBC then held a meeting to find the best solution to support the blood supply of the country. The patients who need blood were still waiting for medical treatment that required blood transfusions, while NBC had to acquire and maintain blood donation services to meet the target for daily performance to support hospitals in every province of Thailand. This is one of the difficult situations that NBC faced to handle the uncertainty resulted from political unrest of Thailand.

#### **4.1.3 The Concepts toward Blood Donation of Thailand**

A blood collection officer stated that NBC is a non-profit organization which is also a charity providing blood supply for hospitals in Thailand. All performance of staff aims to provide the best service to everyone, both givers and receivers, so the performance of NBC has to maintain standards no matter during normal times or in an emergency. The study explored and found that the management of blood donations at

NBC is influenced by the “sufficiency economy” philosophy of King Bhumibol Adulyadej in managing everything to be sufficient to the actual demands with the reasonable decision making and learning from past experience as the self-immunity. “The blood donation management, however, is also impacted by the way of life in this country as most people come to donate blood just because they want to help each other, that’s it, they do not expect for any return backward as incentive” said a blood collection officer.

Nevertheless, a blood collection officer also said that the work of NBC is difficult in both normal and unexpected times. This refers to controlling the blood donation process and producing blood products to meet the actual needs for blood with quality standards. It is appreciating that sometimes staff face a lot of problems affecting the performance of NBC, but everyone still finds a way to maintain performance through their full effort with devoted-heart for the organization. This is because the way of life in Thailand does not only influence the blood donors, but also the officers of NBC; working with kind-hearted minds in helping their beloved organization is like helping other people in the country to have a good life.

#### **4.1.4 Public Relations of Blood Donation**

The way to promote people to become blood donors in other countries may need to consider various factors but in Thailand the way of life that most people like helping one another is a common thing to do. It also affects the blood supply or blood donation management of NBC especially, the loyalty to royal family. Every time that NBC presents the billboard of blood donation activity with the picture of Her Royal Highness Princess Maha Chakri Sirindhorn, a lot of blood donors are followed said a public relations officer.

A public relations officer also said “on the 2<sup>nd</sup> of April 2015, more than ten thousand people come to donate blood since NBC of Thailand launched merit making campaign “Jai Arsa Borijak Lohit” (volunteer for blood donation) in celebration of the most auspicious occasion of Her Royal Highness Princess Maha Chakri Sirindhorn’s 60th birthday anniversary. Many inhabitants in Thailand show their loyalty and love to Her Royal Highness Princess Maha Chakri Sirindhorn many by wearing purple shirts and donating blood as to show praising and wishing their beloved Princess, Her

Royal Highness Princess Maha Chakri Sirindhorn, the second daughter of His Majesty King Bhumibol Adulyadej, King Rama IX, and Her Majesty Queen Sirikit of Thailand, for a long, healthy and happy life". Under this campaign, donated blood units are being accepted every three months. The blood is being stored by NBC and will be utilized to help those in need of blood transfusions. The event aims to make merit in celebration of Her Royal Highness Princess Maha Chakri Sirindhorn's 60th birthday anniversary." ("Birthday Anniversary Celebration of Her Royal Highness Princess Maha Chakri Sirindhorn," 2015; National News Bureau of Thailand, 2015)

This news shows that the management of blood donations at NBC is much affected by the way of life.

A public relations officer further stated that since the NBC was faced with problems with blood donations resulting from the political protest obstructing the blood donation management, there were conferences everyday assessing the event and discussing the implementation plan. There were many participants from the key organizations for sharing knowledge and finding the best solution for pursuing the targeted number of blood units in different places and times. Even though the accessibility of NBC was a tough issue for everyone, not only blood donors, but also the performance of the officers of NBC was maintaining. This challenges the blood donation management of NBC to continue collecting the number of blood units as much as possible under irregular times.

#### **4.1.5 Unique Characteristics of Blood Donors in Thailand**

According to the interview of a public relations officer, the Thai culture and traditional manner of this country is quite supportive of the blood donation services of NBC. This does not only relate to blood donors, but also other aspects that frequently support the services of blood donations such as offering a space for setting up blood donation services, providing refreshments to blood donors, as well as promoting the blood donation events during political unrest and other events. This shows that most people enhance the pursuing of blood donations as they think it is a good way to give to others without paying money. It reflects the image of the country that no matter how violent political unrest occurs, the mind of helping one another still emerges, particularly in blood donation. Whereas the trend of other countries' blood donation

in the group of teenagers seems to be different from Thailand as major blood donors in Thailand are teenager and vice versa. There are many supports from educational institutions like Club 25 that promote teenagers to participate in blood donation.

#### **4.1.6 Activities Involve with Blood Donation**

The Director of NBC said “ Club 25 is an international campaign regarding to the crease of blood donation as every participant has to agree to support blood donation 25 times even they could not donate blood by themselves but they need to find the way to reach 25 times of blood donation. It might be their family or friends to help them fulfill number of blood donation until 25<sup>th</sup> time”. The Director also stated that the educational institutions also have activities to promote teenagers to gain knowledge about helping another people in the society including a course that includes the subject of Red Cross, Girl Guides, and so forth, teaching students to start acknowledging how to help people, as well as helping others is a good manner leading to good merit and happiness for oneself. There are activities that stimulate teenagers to perceive about blood donation too. Even their ages may not make them eligible to donate blood, but at least they are taught to understand the basics regarding blood donation services. For example, there were about three to four students coming to help and facilitate blood donors at NBC because it was a requirement of one subject that students need to help society.

#### **4.1.7 Blood Donation Mobile Units**

A blood collection officer said “everyday there are blood donation mobile units to support the blood supply at various places in Bangkok. In the time of political unrest, forexample, blood mobile units were the key players enhancing the collection of blood donation from people in eight different directions. Thus, blood mobiles are assigned to provide the blood donation service to people everyday but when the political unrest affected the normal performance of blood donation service, the plan must be changed”. “The changed plan was about the place of blood donation as if the particular location of blood mobile could not collect blood donation accordingly with the targeted number of blood donation. Later that, it must consider the available inventories to make sure if the blood donation service can collect blood units over the

targeted quantity, the things that are used during the process of blood donation are still available” said a blood collection officer.

A blood collection officer also gave an example that in case more than 150 blood donors come at one place, the number of available blood bags, whether there is a sufficient number of blood donors or not, must be carefully prepared in advance, as it avoids rejecting people’s intention of blood donation. This also refers to refreshments for blood donors. This requires every section to meet and share their information for planning in advance regarding the blood donation management during uncertainty, because if there are any insufficient resources which are needed to support the blood donations in the time of political turmoil, it is important to check the traffic outside too and whether they can travel or not. In case they cannot, another plan must be considered in advance. If not then they can refer to the plan.

#### **4.1.8 Management During Uncertainty**

According to Dr. Soisaang Pikulsod, the Director of NBC, coping with uncertainty requires planning, not only one approach but also various plans in order to ensure that if the first plan does not work, there is also another plan that could bring the satisfied outcome to NBC. They must think of both positive and negative results as well. For example, if the outcome of blood donation services is negative, what should they do the next day must be planned in advance, and then, they need to confirm again in the morning of the next day. It also requires following the feedback of each day's performance. If there are some points that could not be achieved, the leader must be informed about the problem in order to find the best solution. Actually, there are three main issues considering the feedback of blood donations at each blood donation mobile unit: traffic, number of collected blood units, and public relations about blood donation mobile units.

The director of NBC also said that if the traffic is not good or comfortable to allow people to come and donate blood, they must consider another location to set up the blood donation mobile unit instead. This also includes considering the number of collected blood units which can reflect the daily performance of whether it should change to be a new place instead or not. The mass media is another thing that concerns with the daily feedback during the uncertainty like radiobroadcast,

television, newspaper, and social network in which the public relations division is responsible for publicizing the news about the announcement of the need for blood and the schedule of blood donation mobile units in order to create awareness. If it is found that people have no awareness about the news about the coming of blood donation mobile units, the external supports from mass media would be involved for creating the perception of the blood donation events.

#### **4.1.9 Advanced Communication about Blood Donation**

“Nowadays the social network like Facebook, Line, Instagram, and various applications can stimulate people to come at NBC after the news of the need for blood is publicized. Moreover, the official website, Facebook fanpage are interesting tools that help NBC collect blood donations with the updated information that benefits people to see where they should go for blood donation like the nearest place, etc. Furthermore, there is the modern communication technology of NBC like “Give Blood”, the application that provides the information about the time and place of blood donation mobile units, blood drives as well as the necessary information about blood donation that people can know in order to prepare themselves before donating blood successfully” said the Director of NBC. These are the reasons why NBC applies the communication technology that influences people’s lifestyle in the modern society in which any news can be updated quickly according to the real time occurrence that informs what, where, why, and when to do things appropriately.

#### **4.1.10 Officers’ Dedication to Organization**

A public relations officer said that during unexpected periods like the political turmoil in 2010, everyone must be alert all the time as they may be called at anytime to prepare themselves to perform the tasks in the tough moment of the political unrest. It is not a normal working time, but extraordinary performance particularly in this period of turmoil resulted from political instability. Everybody does not perform only their own responsibilities, but also other tasks to help others in NBC to achieve the organization’s goal. This is a strong point, that NBC’s staff have devoted themselves to handle and support the bad situation of the organization with full effort. There were many workers that had to sleep in their workplaces even there were not the proper

facilities for sleeping over night. They had to sleep on the floor where they usually walk through or work every day.

“In fact, everything has been discussed the day before action day but in the real time, the actual implementations were not be as what they were planned” said a blood collection officer. From the occurrence of political unrest, NBC did not assign blood donation mobile units to perform in eight different locations as they were assigned to do before normally, but the eight teams of blood mobile units had been grouped to perform together at one location instead. This resulted from the lesson learned in the past where NBC could not much collect blood donation achieving the daily target, and vice versa. The past performance of each location contributes the awareness of appropriate the area for pursuing blood donations efficiently for NBC.

The Director of NBC stated that, in fact, NBC follows the standard of the International Red Cross Society and World Health Organization. This also covers the contingency plan for coping with the unexpected circumstances that may affect the blood donation management. “Nowadays, NBC of Thailand implements according to the manual of blood donation management in time of uncertainty which has been constructed in 2005 since facing with the big influx of blood donors after the occurrence of tsunami in Phuket, Thailand” said the Director of NBC.

#### **4.1.11 The Manual of Blood Donation Management During the Uncertainty**

The director of NBC revealed that the management of blood donations during uncertainty is prepared according to the management manual which everyone must follow. However, during uncertainty, the responsible agencies and tasks of individuals are assigned as follows.

##### 1) NBC of Thai Red Cross Society

(1) Publicize and prepare blood donation including providing blood donation service, screening for infectious agents, preparing blood components, distributing and transporting blood products.

(2) Contact and ask for coordination with relevant agencies.

##### 2) National Blood Service Branches in Bangkok

(1) Provide blood donation service

(2) Screen for infectious agents

(3) Distribute and transport blood products according to the coordination with NBC

3) National Blood Service Branches, Provincial Red Cross Chapters

(1) Operate according to the coordination with NBC

(2) Provide blood donation service

(3) Coordinate between NBC and relevant local agencies

4) National Blood Service Regions

(1) Transfer the data about the quantity of demand for blood and continuously report the director of NBC

(2) Screen for infectious agents and quality according to the request beyond the normal tasks

(3) Distribute the backup equipments of blood donation and transport them to national blood service branches

(4) Coordinate and provide the transportation for NBC's blood products and local agencies, and provide blood

The manual of blood donation management during uncertainty also details the responsible agencies and tasks of individuals for handling the unexpected circumstances that affects the public at the provincial level as follows.

1) Bangkok and Vicinity

(1) NBC of Thai Red Cross Society

(1.1) Publicize and prepare blood donation including providing blood donation service, screening for infectious agents, preparing blood components, distributing and transporting blood products.

(1.2) Contact and ask for coordination with relevant agencies.

(2) National Blood Service Branches in Bangkok

(2.1) Ramathibodi Hospital

(2.2) Vajira Hospital

(2.3) Police General Hospital

(2.4) Army Institute of pathology, Phramongkutkloa Medical

Centre

(2.5) Somdejprapinklao Hospital

(2.6) Bhumibol Adulyadej Hospital

The above lists have responsibility for the following duties:

- (1) Provide blood donation service
- (2) Screen for infectious agents
- (3) Distribute and transport blood products according to the

coordination with NBC

2) Upcountry

NBC of Thai Red Cross Society has responsibility for the following duties:

(2.1) Publicize and prepare blood donation including providing blood donation service, screening for infectious agents, preparing blood components, distributing and transporting blood products.

(2.2) Contact and ask for coordination with relevant agencies.

National Blood Service Branches, Provincial Red Cross Chapters has responsibility for the following duties:

- (1) Operate according to the coordination with NBC
- (2) Provide blood donation service
- (3) Coordinate between NBC and relevant local agencies

National Blood Service Regions has responsibility for the following duties:

(1) Transfer the data about the quantity of demand for blood and continuously report the director of NBC

(2) Screen for infectious agents and quality according to the request beyond the normal tasks

(3) Distribute the backup equipments of blood donation and transport them to national blood service branches

(4) Coordinate and provide the transportation for NBC's blood products and local agencies, and provide blood

(5) Report the problem and obstacle regarding the situation of uncertainty

There are supportive agencies that NBC can contact.

1) The supportive agencies that NBC can contact to publicize any message are presented as follows:

- (1) Information Technology \and Communication Centre
  - (2) Information and Communication Technology Centre, Thai Red Cross Society
  - (3) Public Relation Centre, Thai Red Cross Society
  - (4) All types of domestic and international mass media
- 2) The agencies that NBC can ask for supporting the transportation in case it needs to move blood products are presented as follows:
- (1) Royal Thai Police Aviation Division
  - (2) Police Medical Evacuation Centre
  - (3) Narenthorn EMS Centre
  - (4) Thai Airway International Public Co., Ltd. And other airline companies
  - (5) JS 100 Radio
- 3) Other agencies that provide transportation
- 4) Ask for further support and volunteer
- (1) The 100 times blood donor club
  - (2) Other agencies officers of Thai Red Cross Society

Form the given manual of blood donation management during uncertainty that the Director of NBC presents, it explains about the event assessment approach. It declares that normally NBC in Bangkok and vicinity have to fulfill the demand for blood at approximately 1,500 blood units per day, and 3,000 blood units are required for upcountry. The Director stated that in the case of uncertainty, everywhere needs to stock blood products to be available at about 4,000 blood units per day in order to be used in time that blood is immediately needed for patients and so forth.

In the normal case, the following issues must be prepared and managed to meet the standards of international blood donation.

- 1) The bed for supporting blood donation

There must be 24 beds to support blood donors during the process of blood donation that the blood provision division has to take care of. Furthermore, six blood mobiles need eight beds, and one blood mobile needs six beds. Fifteen beds are sufficient for plasma and platelet donations. In case adding more beds is necessary, a

maximum of 36 more beds can be added. According to the given information about beds, NBC can collect a maximum of only 5,000 units of blood.

2) The staff who are responsible for blood donation services

There are 31 nurses who work under the blood provision division performing blood collection. Moreover, there are eight extra nurses who come from the laboratory room and World Health Organization (WHO). Also included are 21 registration and administrative staff of the registration and the statistics division with ten computers used in registration for blood donations. The blood mobiles require 22 drivers.

3) The staff who shake for separating blood components.

There are eleven staff required to shake and separate blood components from the collected blood units. The preparation of blood components that can be separated is about 700 units per day, but in the case of uncertainly like disasters or others, an additional 2,200 units can be separated per day.

4) The screening for infectious agents and blood type in the laboratory

The capacity of screening is 1,000 blood units for six hours a day. If there is any uncertainty, up to an additional 3,000 blood units for 18 hours a day can be screened.

5) The blood bag

NBC must normally have 20,000 blood bags for collecting donated blood.

6) The daily maintenance for collected blood units

There are two maintenance rooms for collected blood units four degrees Celsius in which each room can keep 3,000-4,000 blood units. There are also two blood refrigerators which can keep 600 blood units each.

7) Blood refrigerator vehicle

NBC has four vehicles which can transport blood products with the capacity of maintaining blood products; this kind of vehicle is called blood refrigerator vehicle.

Furthermore, the manual of blood donation management during uncertainty presents a flow chart (Figure 6) of handling with uncertainty. Figure 6 shows the procedures regarding the implementation approach in times of uncertainty that affects

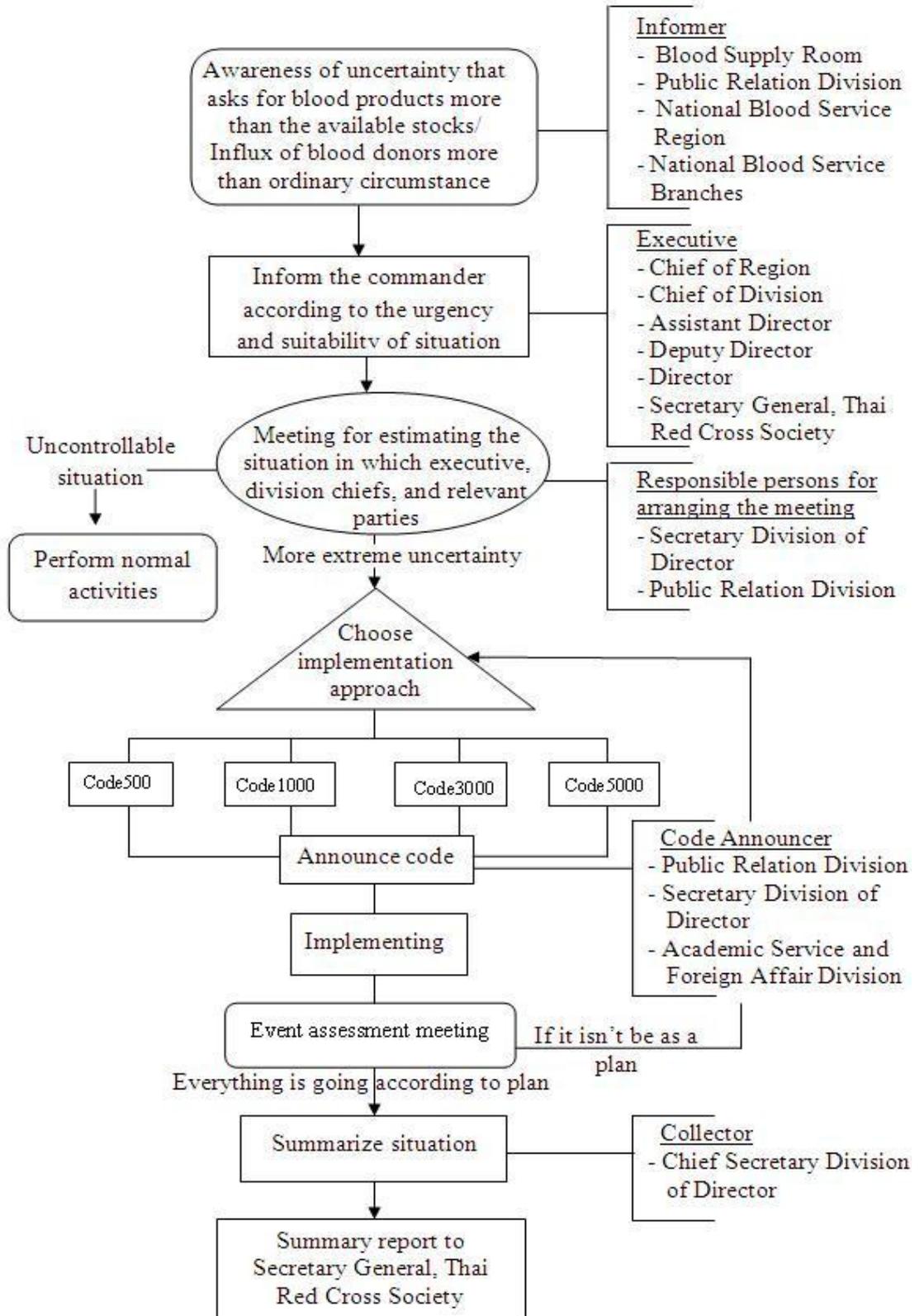
the performance of NBC. It begins at the occurrence of uncertainty that requires a large amount of blood units exceeding the available stock, or results in the number of blood donors greater than normal circumstance.

“After acknowledging about the plan that must be performed according to what code announcer informs, everyone has to implement it properly. And then, it needs to assess the situation whether or not everything is going according to plan.

Otherwise, it needs to select another plan instead. In case that everything is going according to plan, the next phase, which is almost the last step, is to summarize the situation. This task will be performed by the collector who has to gather information from several divisions. The final phase is to conduct the summary report in order to present Secretary General, Thai Red Cross Society” said the Director of NBC.

#### **4.1.12 Handling the Uncertainty of NBC**

The director of NBC said that besides the previous manual, NBC has also developed a flow chart for handling the uncertainty which everyone must follow. There are nine steps from top to bottom with the explanation in detail of each step as follows.



**Figure 4.1** The Manual of Blood Donation Management During the Uncertainty

1) When the blood supply room, the public relations division, or National Blood Service Region is acknowledged from nurse, National Blood Service Branches or mass media, about disaster or uncertainty that needs a large amount of blood which exceed the available stock in blood supply room of NBC. Or there is case of influx of blood donors over the capacity of the existing staffs who are prepared to provide blood donation service in an ordinary situation, for instance, the events of tsunami disaster in 2005, and the bombing at Ratchaprasong in 2015.

2) The acknowledged person from the first phase has to inform the situation of uncertainty directly to the executive according to the urgency and suitability of the situation.

3) The Director calls for a meeting among the officers of NBC, chief of divisions, and relevant parties in order to discuss about the violence of circumstance by considering the following issues:

(1) The available amount of blood units in the blood supply room of NBC as well as all National Blood Service Regions at that period of time.

(2) The actual need for blood according to the particular uncertainty.

(3) How many mobile blood donation units that are already available to perform the blood donation services that day?

(4) How many existing staff are available who perform blood donation services at NBC that day?

If it is considered that the situation is controllable, where the required quantity of blood units can be sufficiently provided in which it does not exceed the capacity that NBC and National Blood Service Region can provide, every relevant person must perform their duties normally.

In case it is considered that the event has more violence and there is an increased need for the number of blood units, everyone must follow the code of the implementation plan (see Appendix A) that will be chosen for coping with the situation of uncertainty.

4) Set the conference for choosing an appropriate implementation plan about the capacity to support the number of blood donations in which the code of implementation plan can be considered as follows.

Code 500 refers to about 1,000 blood donors

Code 1,000 stands refers to about 1,001-3,000 blood donors

Code 3,000 refers to about 3,001-5,000 blood donors

Code 5,000 refers to over 5,001 blood donors

5) When the code of implementation plan is selected, the public relations division, the secretary division of the Director, or academic service and foreign affairs division announces the code of implementation plan.

6) Several relevant divisions manage and search for staff, equipment, and locations to conduct the blood donation services during the uncertainty according to the selected plan.

7) The secretary division of the Director invites officers, chiefs of divisions, and relevant parties to a conference with the Director of NBC for estimating the circumstance at an appropriate time.

However, if it is found that everything is not going along with the selected plan, such as the number of blood donors being lower or more than expected, then repeat from step 4 again. In case that every division can implement and support the situation, everyone has to implement according to the chosen plan until the uncertainty disappears.

8) The secretary division of the Director has to gather and collect the implementation report of each relevant division (e.g. registration, public relations, laboratory, blood supply, plasma and producing blood component divisions, etc.), and then summarize the report for the Director for consideration.

9) After the situation becomes normal, the Director of NBC has to develop a report directly to the Secretary General of the Thai Red Cross Society to acknowledged the situation as it occurred.

#### **4.1.13 Estimating the Levels of Violence toward Blood Donation**

##### **Management**

The director of NBC said that there are 4 levels of violence toward blood donation management. To estimate the level of violence, NBC has divided the level of uncertainty into 4 levels:

1) Level 1 is about an event that happens and finishes without being prolonged. This refers to the event that occurs and ends within a day.

2) Level 2 is about an event with a higher degree of violence than level 1. This refers to an event that happens and lasts for over a day, but does not extend beyond the the area.

3) Level 3 is about an event with a higher degree of violence than level 2. This refers to an event that lasts many days and also extends beyond the area affecting the blood supply.

4) Level 4 is about an event with a higher degree of violence than level 3 which affects the whole country.

For example, the case of political unrest in 2010 that extremely affected the blood donation management of NBC as the protesters erected around Lumpini park covering the Ratchaprasong area that made the difficulty for coming in and out of NBC. Furthermore, the protesters also carried weapons leading to the police checkpoint that created more difficult accessibility of NBC too. Even the staff of NBC had to present their identity cards before coming to the office. However, the event of political turmoil can be categorized as the degree of uncertainty that affected the performance of blood donation as level 3 in which the violence of political unrest expansively affected blood provisions of NBC over a day.

“The first thing that NBC needed to know for handling the situation was the length of political unrest period whether it lasted over one day or not. If it did not last over a day, it was not considered as the serious issue. In contrast, if it lasted for many days, it was a serious issue to be considered for sustaining the daily outcome of blood donation service that must be sufficiently distributed to various requests of hospitals in Thailand. Besides the length of time, the area of political protest that protesters grouped was another thing that NBC need to consider whether or not the area of political protest expanded” said the Director of NBC.

In the case that the area was expanded and caused the traffic problem to people who aimed to donate blood at NBC, the implementation plan for coping with the situation must be considered. “In this case of political unrest, the expanded area against the accessibility of NBC was not only referred to the action of protesters but also the movement of government to control the situation as there were more the

police checkpoints against protesters which affected the traveling to reach the location of NBC since people could not access to the place or it was difficult to access the point of blood donation service” said the Director of NBC.

#### **4.1.14 Handling with the Political Unrest in 2010**

The Director of BC stated that since the kind of political unrest situation in 2010 occurred, NBC had changed the routine performance, as well as the daily schedule of blood donation mobile units. Everyone must help each other no matter if it was their responsibility or not as this time the goal of the organization was to maintain the current situation have minimal effect on the performance of blood donations. The only way to pursue blood donations was with the blood donation mobile units that were moved close to convenient locations. However, it required NBC to keep monitoring each day that the political protest was emerging.

A blood collection officer said “at the beginning, the blood drives or blood donation mobile units were sent out to perform blood donation service at eight to ten directions in Bangkok that were convenient for people to come instead of tough coming at NBC”. The result found that a lot of people came at the same time and place in which the capacity of each blood mobile could not support the large number of blood donors in time, resulting in many complaints. “This time the same approach was not suitable anymore, so the ten teams of blood mobiles had to work together at Mahisorn hall, SCB Park building supported by Siam Commercial Bank. This location is convenient for accessibility as it is located in the downtown and the large space that sufficiently facilitates blood donation against uncomfortable feeling. This setting of blood donation generated the satisfied number of blood donation for both NBC and blood donors during the moment of political unrest” said a blood collection officer.

During the period of political uncertainty in 2010, there was only one person who could come to donate blood at NBC. “Due to the NBC was surrounded by the protesters, obstacles, and the police checkpoint around the main roads that were blocked by protesters that also covered the way to access NBC” said a blood collection officer. This blood donor was a male German who worked in Bangkok and wanted to donate blood. “In fact, he did not come alone but his wife was not eligible

to donate blood so, he was the only one person who can come inside the NBC and donate blood successfully. The blood supply, however, of NBC had to mainly focus on the performance outside the office since the protest was extremely occurred day by day with the fire, gun, and bomb which made people scare to come for donating blood at NBC” said a blood collection officer.

The Director of NBC said that a contingency plan for day by day operations was made to handle the tough time of political turmoil. The Director and key leaders of NBC had meetings to estimate the situation of political unrest that daily affected the blood donation management. There were the Director, blood provision, public relations, information technology, blood distribution, laboratory division, producing blood components leaders, and others involved in the meetings in order to find the best solution for blood supply during uncertainty. The decision-making of NBC did not depend only on one person, but also the agreements of leaders to confirm the appropriate solution for solving the instability resulting from political turmoil at that time. Every leader had to share ideas and information regarding the necessary issues that involved their departments in order to plan for the next coming day.

Various theories about organization management during uncertainty like contingency theory, change theory, chaos theory, complexity management theory, as well as crisis management theory had been applied and involved with the management approach of NBC for dealing with the blood donations during uncertainty. The scholar about facing with the unexpected situation of Morgan et al. ( 2014) has also been applied as there are many issues that have been changed and adapted to fit with the unexpected situation resulting from political turbulence in Bangkok in which coordination among divisions and external organizations had been included in order to maintain performance against the obstacles. The management of blood donations also followed the main guidelines of the manual's procedure in times of uncertainty before adjusting some points to have the best fit with the ongoing situation of political turmoil.

A blood collection officer said “the planning in advance, however, was a key approach that needed during the time of political unrest”. The result of daily blood collection was used to estimate the demand for blood donationS for the next day. Then, it needed to check about the location of blood mobiles tomorrow whether it still

confirm to go according to the schedule or not, otherwise, they had to find another location instead. The blood bag and tools were prepared to go out with blood mobiles, while staff teams who perform blood donation services would go and meet the blood mobiles at the destination.

The nearest location of blood donation mobile units for individual staff was another topic that was used to design the responsibility of staff to tell where they had to go and perform the tasks according to the easy access of each site. If staff could not come because of dangerous conditions, the staff did not need to come. “The problems about blood donation management of NBC did not concern only about how to generate blood supply to meet the target demand but also the human resource management that was the main support for blood donation service of NBC” said the Director of NBC.

#### **4.1.15 Estimating the Actual Demand for Blood**

A public relations officer said “after planning for the places to collect blood donation during political unrest, the public relations division had to announce the news of blood donation mobiles and promote the blood donation for motivating people to participate the giving of blood”. This phase would happen after acknowledging the demand for blood or shortage of some blood types from the department of blood distribution that coordinated with the hospitals in the country. “Therefore, the blood distribution division would know exactly demand for blood and enable the estimation of blood supply to be adequately. After that, producing blood component department would prepare the number of blood bags according to real demand for particular blood components” said a public relation officer.

A blood distribution officer said that the first and last points for dealing with the demands for blood is the department of blood distribution as it has to check the available stock of blood units, as well as the perception of how many blood units are needed for hospitals. “Actually, the proportions of blood distribution are 70% and 30% to hospitals in Bangkok and other provinces respectively” said a blood distribution officer. In times of uncertainty, not especially in the event of political unrest, the number of blood donors is always overwhelming and that generates over demand for blood in Bangkok. This issue has been seen from the study of Hussein &

Teruya (2012) where the number of Egyptian blood donors who came to donate blood was over the actual need for blood, resulting in destroying blood units. “Whereas Thai NBC would distribute higher amount of blood units to other provinces like from 30% to be 40% instead” said a blood distribution officer.

Simultaneously, the screening for infectious agents had to work to support the department of producing blood components because it must be seriously checked for any infection that may emerge in the collection of blood units. “If the result of screening found that the collected blood unit contained infectious agent, it has to inform the producing blood component department to make a label and separate that blood unit from the safe blood unit and vice versa” said a blood screening officer. It reveals that no matter whether it is a difficult time to generate blood supply or not, the standards of blood donation of Thai NBC still aligns with international blood donation procedures like that of WHO; hence, the blood products that come out from NBC can be trusted in terms of the quality and safety.

The problems that relate to the daily performance of NBC during political unrest are also involved with the blood mobile units that are located separately in different directions. It has to make sure whether or not the routes that blood mobile unit will go, still be able to use properly. It also has to ask the staff whether they can come to the selected location of blood mobile unit in that period or not. If not, it must find others to replace that person in order to balance the work load of each blood mobile unit.

A public relation officer said that here was the case of a hijacking on a public bus in the past which made people afraid of the incidence toward blood mobile units when travelling during the political turmoil. It does not create fear only to staff, but also blood donors who may be scared of unsafe circumstances. There requires much consideration regarding the potential number or expected number of collected blood units versus the current situation.

In the case of the Ministry of Finance, there was the blood mobile unit performing blood donation services and then there was an influx of protesters surrounding the Ministry of Finance. This made everyone afraid of blood donation under the time of political unrest. Hence, “blood collection division had to check about the traffic and route of each particular point before blood mobile units would go to provide

blood donation service next day as well as the staffs' ability to come for working at particular blood mobile units was another topic that blood collection division had to coordinate with registration and statistic division" said a blood collection officer.

Moreover, a blood collection officer said that it must contact the vehicle division for checking about the adequate number of vehicles used for supporting blood mobile units. The locations of blood donation and the vehicles to support blood donation services must be aligned too in order to avoid conflict of interest among external supports of each sponsor, as many businesses have already painted the logo of their businesses on the body of the vehicles to show that they promote blood donation service of NBC. This may bring about the good feedback to the businesses but it can also lead to the conflict of interest in the case of presenting the logo of their businesses at inappropriate places. For instance, there are many buses which sponsors give to NBC for utilizing with blood mobile units and beside the vehicle's body also present the logo of its sponsor. This requires carefully checking if the location of the blood mobile unit is the same business of the sponsor, NBC must avoid using bus that has the logo of sponsor for bus whom is also the business competitor of another sponsor who supports the place of blood mobile unit.

"As different people have different purposes to promote their business like Corporate Social Responsibility or CSR that create the good image of organization but if there is the logo of its competitor appears in their place that blood mobile unit is presenting, it creates the dissatisfaction to the place's owner that does not want business competitor has any interesting role in their place of blood mobile unit" said a public relations officer. Thus, the coordination among divisions was necessary to manage the situation appropriately leading to the sustainable performance of NBC.

Moreover, a public relations officer said "public relations and blood provision divisions have to depend on each other for finding the target place for collecting blood donation as well as publicizing the news of blood mobile units, the registration and statistic division would assign staffs to go and perform tasks with blood mobile units adequately. But in the time of political turmoil that protesters began with the various obstacles like tyre, bamboo, etc., that created trouble for coming to NBC as they built the fortress by tyres and the react of military that also limited or blocked the area against the expanding of protesters by forbidding anyone to pass the controlled route

even NBC staffs had to show their identity cards for passing that route to access NBC”. Both mentioned occurrences where people did not know how to access blood donation services at NBC.

“The situation of political unrest in 2010 also created the trouble toward the hospital’s demand for blood as that time NBC did not have a lot number of blood unit to support medical treatment of various hospitals in the country” said a blood component production officer. This referred to how they could come and get blood units during that period of time too. Most hospitals still came to receive the requested blood units by themselves, even though the results showed an insufficient stock of blood units. This was considered as a trouble resulted from the instability. The problem was still linked to the ability to come for performing normal duties of individual staff too. A blood component production officer said that many staff had to stay over night at their divisions by sleeping on the floor without proper beds, in the case that NBC had the problem about blood donation management, as well as staff could not access work normally. The decision about blood mobile units must be well prepared to support the situation for pursuing the desired amount of blood units each day of the political unrest.

A blood collection officer said “the leaders of registration and statistic division had to come to NBC everyday even it was difficult to access the building but the leaders had to come and estimate the situation for planning how to keep the blood donation going for achieving the target until the situation ended”. In addition, the restricted area that was controlled by Government for monitoring the circumstance makes a trouble for donating blood at NBC.

More to the point, a public relation officer said “to acquire the needed number of blood donation, the blood provision and public relations divisions had to look at the schedule plan of event for blood mobile units that had been decided prior to the date of event that blood mobile units went”. It was a year long plan scheduled in advance for daily performance of blood mobile units. This requires the public relations division to check whether the decided locations for blood mobile units were still suitable, while the blood provision division had to check the availability of staff who were able to go to those locations.

“The suitable approach that NBC applied for solving the problem that staffs could not properly come to take a bus to go with blood mobile units at NBC, was allowing staffs to meet at the destination without coming to NBC or wait at somewhere else where the blood mobile bus would pass and easily pick them up” said a blood collection officer. Moreover, it considered the individual area for facilitating staff for coming to to the location by seeing who lived nearest.

“This made people perform their duties easier” said a blood collection officer. So, the important thing to consider before implementing was to check the available number of staff who could perform blood donation services properly in the time of political turmoil in order to measure the adequate number of blood mobile units to support daily performance of blood donation of NBC.

“The main places where blood mobile units performed at the time of political unrest were the assembly hall of Siam Commercial Bank at SCB Park building, and department store like The Mall and Central Plaza” said a public relation officer. This made it convenient to support blood donations of NBC with the sufficient space to support many blood donors.

The uncertainty of NBC regarding blood donation services was not only about the insufficient blood supply, but also the circumstance were donors wee over the capacity that staff could support. There were two main influx events of blood donors after acknowledging the news of the tsunami disaster in Phuket and bombing at Ratchaprasong square in Bangkok that occurred in 2005 and 1015 respectively. A public relations officer said “even the fact of the existing stocks were not insufficient, the shocking news of these occurrences stimulated people to think that there were needs for blood”. Consequently 10,000, and 6,000 blood donors came immediately to NBC after the news of the tsunami and big bomb in Bangkok respectively. A public relations officer said that these two circumstances made NBC’s staff work more than ordinary days, due to the number of existing staff versus the unexpected number of blood donors who especially came in the day after the shocking news was presented.

#### **4.1.16 Lesson Learned**

The circumstance resulted from tsunami disaster creating a lot of trouble toward the work of NBC or blood donation management in the time of emergency, as

a lot of blood donors came to donate with the intention to help other lives or victims of disaster but they came on the same day making NBC officers worked harder. “This made the first hard working of NBC’s workers to perform their tasks harder than other days” said a blood collection officer. This event also created the lesson learned of organization management for NBC’s handling to know what should be prepared to do and not to do during the unexpected times. Moreover, in 2005 NBC also developed the manual for coping with any circumstance that creates unusual work toward blood donations of NBC. This manual is used as the standard model of NBC for handling blood donations to be performed adequately in the time of uncertainty.

“The particular division of NBC like blood component production division was the one that was substantially affected from the unusual number of blood unit collected during the event of blood donation after tsunami occurred” said a blood component production officer. This division has to continue the task after the blood collection division transfers the blood unit to be separated according to the various demands of blood products. “The higher number of blood donation, the more workload of blood component production division” said a blood component production officer. A blood component production officer also said that all staff who are specially trained for using the particular machines of blood component production and the knowledge about blood, worked overnight and slept there too.

Furthermore, they did not eat outside like others in NBC, but they had to work, sleep, and eat in their workplace due to insufficient time to do other things beyond their duties at that time. Even this blood component production division is the division that always has the support of other staff who worked under another division, as well as external volunteers who are willing to help the work of NBC without remuneration. Nevertheless, the internal support from other divisions’ staff requires payment in return in which the rule about allowing the internal workers to help the blood component production division’s work must be approved from the supervisor in order to ensure that the requested staff has done his/her job completely before helping other division’s work. Otherwise, this help does not support the performance of NBC indeed, but creates more works toward one’s own division.

The lasted circumstance regarding over expected number of blood donors is the situation of the bomb at Ratchaprasong square. At the night of September 17,

2015, there was a bomb at Ratchaprasong area nearby Ratchaprasong square which killed many lives and caused injuries to many people who were around the area that night. The day after the bombing occurred, an influx of 6,000 people came to donate blood to help the victims. Even with the fact that the number of casualties was not over two hundred people yet, but the unexpected situation of the bombing made them think that NBC needs a high number of blood units. “This circumstance led to another higher workload for NBC’s staffs to perform the tasks and support the large number of blood donors at that period of time” said a blood component production officer.

The uncertainty in Thailand affecting the blood donation of NBC is quite opposite to other countries in the world as the shortage of blood would appear during the uncertain times of other countries due to people fear and do not want to waste time (Ngoma et al., 2013). But blood donors in Thailand, the more violence of uncertainty, the more number of blood donation appears as they love to help other lives. However, the overall operation was definitely different from the usual days, but the way to handle a lot of blood donors at the same time and place was the thing that NBC experienced from the situation after the tsunami disaster.

“The situation of unexpected number of blood donors at NBC after the bombing news was far from the previous circumstance of tsunami disaster for 10 years and many things may not easily to manage like the previous occurrence to balance the works adequately” said a blood component production officer. However, NBC has to adapt the approach of blood donation management to be aligned with the appropriate approach. Nevertheless, everyone in NBC had to maintain the blood donation services.

Surprisingly, a public relations officer said that after the bomb event at Ratchaprasong area, there were about 6,000 blood donors who came for donating blood, even though they had to wait for a long time like five hours, they still willingly waited to donate blood. There were mass media, as newspaper, who came to take photographs of blood donors during that period of time Even most of the blood donors had been waiting before lunch, at 5 o’clock in the evening, they still showed smiles of the willingness and intention to donate their blood. This also reflects the harmony of the people in the country toward the support of NBC with blood donation.

In fact, “NBC has lunched activities to promote blood donation all the year through various media like Green Wave 106.5 FM radiobroadcast that helps NBC motivate people to come for blood donation frequently” said a public relations officer. However, a public relations officer also said “the major motivators toward Thai people’s blood donation of NBC are the culture that quite fosters people to help each other in the society without expecting for any return, and the motivation of mass media also has much impact on people’s awareness about the need for blood. It can obviously see that every times after the news of the need for blood is publicized through any kind of mass media, it always follows by a lot of people who are willing to donate their blood even the fact they may or may not be eligible blood donors at that time”. It is, however, a good feedback of utilizing mass media as a tool of motivation for blood donation at NBC.

#### **4.1.17 News Consumption of Blood Donors**

“Besides that there are also other issues that make people think that they should come to donate blood as soon as possible after any circumstance that brings a lot of people to donate blood together at the same time at NBC which causes more workload to staffs as well as long waiting queue to complete the process of blood donation” said a blood component production officer. This refers to the people’s consumption of the news about blood donations, as well as the misunderstanding of the message that NBC publicizes. For example, when the message of NBC presented that there are sufficient stocks of blood units, some people wrongly decoded the message that NBC did not need more blood, when the fact was that it was still needed but NBC tried to tell people not to come together at the same time, only after the occurrence of uncertainty.

A public relations officer said that sometimes this issue is hard to control since different groups of people, blood donors, and individual lifestyles lead to different perspectives and thoughts toward blood donation. For example, some blood donors would come to donate blood only at the Red Cross fair even once a year. This reflects different lifestyle of individual people toward blood donation. It implies that no matter NBC cannot control all the people to separately come in different days, at least the motivation like activities, public relation toward the promotion of blood donation

can more or less pull different attentions of individual to donate blood at different point and time.

According to the statistics record of NBC, about 60% of blood donations in times of uncertainty comes from new blood donors. The data also reveals that most blood donors who always come during the period after shocking news are first time donors or new blood donors and lapsed blood donors. Those people, especially first time donors, are the ones who have never experience blood donation before, so they have not planned to donate blood at an appropriate time rather than coming immediately after acknowledging the news and thinking that their blood is very useful for other lives at that time. “The group of lapsed blood donors as well, this group of blood donors disappears from NBC long time but when they perceive that there is a something that they should do for help the society, they also suddenly come to NBC for blood donation like new blood donors” said a blood collection officer.

Conversely, a blood collection officer said that the repeated blood donors do not present themselves in the time of uncertainty whether resulting from natural or man-made disaster, because the repeated donors know that to balance the blood supply and blood demand adequately requires blood donors coming every three months rather than coming only when the unexpected event occurs. Moreover, they also perceive that donating blood at the same time with a lot of people during the time of uncertainty would make them wait for donating for long time as a lot of blood donors always make a long queue. This issue reflects the approach of marketing communication to outsiders about the appropriate awareness about blood donation. It mostly seems to focus only to motivates people to support blood supply of the country by donating blood, not about to promote blood donors to come back every three months. Therefore, NBC needs to focus on the balance approach for adequate blood donation, not stimulating blood donation over the actual need of blood supply. This can more or less balance the work of everyone in NBC, no matter normal or emergency time.

“Nevertheless, NBC cannot prohibit people to do not come for donating blood even there is sufficient amount of blood units in blood supply room as it seems to be hurt their feelings if NBC would forbid people with the willingness and intention of blood donation at NBC” said a blood collection officer. “There was the case of blood

donation during uncertainty of bombing at Ratchaprasong square that a lot of international mass media also presented the news as that most of foreigners sympathized Thailand and would like to help the victims” said a public relations officer. This generated the appearance of foreign blood donors in Thailand in which NBC would consider whether they are tourists who spend time in Thailand for a short period or foreigners who work and live in Thailand before allowing individual foreigners to donate blood. Blood collection officer said “if it found that foreigners work in the country and have permanent address to follow up, NBC would allow those foreigners to continue blood donation”. Whereas, for the foreigners who just visit Thailand for only one or two weeks, and then fly back to their countries, NBC would not allow them to donate blood, except people who have Rh-negative blood group, as these people would be specially considered.

#### **4.1.18 Serious Checking for Quality of Blood**

NBC needs to followup with blood donors in case of any infection, but tourists who come only for a short period of time cannot be followed up with or called back. After the hospital found that the patient or blood receiver gets an infectious agent, the first thing that doctor would do is find the cause of infection, to see whether it comes from the given blood or not, or any other cause of infection like medicine, etc. “In case NBC found that the cause is from the blood that people donated, then NBC must call the blood donor to ask for puncturing his/her blood again but it is just only the proportion for screening the infectious agent that beyond the four main infectious agents that NBC screens before distributing to hospitals. This reveals the seriously checking for quality of blood units from NBC before using to treat the patients who need blood transfusion” said a blood screening officer.

According to a blood screening officer, the laboratory division is responsible for screening the infectious agents and blood type of each blood donor. There are four infectious agents: HIV, Virus B, Virus C, and Hepatitis. There are also three rooms inside of the laboratory division to screening the blood. One room is for determining the blood type of blood donors. Another room is used for screening for the infectious agents as mentioned previously. The last room is used for screening NAT, the advance technique used for screening the infectious agents again in order to strictly

ensure the safety of blood units that would be sent to various hospitals both in Bangkok and other provinces of Thailand. In contrast, if there is still infectious agents that emerges, NBC would followup with the blood donor to come back for finding the infection again whether there the infectious agent is from the blood of blood donor or elsewhere.

More to the point of issue that enhances the effective blood donation management in the time of uncertainty, “there are many people offer the places for blood mobile units as they would like to help NBC perform blood donation service efficiently” said a public relations officer. Most people who contact NBC for offering help are the coordinators of organizations that would like to create CSR. Furthermore, a public relations officer also said that wherever the blood mobile units go, mass media always publicize to support the pursuing of blood donation at blood mobile units. This coordination can be called win-win situation as both coordination and NBC get benefit together.

For instance, there was blood mobile unit at The Mall department store, and at that time Channel 3’s bus had also parked there, so people saw the news about blood mobile unit being available there; many people went there after watching the news of Channel 3 that promoted the blood donation of NBC, and finally those people who came for donating blood became The Mall’s customers as well. The win-win situation like this contributes grateful support toward blood donation management.

“Normally, the target of blood provision is about 1,200-1,500 but nowadays 1,500-2,000 for supporting the higher demands as well as the unexpected situation” said a blood collection officer. There are 10 teams of blood mobile units in eight different directions in Bangkok. On Monday to Friday, there are approximately 8-9 locations for blood mobile units. Especially, in the time of uncertainty, like political unrest in Bangkok, the registration division always works together with the blood collection division for estimating the available staff to perform at each blood mobile units, and finding the appropriate place that can support blood mobile units at that time.

A blood component production officer stated that the voluntary mind is also another motivator of blood donation. Many people who frequently donate blood and support the activities of NBC like helping the work in the blood component

production division. The work that volunteers can do in the blood component division at NBC is labeling the stickers of blood groups on blood bags, sealing segment of blood donation equipments, etc. Those volunteers are also repeat blood donors who keep in mind that donating blood must be done every three months as it can effectively support NBC's blood donation management, and they do not need to wait for long queue in case that they come at the same time with other people during the period of any news that publicized the need for blood. “Moreover, they also know that blood donation is not only good for other lives but also good for their health as it supports the flowing of blood” a blood component production officer said.

#### **4.1.19 Motivating Blood Donors to Repeat Blood Donation**

“Sending a short message (SMS) is one of the motivation approaches that NBC uses to acknowledge the blood donors who have experienced blood donation at NBC” said a public relations officer. This way creates the awareness of the good behavior toward blood donations, as well as a reminder for enhancing the blood donation management of the organization. It can remind blood donors to repeat blood donation. Assuming that the readers are blood donors who have just donated blood only one time, if the readers receive the SMS from NBC reminding about the next coming blood donation, definitely it would stimulate the readers to come for another blood donation at the appropriate time.

A public relations officer also said that there are also various campaigns that NBC launches for motivating people to come for donating blood. For instance, “More giving, more getting” is one of the effective campaigns that pulls the attention from a lot of people toward blood donation of NBC. This campaign motivates people to know about what they would get after giving or donating blood; it creates the perception about the benefits of blood donation as it can help other lives in the society like friends, families, or anybody, even themselves, so they should do it today for happy society, and so forth.

“However, the particular campaign toward the stimulation of blood donation in every three month does not much motivated as most of people just come whenever they want without considering about appropriate time, some people have donated blood for 2 years ago and came back again when realizing the need for blood” said a

public relations officer. This should not be the good case of blood donation. Everyone should keep in mind that blood is needed all the time, so they should frequently come as good behavior.

However, the Director of NBC said “NBC has focused target group of blood donors on teenager as the trend of aging society is increasing”. It reveals that most blood donors are teenager as they are fostered to make good merit and blood donation is counted as one of a good way to do it. “This shows the traditional ways of life in this country that play the important role toward blood donation” said the Director of NBC. Many schools and universities have participated in activities regarding blood donation. For example, Assumption University is one of the academic institutions for which blood mobile units have been provided for collecting blood from university students, lecturers, and so on. This kind of support from academic institutions influences teenagers to think about blood donation as it is making good merit, as well as helping others in the same society.

#### **4.1.20 Attitudes of NBC’s Officers toward Blood Donation Management During Uncertainty**

From the interview, generally, the management of blood donations for NBC satisfied every worker, but there are the issues that need to be considered. Besides the normal time, the management of blood donations during uncertainty is also discussed; officers suggested that there are many issues needed to be improved for further success of NBC.

After implementing the plan during the uncertainty, especially political unrest in Bangkok, the majority of staff think that overall management for handling the situation is good but not the best. NBC should consider more issues to enhance the better performance, as well as the moral support of employees during the uncertainty. It must be informed that the situation of political unrest in 2010 is not the same as other circumstances that NBC faced like tsunami disaster and the bombing at Ratchaprasong. Those circumstances in 2005 and 2015 presented a large number of blood donors.

Because the performance of NBC during the political unrest was different as people, equipment, and so forth, were out of NBC, it was hard to control and manage

the blood donation management at that time. Many staff could not even go out from their places due to the dangerous environment; in some cases they did not have transportation to travel to the locations of the blood mobile units too, which makes the chiefs of divisions worry about their staff and whether they can come to perform tasks the next day or not. The blood donors also wanted to come but did not know how to come inside NBC passing through the big group of protesters, as well as the government restricted the area around NBC.

In other words, the influxes of blood donors that are over the capacity of NBC's staff are the issue of blood donation management in the time that unexpected events occurred which is opposite to the blood donation during political unrest in 2010. The problem is not about the over capacity of performers as they were sent to perform outside at blood mobile units, but the blood donation management to support the daily performance of NBC to pursue the targeted number of blood donations instead. These three circumstances must be considered at the different perspectives of organization management during uncertainty.

The interview also found that in the time a lot of people came for donating blood at the same time; staff had difficulty working to supporting the unexpected number of blood donors as this kind of situation does not normally occur at NBC. Nevertheless, the equipments, documents, and supportive human resources were still available at the site. But the workload made them work harder than other days because they had to help blood donors, both first time and other types of blood donors, in completing the registration form, and facilitating them when waiting to donate blood. This particularly mentioned the public relations and blood collection divisions' work that had to take care of blood donors and collect blood units when the numbers of blood donors coming for blood donation at NBC was overwhelming.

#### **4.1.21 Insufficient Staffs and Workloads**

According to the interview, there were two more main divisions that were also faced with plentiful workloads at that time, the laboratory and blood component production divisions. A blood screening officer said "in normal time, laboratory division has to work for three duties which are checking blood types, screening for infectious agents, and Nucleic Acid Testing or NAT which is the process to ensure the

safe of collected blood units”. These duties are not only using equipment or machines to complete the work, but it also requires the technician’s decision to judge whether the collected blood units are safe or not. “In the time of uncertainty, the higher number of blood units made technicians work more than ordinary days, they had to ask for support from other technicians who have knowledge about blood screening. NBC should manipulate the preparation of blood screening support in the time of uncertainty before the urgent time” said a blood screening officer.

The blood component production division is another hard working division during the time of uncertainty. “In everyday the number of available permanent workers in blood component production division is insufficient so, it has to hire temporary workers to support the work of division too” said a blood component production officer. This division’s staff frequently work and sleep at the same place, especially during uncertain times as every worker has to produce blood components according to the requests of the blood distribution division, which also makes the request align to the demands of the hospitals. A blood component production officer also stated “in time of uncertainty people needed more blood components in which blood component production had to work harder as well as to sufficiently response to the demands for blood. Thus, hiring temporary staffs and having volunteers could help to reduce the workload”.

Therefore, the human resource is the topic that most divisions have mentioned regarding feedback toward organization management during uncertainty of NBC. In fact, they have to accept that the process of requesting for more temporary staff is not easy as whatever NBC would do must be aligned with the policy of the Thai Red Cross Society as well. That is why NBC could not have much change or provide something according to the needs of each division.

From the interview, it is also found that the old design of the NBC building is another issue that should be considered as the working spaces of each division may not be suitable to the present work. For example, the space for freezing blood components like plasma is not sufficient for keeping the available plasma because it has a limited area. Moreover, the machines that are used for producing blood components are not sufficient too.

In the aspect of blood supply management that blood distribution manipulated during uncertainty, there is not any problem about insufficient stock, because NBC’s

blood distribution division always keeps the specific proportion of blood units separately from the number of blood that must be distributed to various hospitals. “The reason of keeping the specific number of blood unit without distribution the rest number of blood units is for balancing the unexpected demands of the hospitals in another day as blood distribution division can use the spare units of blood in case of the insufficient blood donation supporting the blood supply of NBC no matter in normal or urgency time” said a blood distribution officer.

Moreover, the study found that the way of handling an overwhelming number of collected blood units that the blood distribution division manages is quite interesting. In some places, this kind of occurrence can be called over supply versus actual demand of blood; for example, Hussein and Teruya (2012) exposed that Egypt had to destroy the collected blood units during the uprising in the country as more than 1,000 people came to donate blood at the blood bank of Egypt in the period of revolution only. In contrast, NBC of Thailand had been faced with the same kind of situation but zero blood units were destroyed. “Blood distribution division of Thailand had increasingly distributed to other provinces as normally it must distribute blood 70% to hospitals in Bangkok and the rest proportion to hospitals in upcountry. This could change the unexpected overwhelming outcome of blood units to be the grateful support to hospitals in various provinces instead” said a blood distribution officer.

A blood distribution officer also stated that the blood units that had been kept for many days would be distributed to hospitals first and then the fresh collected units would be replaced in the refrigerator. The number of spare blood units is about 400-500 blood units everyday basically. If NBC could not sufficiently collect blood donations, these spare units of blood would fulfill the requested need for blood by various hospital in Thailand. It is an excellent approach regarding blood supply management of NBC of Thailand. “Even the situation of blood collection during political unrest in Bangkok is quite different from other situations as the number of collected blood donation was not as much as the number of blood donation from tsunami disaster and the bombing at Ratchaprasong area, the overall blood supply management still efficiently continued the blood distribution without any problem” said blood a distribution officer.

## 4.2 Results from Quantitative Approach

### 4.2.1 General Information

#### 4.2.1.1 Demographic Information of Respondents

The descriptive statistics regarding the frequency and percent of the demographic information of respondents - who participated in the study by answering the questionnaire, their gender, age range, marital status, educational level, occupation, frequency of blood donation, and feature of blood donation - is presented in Table 4.1.

**Table 4.1** Descriptive Statistic of Demographic Factors

<b>Demographic factors</b>	<b>Frequency (n=333)</b>	<b>Percent</b>
<b>Gender</b>		
Male	197	59.2
Female	136	40.8
<b>Age range (year old)</b>		
17-25	43	12.9
26-35	94	28.2
36-45	84	25.2
46-55	81	24.3
56-65	31	9.3
<b>Marital status</b>		
Single	173	52.0
Married	141	42.3
Divorced/Separated	19	5.7
<b>Educational level</b>		
Below bachelor degree	108	32.4
Bachelor degree	180	54.1
Above bachelor degree	45	13.5

**Table 4.1** (Continued)

<b>Demographic factors</b>	<b>Frequency (n=333)</b>	<b>Percent</b>
<b>Occupation</b>		
Student	29	8.7
Government employee/ State enterprise employee	47	14.1
Freelance/Self-employed	149	44.7
Others (Business employee)	108	32.4
<b>Frequency of blood donation</b>		
First time	14	4.2
More than one time	319	95.8
<b>Feature of blood donation</b>		
New blood donor	15	4.5
Repeated blood donor	277	83.2
Apheresis blood donor	2	.6
Lapsed blood donor	39	11.7

From Table 4.1, the number of male respondents at 59.2% is higher than female respondents, and the age range of 26-35 year olds represents the highest number of respondents who participated the study followed by 36-45, 46-55, 17-25 and 56-65 year old at 28.2, 25.2, 24.3, 12.9, 9.3% respectively.

The marital status of respondents for the single respondents is 52 percent as the highest number compared to married, and divorced/separated status in which divorced/separated status has only 9.7 percent as the lowest proportion.

The educational level has those with a Bachelor degree as the highest proportion of respondents at 54.1%, while those with higher than a Bachelor degree is the lowest at 13.5%.

The highest ranks of participating number in the field of occupation are freelance/self-employed, and others (business employee) with 44.7 percent, and 32.4 percent in which student is the lowest proportion of participation with 8.7 percent. The frequency of blood donation has the number of people who have donated blood

more than one time at 95.8% which is greater than the frequency of first time blood donors.

The repeated blood donor represents the largest proportion in the feature of blood donation at 83.2% compared to other types of blood donation in which apheresis blood donor is represented as the lowest proportion at 0.6%.

#### 4.2.1.2 Motives Enhancing Blood Donation in the Time of Uncertainty

There are ten motives that the study focused on the blood donor's attitude enhancing blood donation during uncertainty by assuming the situation of political unrest. The given motives are gathered from the relevant literatures and scholars, as well as the suggestion of NBC's officers from the interview. The attitudes of respondents are given by applying the Likert scale, marking 1-5 from strongly disagree to strongly agree respectively which are shown in the Table 4.2.

**Table 4.2** Descriptive Statistic of Blood Donor's Attitude toward Motives Enhancing Blood Donation in the Time of Uncertainty

Motives	5	4	3	2	1	$\bar{x}$ Level of agreement
	Strongly agree Frequency (percent)	Agree Frequency (percent)	Neutral Frequency (percent)	Disagree Frequency (percent)	Strongly disagree Frequency (percent)	
1. Awareness of the need for blood, preparation, and benefit	188 (56.5)	132 (39.6)	10 (3.0)	3 (0.9)	0 (0.0)	4.52 Strongly agree
2. Shuttle bus service	145 (43.5)	139 (41.7)	34 (10.2)	14 (4.2)	1 (0.3)	4.24 Strongly agree
3. Many convenient places	176 (52.9)	137 (41.1)	17 (5.1)	3 (0.9)	0 (0.0)	4.46 Strongly agree
4. Online booking	89 (26.7)	123 (36.9)	93 (27.9)	26 (7.8)	2 (0.6)	3.81 Agree

**Table 4.2** (Continued)

Motives	5	4	3	2	1	$\bar{x}$ Level of agreement
	Strongly agree Frequency (percent)	Agree Frequency (percent)	Neutral Frequency (percent)	Disagree Frequency (percent)	Strongly disagree Frequency (percent)	
5. Video clip about blood donation	123 (26.9)	164 (49.2)	36 (10.8)	10 (3.0)	0 (0.0)	4.20 Agree
6. Facilities during waiting time	136 (40.8)	160 (48.0)	31 (9.3)	5 (1.5)	1 (0.3)	4.28 Strongly agree
7. Sufficient car park	175 (52.6)	121 (36.3)	27 (8.1)	9 (2.7)	1 (0.3)	4.38 Strongly agree
8. Activities during waiting time	72 (21.6)	149 (44.7)	78 (23.4)	29 (8.7)	5 (1.5)	3.76 Agree
9. Superstar as a presenter	42 (12.6)	121 (36.3)	114 (34.2)	45 (13.5)	11 (3.3)	3.41 Agree
10. Attractive incentive	83 (24.9)	143 (42.9)	62 (18.6)	38 (11.4)	7 (2.1)	3.77 Agree

Table 4.2 shows the three highest ranked of motives that people think NBC should provide for for blood donations in the time of uncertainty: 1) awareness of the need for blood, preparation, and benefit of blood donation, 2) many convenient places for blood donation, and 3) sufficient car park for blood donors.

In other words, the awareness of the need for blood, preparation and benefit of blood donation are the most important motives that respondents marked for enhancing blood donations in times of uncertainty. Having superstar as a presenter of blood donation is what people marked as the lowest important motive enhancing blood donations in times of uncertainty.

## 4.2.2 Testing Hypotheses of Quantitative Research Approach

### 4.2.2.1 Hypothesis 1

H0: There is no statistically significant difference among genders toward the motives enhancing the management of blood donation in time of uncertainty.

H1: There is a statistically significant difference among genders toward the motives enhancing the management of blood donation in time of uncertainty.

**Table 4.3** Testing Hypothesis 1

Motives	Gender		P-value
	(n=197)	(n=136)	
	Male $\bar{x}$ (SD)	Female $\bar{x}$ (SD)	
1. Awareness of the need for blood, preparation, and benefit through social media	4.49 (0.64)	4.56 (0.56)	0.413
2. Shuttle bus service	4.22 (0.86)	4.27 (0.77)	0.750
3. Many convenient places	4.43 (0.68)	4.51 (0.57)	0.441
4. Online booking	3.83 (0.95)	3.79 (0.93)	0.639
5. Video clip about blood donation	4.21 (0.74)	4.18 (0.76)	0.780
6. Facilities during waiting time	4.27 (0.73)	4.28 (0.71)	0.983
7. Sufficient car park	4.38 (0.80)	4.38 (0.73)	0.735
8. Activities during waiting time	3.81 (0.96)	3.70 (0.91)	0.251
9. Superstar as a presenter	3.40 (1.02)	3.43 (0.93)	0.860
10. Attractive incentive	3.75 (1.05)	3.80 (0.97)	0.783

The data in Table 4.4 reveals that the average ranks of genders toward the motives enhancing the management of blood donation in times of uncertainty are not different at 5% significant level, which does not indicate a statistically significant difference among genders toward any motives enhancing the management of blood donation in times of uncertainty; hence, H0 cannot be rejected.

#### 4.2.2.2 Hypothesis 2

H0: There is no statistically significant difference among age ranges toward the motives enhancing the management of blood donation in time of uncertainty.

H1: There is a statistically significant difference among age ranges toward the motives enhancing the management of blood donation in time of uncertainty.

**Table 4.4** Testing Hypothesis 2

Motives	Age range (year old)					P-value
	(n=43)	(n=94)	(n=84)	(n=81)	(n=31)	
	17-25	26-35	36-45	46-55	56-65	
	$\bar{x}$	$\bar{x}$	$\bar{x}$	$\bar{x}$	$\bar{x}$	
	(SD)	(SD)	(SD)	(SD)	(SD)	
1. Awareness of the need for blood, preparation, and benefit through social media	4.40 (0.82)	4.51 (0.60)	4.56 (0.59)	4.54 (0.53)	4.52 (0.51)	0.934
2. Shuttle bus service	4.12 <sup>ab</sup> (0.93)	4.23 <sup>ab</sup> (0.90)	4.44 <sup>a</sup> (0.73)	4.09 <sup>b</sup> (0.79)	4.29 <sup>ab</sup> (0.64)	0.035*
3. Many convenient places	4.51 (0.63)	4.48 (0.73)	4.48 (0.61)	4.42 (0.59)	4.39 (0.56)	0.588
4. Online booking	3.72 (0.93)	3.77 (0.97)	3.99 (0.86)	3.77 (1.03)	3.74 (0.82)	0.432
5. Video clip about blood donation	4.19 (0.85)	4.22 (0.71)	4.23 (0.77)	4.16 (0.75)	4.19 (0.70)	0.978

**Table 4.4** (Continued)

Motives	Age range (year old)					P-value
	(n=43)	(n=94)	(n=84)	(n=81)	(n=31)	
	17-25	26-35	36-45	46-55	56-65	
	$\bar{x}$ (SD)	$\bar{x}$ (SD)	$\bar{x}$ (SD)	$\bar{x}$ (SD)	$\bar{x}$ (SD)	
6. Facilities during waiting time	4.49 <sup>a</sup> (0.63)	4.41 <sup>a</sup> (0.63)	4.15 <sup>b</sup> (0.77)	4.17 <sup>b</sup> (0.77)	4.16 <sup>b</sup> (0.69)	0.019*
7. Sufficient car park	4.14 (0.94)	4.46 (0.80)	4.40 (0.78)	4.36 (0.69)	4.48 (0.57)	0.257
8. Activities during waiting time	3.65 (1.02)	3.93 (0.89)	3.73 (0.91)	3.69 (0.94)	3.71 (1.01)	0.404
9. Superstar as a presenter	3.47 (1.08)	3.37 (1.03)	3.64 (0.77)	3.31 (0.96)	3.13 (1.20)	0.098
10. Attractive incentive	3.98 (0.94)	3.83 (1.08)	3.76 (0.87)	3.53 (1.14)	3.97 (0.84)	0.169

According to Table 4.4, at 5% significant level, there are different average ranks among age ranges and motives enhancing the management of blood donation in times of uncertainty. This indicates a statistically significant difference between different age ranges and motives enhancing the management of blood donation in times of uncertainty, particularly the shuttle bus service and facilities during waiting time with P-values of 0.035 and 0.019 respectively, which are less than 5% significant level; hence, H<sub>0</sub> must be rejected.

Furthermore, there are different average ranks of shuttle bus service among age ranges of 36-45 and 46-55 year olds. Facilities during waiting time also have different average ranks and they can be divided into two groups: 1) 17-25 and 26-35 year olds, and 2) 36-45, 46-55, and 56-65 year olds. These two groups have different average ranks about attitude toward facilities during waiting time.

#### 4.2.2.3 Hypothesis 3

H<sub>0</sub>: There is no statistically significant difference among marital statuses toward the motives enhancing the management of blood donation in time of uncertainty.

H1: There is a statistically significant difference among marital statuses toward the motives enhancing the management of blood donation in time of uncertainty.

**Table 4.5** Testing Hypothesis 3

Motives	Marital status			P-value
	(n=173)	(n=141)	(n=19)	
	Single $\bar{x}$ (SD)	Married $\bar{x}$ (SD)	Divorced/Separated $\bar{x}$ (SD)	
1. Awareness of the need for blood, preparation, and benefit through social media	4.56 (0.62)	4.46 (0.59)	4.53 (0.51)	0.178
2. Shuttle bus service	4.25 (0.86)	4.20 (0.79)	4.42 (0.69)	0.396
3. Many convenient places	4.51 (0.63)	4.39 (0.64)	4.47 (0.61)	0.151
4. Online booking	3.80 (0.98)	3.83 (0.91)	3.84 (0.83)	0.940
5. Video clip about blood donation	4.23 (0.75)	4.19 (0.73)	4.05 (0.91)	0.744
6. Facilities during waiting time	4.34 (0.68)	4.20 (0.75)	4.32 (0.82)	0.264
7. Sufficient car park	4.34 (0.80)	4.42 (0.76)	4.53 (0.61)	0.549
8. Activities during waiting time	3.73 (0.96)	3.79 (0.93)	3.79 (0.85)	0.884
9. Superstar as a presenter	3.46 (1.00)	3.34 (0.97)	3.58 (0.96)	0.487
10. Attractive incentive	3.83 (1.02)	3.68 (1.00)	3.89 (1.10)	0.288

The data in Table 4.5 shows that the average ranks of marital status toward the motives enhancing the management of blood donation in times of uncertainty are not different at 5% significant level, which does not indicate a statistically significant difference among different marital statuses toward the motives enhancing the management of blood donation in times of uncertainty; Hence, H<sub>0</sub> cannot be rejected.

#### 4.2.2.4 Hypothesis 4

H<sub>0</sub>: There is no statistically significant difference among educational levels toward the motives enhancing the management of blood donation in time of uncertainty.

H<sub>1</sub>: There is a statistically significant difference among educational levels toward the motives enhancing the management of blood donation in time of uncertainty.

**Table 4.6** Testing Hypothesis 4

Motives	Educational level			P-value
	(n=108) Below bachelor degree $\bar{x}$ (SD)	(n=180) Bachelor degree $\bar{x}$ (SD)	(n=45) Above bachelor degree $\bar{x}$ (SD)	
1. Awareness of the need for blood, preparation, and benefit through social media	4.48 (0.57)	4.54 (0.61)	4.49 (0.66)	0.497
2. Shuttle bus service	4.27 (0.72)	4.28 (0.81)	4.02 (1.06)	0.414
3. Many convenient places	4.50 (0.56)	4.47 (0.64)	4.33 (0.80)	0.669
4. Online booking	3.88 (0.84)	3.78 (0.98)	3.80 (1.01)	0.698

**Table 4.6** (Continued)

<b>Motives</b>	<b>Educational level</b>			<b>P-value</b>
	(n=108)	(n=180)	(n=45)	
	<b>Below</b>	<b>Bachelor</b>	<b>Above bachelor</b>	
	<b>bachelor</b>	<b>degree</b>	<b>degree</b>	
	<b><math>\bar{x}</math></b>	<b><math>\bar{x}</math></b>		
	<b>(SD)</b>	<b>(SD)</b>		
5. Video clip about blood donation	4.19 (0.76)	4.25 (0.72)	4.04 (0.82)	0.316
6. Facilities during waiting time	4.30 (0.71)	4.26 (0.73)	4.29 (0.69)	0.930
7. Sufficient car park	4.36 (0.68)	4.35 (0.84)	4.56 (0.72)	0.139
8. Activities during waiting time	3.44 (1.04)	3.46 (0.97)	3.20 (0.87)	0.459
9. Superstar as a presenter	3.46 (1.00)	3.34 (0.97)	3.58 (0.96)	0.212
10. Attractive incentive	3.81 (1.04)	3.79 (1.00)	3.58 (1.03)	0.345

The data in Table 4.6 shows that the average ranks of educational levels toward the motives enhancing the management of blood donation in times of uncertainty are not different at 5% significant level, meaning that there is no statistically significant difference among different educational levels toward the motives enhancing the management of blood donation in times of uncertainty; Hence, H<sub>0</sub> cannot be rejected.

#### 4.2.2.5 Hypothesis 5

H<sub>0</sub>: There is no statistically significant difference among occupations toward the motives enhancing the management of blood donation in time of uncertainty.

H<sub>1</sub>: There is a statistically significant difference among occupations toward the motives enhancing the management of blood donation in time of uncertainty.

**Table 4.7** Testing Hypothesis 5

Motives	Occupation				P-value
	(n=29)	(n=47)	(n=149)	(n=108)	
	Student	Government/State	Freelance/Self-	Others	
	$\bar{x}$ (SD)	enterprise employee $\bar{x}$ (SD)	employed $\bar{x}$ (SD)	(business employee) $\bar{x}$ (SD)	
1. Awareness of the need for blood, preparation, and benefit through social media	4.55 (0.57)	4.51 (0.55)	4.53 (0.62)	4.49 (0.62)	0.912
2. Shuttle bus service	4.07 (0.88)	4.32 (0.84)	4.23 (0.78)	4.27 (0.86)	0.458
3. Many convenient places	4.52 (0.57)	4.49 (0.72)	4.40 (0.63)	4.51 (0.64)	0.367
4. Online booking	3.62 (0.86)	3.94 (0.85)	3.81 (0.96)	3.81 (0.97)	0.512
5. Video clip about blood donation	4.10 (0.90)	4.32 (0.70)	4.23 (0.70)	4.14 (0.79)	0.627
6. Facilities during waiting time	4.48 (0.69)	4.36 (0.61)	4.24 (0.75)	4.23 (0.72)	0.270
7. Sufficient car park	4.17 (0.97)	4.36 (0.74)	4.41 (0.80)	4.41 (0.70)	0.661
8. Activities during waiting time	3.52 (0.95)	3.91 (0.93)	3.80 (0.97)	3.71 (0.90)	0.193

**Table 4.7** (Continued)

	<b>Occupation</b>				<b>P-value</b>
	(n=29)	(n=47)	(n=149)	(n=108)	
<b>Motives</b>	<b>Student</b>	<b>Government/State</b>	<b>Freelance/Self-</b>	<b>Others</b>	
	$\bar{x}$	<b>enterprise</b>	<b>employed</b>	<b>(business</b>	
	<b>(SD)</b>	<b>employee</b>	$\bar{x}$	<b>employee)</b>	
		$\bar{x}$	<b>(SD)</b>	$\bar{x}$	
		<b>(SD)</b>		<b>(SD)</b>	
9. Superstar as a	3.38	3.60	3.42	3.33	0.453
presenter	(1.12)	(0.90)	(0.98)	(0.99)	
10. Attractive	3.90	3.91	3.72	3.74	0.636
incentive	(1.01)	(0.95)	(1.02)	(1.05)	

The data in Table 4.7 discloses that the average ranks of occupations toward the motives enhancing the management of blood donation in times of uncertainty are not different at 5% significant level, which also does not indicate a statistically significant difference among different occupations toward the motives enhancing the management of blood donation in times of uncertainty, Hence, H<sub>0</sub> cannot be rejected.

#### 4.2.2.6 Hypothesis 6

H<sub>0</sub>: There is no statistically significant difference among frequencies of blood donation toward the motives enhancing the management of blood donation in time of uncertainty.

H<sub>1</sub>: There is a statistically significant difference among frequencies of blood donation toward the motives enhancing the management of blood donation in time of uncertainty.

**Table 4.8** Testing hypothesis 6

Motives	Frequency of blood donation		P-value
	(n=14)	(n=319)	
	First time $\bar{x}$ (SD)	More than one time $\bar{x}$ (SD)	
1. Awareness of the need for blood, preparation, and benefit through social media	4.86 (0.36)	4.50 (0.61)	0.024*
2. Shuttle bus service	4.50 (0.65)	4.23 (0.83)	0.244
3. Many convenient places	4.64 (0.63)	4.45 (0.64)	0.204
4. Online booking	4.14 (0.77)	3.80 (0.94)	0.201
5. Video clip about blood donation	4.29 (0.83)	4.20 (0.75)	0.535
6. Facilities during waiting time	4.50 (0.65)	4.27 (0.72)	0.215
7. Sufficient car park	4.21 (0.97)	4.39 (0.76)	0.591
8. Activities during waiting time	3.71 (1.33)	3.76 (0.92)	0.792
9. Superstar as a presenter	3.21 (1.19)	3.42 (0.97)	0.499
10. Attractive incentive	3.64 (1.22)	3.78 (1.01)	0.821

According to Table 4.8, there are different average ranks among frequency of blood donations and the motives enhancing the management of blood donation in times of uncertainty. This indicates a statistically significant difference between frequency of blood donations and motive, particularly the awareness of the need for blood, preparation, and benefit through social media with a P-value of 0.024, which is less than 5% significance level; Hence, H<sub>0</sub> must be rejected.

Moreover, it also shows that the average mean of first time blood donation under the field of awareness of the need for blood, preparation, and benefit is 4.86, higher than the average mean of more than one time blood donation which is 4.50. This indicates that the perception about the need for blood, the knowledge of preparation, as well as the benefit of blood donation motivates people who are first time blood donors rather than people who have donated blood more than one time.

#### 4.2.2.7 Hypothesis 7

H0: There is no statistically significant difference among features of blood donation toward the motives enhancing the management of blood donation in time of uncertainty.

H1: There is a statistically significant difference among features of blood donation toward the motives enhancing the management of blood donation in time of uncertainty.

**Table 4.9** Testing Hypothesis 7

Motives	Feature of blood donation				P-value
	(n=15)	(n=277)	(n=2)	(n=39)	
	First time donor	Repeated donor	Apheresis donor	Lapsed donor	
	$\bar{x}$ (SD)	$\bar{x}$ (SD)	$\bar{x}$ (SD)	$\bar{x}$ (SD)	
1. Awareness of the need for blood, preparation, and benefit through social media	4.73 (0.59)	4.51 (0.61)	4.00 (0.00)	4.51 (0.60)	0.174
2. Shuttle bus service	4.33 (0.90)	4.25 (0.79)	3.50 (0.71)	4.15 (0.99)	0.462
3. Many convenient places	4.60 (0.63)	4.46 (0.63)	3.50 (0.71)	4.46 (0.68)	0.194
4. Online booking	4.07 (0.80)	3.81 (0.95)	3.50 (0.71)	3.79 (0.92)	0.735

**Table 4.9** (Continued)

<b>Motives</b>	<b>Feature of blood donation</b>				<b>P-value</b>
	(n=15)	(n=277)	(n=2)	(n=39)	
	<b>First time</b>	<b>Repeated</b>	<b>Apheresis</b>	<b>Lapsed</b>	
	<b>donor</b>	<b>donor</b>	<b>donor</b>	<b>donor</b>	
	$\bar{x}$	$\bar{x}$	$\bar{x}$	$\bar{x}$	
<b>(SD)</b>	<b>(SD)</b>	<b>(SD)</b>	<b>(SD)</b>		
5. Video clip about blood donation	4.20 (0.86)	4.20 (0.74)	4.00 (0.00)	4.21 (0.77)	0.936
6. Facilities during waiting time	4.47 (0.64)	4.25 (0.74)	4.00 (0.00)	4.41 (0.59)	0.394
7. Sufficient car park	4.13 (0.99)	4.40 (0.75)	4.00 (0.0)	4.33 (0.84)	0.497
8. Activities during waiting time	3.60 (1.35)	3.76 (0.93)	3.00 (0.00)	3.87 (0.80)	0.459
9. Superstar as a presenter	3.13 (1.19)	3.40 (0.99)	2.50 (0.71)	3.64 (0.78)	0.159
10. Attractive incentive	3.60 (1.18)	3.78 (1.01)	4.00 (0.00)	3.77 (1.01)	0.966

The data in Table 4.9 presents that the average ranks of features of blood donation toward the motives enhancing the management of blood donation in times of uncertainty is not different at 5% significant level, meaning that there is no statistically significant difference among different features of blood donation toward the motives enhancing the management of blood donation in times of uncertainty. Hence, H<sub>0</sub> cannot be rejected.

## **CHAPTER 5**

### **DISCUSSION AND RECOMMENDATION**

#### **5.1 Discussion**

It was found that the traditional way of life in Thailand and the “sufficiency economy” philosophy of King Bhumibol Adulyadej have much influenced the management of blood donations for pursuing the sufficiently adequate number of blood units. In contrast, the blood donation management of other countries has to rely on the incentives. The case of NBC, hence, is a good case study about handling the situation to meet the daily goal effectively, which is particularly based on the generousness of people in the country and being willing to help others without expecting any return. Moreover, the loyalty and respect to the royal family of Thai people have also a positive impact on blood donations of NBC.

There are many unexpected events which have occurred affecting the management of blood donations in which NBC is still able to manage smoothly without an insufficient result of collected blood units. This again refers to the sympathy and kind-hearted life style of Thai people who always help others willingly. The respect to the royal family is another thing that has an effect on blood donations since NBC blood drives on the birthdays of any of the members of the royal family, and large numbers of blood donors always follow.

From the case of NBC, management in times of uncertainty is to follow the existing manual if it is applicable, otherwise it must depend on a contingency plan. In fact, it is not every organization that can properly manage the unexpected events unless it has the guidelines in advance to help organizations survive and maintain business activities. NBC also considers this matter as a necessary issue in which it is like learning from past experience for protecting the unexpected issue in the future which aligns to the King’s philosophy of sufficiency economy. This shows that the sufficiency economy philosophy has influenced NBC’s blood donation management.

In other words, NBC utilizes a manual for coping with unexpected events according to the concept of self-immunity in the sufficiency economy philosophy that pretty much positively impacts the performance of NBC, especially in daily work for pursuing blood supply to support the whole country's demands.

However, the first step that NBC does is to monitor and estimate the length of the situation as to whether or not it lasts to another day or longer. If not, NBC would not consider this as a negative impact; if yes, the Director and chiefs of the divisions have to meet and discuss to finding the best solution to handle the ongoing circumstance.

The ordinary work or routine activities have been changed to fit with the situation in order to eliminate the unsatisfied outcome as much as possible. In the time of political unrest in 2010, NBC was dramatically affected in the field of blood provision. Moreover, other divisions had been also impacted with daily work activities as each division has its own responsibilities that link one another for generating the complete blood product before being delivered to hospitals, both in Bangkok and other provinces in Thailand.

It is a good technique that NBC selected to not make decisions only based on authorized decision makers, but it gathers all necessary ideas and suggestions since individual fields of work have better know-how in their fields rather than one who has not faced the particular problem. This shows that NBC also follows the concept of sufficiency economy philosophy by applying reasonable decision-making, leading to the appreciated results of NBC's blood donation management.

NBC is a good organization which is a real non-profit organization without expecting any return back. This does not refer only to the overall picture of the organization, but also the hearts of NBC's workers as everyone has devoted themselves to support the organizational performance to achieve the goal no matter in normal or urgent times. The workers are willing to work harder to support the success of the organization as they live in Thailand and the way of life in this country quite affects their minds to support everyone in the society. There are staff who sleep in the workplace as it is hard to get into building again if going outside through the messy area that the protesters surrounded, as well as with the strict control of police.

NBC's staff are well trained, so they always keep in mind that they must achieve the goal no matter how hard the situation they face. Even though the situation may be tough, they still try finding the way to keep working no matter in or outside their location, for instance, when working at different blood mobile units. It is impressive that they were alert all the time in that period of political turbulence because there were not modern communication technologies like nowadays, so everyone needed to be ready to be contacted in case there is updated information involving one's own responsibilities.

The above statements reveal that training people in an organization makes them skillful following by being faithful and love organization which is an excellent approach toward the grateful performance of worker in which the way of life in particular country has effect their minds toward the performance too. No matter what happens, those people still maintain their roles and support the organizational activities with the willingness like they are a part of the success.

However, the advanced communication technology has been developed nowadays and NBC can utilize the advanced communications toward society well as the "Give Blood" mobile application on mobile, as well as a website. Nevertheless, to have advanced-technology to support the communication among divisions more than just calling through mobile phones is another issue that people still request for, like Line, Facebook, etc., making everyone understand what he/she needs to do on another day as it may not be suitable to prepare the support or any other related issues. If everyone perceives the important matter and can manage one's own schedule promptly, it will have a satisfied outcome.

Another solution that NBC applied during the political unrest was cooperation with external supports like locations for blood mobile units to collect blood to meet the daily target. Actually, NBC does not ask or request anyone for any issue as the external supports always offer and help NBC normally. In the time of uncertainty, all blood mobile units had been grouped at only one location at SCB Park building instead of being separating. This also exposes a smart solution where establishing only one sufficient point to support blood collection is better than assigning blood mobile units to go to various directions as they may not perform their tasks successfully in some places.

The blood supply of NBC is managed very effectively in that it has planned for keeping the stocks of blood units to support the daily demands of hospitals in the country. In case that blood collection does not meet the daily target, the available stocks can be used to fulfill the actual need for blood to support the patients in Thailand. Furthermore, the case of political unrest did not create a problem of oversupply to NBC compared to other countries which always destroy the collected blood units if they are over capacity and limited space of refrigerator.

In contrast, the blood supply of NBC can be balanced so that the collected quantity can be sufficiently distributed instead of destroyed. Instead of a 70:30 Bangkok to upcountry hospital distribution ratio, it has been changed to 60:40 in order to further support the need for blood in other provinces of Thailand without eliminating the overwhelming number of collected blood units.

It is different from other cases where normally a lot of people would come donate blood if they perceive the need for blood in urgent times. The case of political unrest in 2010 is not like that; the blood collection had to take place outside the NBC building instead. This is another issue that reflects the communication method toward the message receivers.

Since every time that NBC announces the need for blood, many people would immediately come for donating blood which may not balance with the daily usage needed, the appropriate way should be a strategy that brings people to donate blood frequently at every three months rather than coming at the same time and locations as it may create unsatisfied experiences of blood donors who have to wait in long queues. Moreover, this is a long-run approach to sustain the blood supply to be sufficient for support the total demands for blood.

However, when a lot of people come to donate blood at the same time or place, this leads to increasing workloads of staff, especially technicians in the laboratory and staff in blood product production division. The human resources seems to be the most wanted request as they need the support for the works to be accomplished on time; the temporary staffs are frequently hired to help the works in particular division. Besides that, there is a high turnover rate of temporary workers too. The interviews of officers in various divisions presented that the available welfare may be more likely to sustain the existing temporary staff as they know that it is difficult to hire more permanent workers due to various processes and conditions.

An example of motivating welfare is medical treatment in case temporary workers are faced with an accident or illness during working time. The accommodation for some nights which have heavy workloads for necessary staffs is also another issue that should be considered. It does not need to be a nice bedroom like a hotel, but some spaces that can provide proper sleeping arrangements for them. Moreover, NBC should also provide food to staff who need to perform extraordinary tasks in an urgent period of time as it is hard to go out to buy food and come back to work properly due to many uncomfortable reasons involved. If all mentioned issues are appropriately managed, no matter whether it is a natural disaster or human problem, a happy working hour during times of uncertainty should be followed.

The logistics of transporting blood units to various hospitals in Thailand is another issue that is important to be considered because the maintenance standards of blood products in the transportation to individual hospitals may not be equal. If some negative things happen, there may be a claimed that it is caused from the blood units of NBC. To solve this problem, if it is possible, NBC should manage the logistics by itself, and hence, no matter how far a distance from NBC to the destination, the quality of blood products obtained from NBC can be guaranteed.

The places for screening the infectious agents, especially NAT, should be more established, not only at NBC, but there should also be a second place provided where these tasks can be performed promptly as in the case of political unrest in 2010 causing tough screening for infectious agents and NAT due to the obstacles of transportation. There should be another place that can efficiently support these tasks.

This research has exposed that the blood donation management of NBC is not only concerned with the workers, but also blood donors, as well as every potential blood donor. It is like the various branches of a tree that are combined with many aspects. The way to retain the existing blood donors to keep coming back promptly is what challenges NBC as it must make sure that blood supply is sufficient to support hospitals in the country. The author sees that blood donors are also a human resource that the organization should take care of and motivate to enhance the effective blood donation management.

The education at every school should add subject about how important blood transfusions are, as well as the basic knowledge regarding blood donation to the

students in order to foster them to think that blood donation is the role-identity, and that if one day they are eligible, they have to do it repeatedly every three months. If this topic is applied, NBC does not have to worry about the incidence of insufficient blood supply in the future as the advance medical treatment and aging society are increasing.

However, the quantitative results found that the age groups of people influence the motives enhancing blood donation during uncertainty. The groups of 36-45, 46-55, and 56-65 year olds show a significantly different statistic where shuttle bus service to take them from various points to NBC, and facilities during the waiting time for blood donation are what they expect from NBC. This attitude of the mentioned age ranges is not the same as the people aged 17-25 and 26-35 year old.

Furthermore, the frequency of blood donation in the field of first time blood donation is linked with the motive of awareness for the need for blood, the knowledge of preparation and benefit of blood donation. This also aligns with the information that NBC's staff mentioned that every time when an unexpected circumstance occurs, the majority of blood donors are first time blood donors, because repeated blood donors have experience about blood donation and better know that they should donate blood frequently every three months instead of donating blood only when it is needed.

The three highest ranks of important motives that blood donors express as strongly agree are the awareness for the need of blood, the knowledge of preparation and benefit of blood donation, many convenient places for blood donation, and sufficient places to park cars for blood donors. These issues can enhance the pursuing of blood donations in times of uncertainty and it can be also applied with other kinds of situations. These show the actual desires toward blood donation management during uncertainty.

Furthermore, the respondents also suggest that the number of staff and beds for blood donation should be increased in order to support a higher number of blood donors who come in the urgent times of unexpected events. The benefits of blood donation like who are the receivers and how is the blood used, is what NBC should provide the knowledge about in this issue, as it might motivate more people to donate blood whenever it is needed.

In contrast, the three lowest ranks of motives enhancing blood donation during uncertainty are having a superstar as a presenter of blood donations, an attractive

incentive for blood donations, and activities when waiting to donate blood. These motives are given as the least important issues that NBC does not need to pay much attention to to motivate people to come during unexpected events like the time of political turmoil. Many respondents wrote at the end of the questionnaire in the section of other suggestions, that blood donation does not need any motivation as everyone is willing to do so; incentives, superstar, and any other activities are not important issues.

The implementation approach that NBC used in the time of political turmoil comes from theories of organization management in times of uncertainty. NBC has followed the manual of handling blood donation management in time of uncertainty as a guideline for handling unexpected situation. NBC also arranged daily meetings to find the best solutions as well as many changes to fit the situation. These approaches refer to many theories like contingency theory, change theory, chaos theory, complexity management theory, as well as crisis management. This study can confirm the given theories to handle the unexpected event for organization management promptly.

According to the management theories, particularly in time of uncertainty, there are many theories and concepts that the author considers as they are involved with the NBC's management of blood donations. The theories and their core concepts are presented in the following table 5.1.

**Table 5.1** The Application of Management Theories with the Management of Blood Donation

Concepts of Blood Donation Management	The core concept of theories	Much applicable
1. Contingency Theory	<ul style="list-style-type: none"> <li>- There is no one best way regarding to decision-making of management during uncertainty.</li> <li>- Organization has to align itself to fit with environment.</li> <li>- The feedback must be considered for making appropriate adaptation.</li> </ul>	✓

**Table 5.1** (Continued)

<b>Concepts of Blood Donation Management</b>	<b>The core concept of theories</b>	<b>Much applicable</b>
2. Change Management	<ul style="list-style-type: none"> <li>- Organization system for handling change has to consider the external environment.</li> <li>- The process of transformation should follow the feedback.</li> </ul>	✓
3. Chaos Management	<ul style="list-style-type: none"> <li>- Organizational learning and opened system should be applied.</li> <li>- Learning organization should be applied for appropriate adaption.</li> </ul>	
4. Complexity Management	<ul style="list-style-type: none"> <li>- The decision-making should not come only from one person of top management level.</li> <li>- System is self-organizing as people know how to act and make it right for handling turbulence.</li> </ul>	✓
5. Crisis Management	<ul style="list-style-type: none"> <li>- It can produce controlled behavior even the fact no one is in control.</li> <li>- Crisis management plan and crisis management team are the key components for coping uncertainty.</li> </ul>	✓
6. Hierarchy of needs	<ul style="list-style-type: none"> <li>- There are different needs of people since basic needs like food, clothes, and shelter, following by the higher needs of people until self-actualization.</li> </ul>	x
7. Sufficiency Economy	<ul style="list-style-type: none"> <li>- There are three core concepts of this philosophy: moderation, reasonable, and self-immunity.</li> </ul>	✓✓✓
8. The traditional way of life in Thailand	<ul style="list-style-type: none"> <li>- The beliefs, culture, traditional way of living are based on Buddhism doctrine that teaches people to be kind-hearted, help each others willingly.</li> </ul>	✓✓✓

A check mark in the right column of the first four rows indicates that the given theories in Figure 7 have an impact on the management of blood donations during uncertainty, while triple check marks present the much influential concepts toward blood donation management of NBC. On the contrary, the cross symbol indicates theories that do not have an impact on the management of blood donations.

In fact, the above theories and concepts are not much applied to or influence the blood donation management, except the philosophy of sufficiency economy and the way of life in Thailand, because these two concepts are unique characteristics that reveal the different management of blood donation from other countries in the world (Shaz et al., 2009; Ngoma et al., 2013).

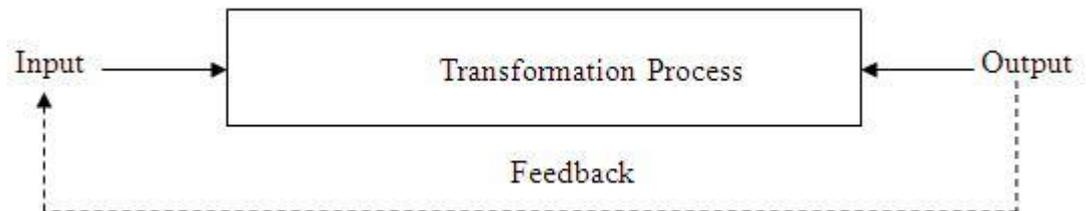
In contrast, under the uncertainty situation, it was found that NBC has adapted itself to fit with the external environment no matter what uncertainty occurs. Contingency plans have been developed to support the situation like the situation of political uncertainty in 2010; meetings had been arranged everyday for discussing feedback in order to manage and adapt blood collection efficiently for the next day.

NBC has applied not only contingency theory but also other concepts as change management theory, chaos, complexity, and crisis management theory, in which NBC is based on the surrounding environment, and thus, it must consider the external environment as well as the feedback of implementation. There are the involvements of learning organization and opened-system approaches for pursuing the efficient management that aligns with the unexpected situation. NBC has applied these concepts since there were meetings for checking the ongoing situation and analyzing the daily performance for adjusting the management of blood donations in case that the system is not under the normal situation.

In the case of the political uncertainty in 2010, at the early period of implementation, the blood collection at different places was not satisfactory due to many causes making people cannot access to the available blood mobile units; then NBC changed from different direction of blood mobile units to be only one place instead. This exposes that NBC considered the daily feedback according to various performance measures of the blood mobile units. This decision results from organizational learning, as the past experience or self-immunity, after acknowledging the obstacles against blood donation services, which generated the satisfactory

outcomes compared to the beginning period during the political turmoil that affected blood donation management of NBC.

To be clear, the following figure can explain how NBC applies the concepts of management in times of uncertainty.



**Figure 5.1** The Relevant Process of Appropriate Change

**Source:** Hayes, 2007.

From Figure 5.1, for the relevant process of appropriate implementation during unexpected times, NBC has considered the process of blood collection by analyzing the feedback every day after providing blood donation services at various points in Bangkok in the time of political turbulence in 2010. It shows that NBC applied the sufficiency economy philosophy by managing the situation moderately with reasonable decision-making, not only from one authorized-decision maker but others' involvement, and the past experiences being applied as the self-immunity to protect against the unsatisfactory outcome. For example, the past record of particular locations that the blood mobile units had performed shows that if they could not generate the satisfactory number of collected blood units, these locations would be considered as ineffective for blood collection, and then moved to another suitable location instead.

Self-immunity is like a learning organization as NBC has to think and act for pursuing the alignment of blood donation management in normal and uncertain times. The past performance, experiences, skills, and strategies can be learned to better manage the unexpected situation in which NBC applied them to manipulate the blood collection management to achieve the daily target.

Senge (1990) exposes that an organization should not just learn to adapt and respond to environment changes; it must also learn to be generative and to expand

their capability. Organizations should, therefore, focus on generative learning which is about creating, as well as adaptive learning which is about coping. NBC also considered the past performance and whether it can achieve the targeted number of blood units every day or not; in case it can not, it would find a new solution that enhances the capacity of blood donation services since it knows the causes and effects of past experiences.

Johnson and Scholes (1997) points out that the appropriate management dealing with chaos or uncertainty should have many ideas from many people rather than having only one idea from top management exclusive. More ideas can generate more solutions that support the organization management during uncertainty. This concept also aligns to sufficiency economy philosophy as being reasonable to manage the situation promptly. For instance, for blood donation management during political unrest, the implementation approach came from various ideas of key officers who perform in various divisions for acknowledging the actual problems and pursuing the potential solution.

Stacey (1993) states that complexity management theory is about self-organizing that in reaction to an unexpected event or turbulence affecting the organizations performance. It can also produce controllable behavior even though there is no one in control. These statements link to the blood donation management during political unrest in 2010 in that NBC allowed employees to decide whether they can come to perform the tasks at particular locations or not; if they could not come because of inaccessibility, they can select the suitable way by themselves for going to the meeting points where blood mobile units will pick them up. This shows that NBC applied the complexity management theory since everyone knows their best approach to handle the complexity resulting from political turbulence.

Furthermore, the blood donation behavior of blood donors can be controlled as NBC has studied the feedback and knows the appropriate place for facilitating blood donors which aligns with the Planned Behavior Theory (Ajzen, 1991; Godin et al., 2012), resulting in a higher number of blood units, meaning that it can stimulate the blood donors to come at a convenient location for blood donation since it knows what can affect blood donor's behavior.

The theories that have less applicability are crisis management theory and Maslow's hierarchy of needs theory. Crisis management mainly focuses on the two

components: crisis management plan (CMP) and crisis management team (CMT). The CMP is for fast responding to the uncertainty. In fact NBC has already had the manual of blood donation management for coping with the uncertainty as CMP (see Figure 6), but this manual could not be followed every time, as for the situation of political unrest in 2010, there is no written plan regarding how to cope or apply it with this kind of situation. This is because the main procedures of implementation in the manual deal with the overwhelming number of blood donors, as this was opposite to the situation that NBC faced during political unrest since the number of blood donors was not as much as planned. Therefore, even there is CMP as a guideline for coping with uncertainty, the actual situation still needs a contingency plan with various appropriate and reasonable inputs from experienced people.

In the part of CMT, there is not a particular CMT to handle the unexpected situation. There is only the manual of blood donation management for solving the uncertainty which does not assign an ad hoc team to deal with uncertainty. Therefore, everyone needs to follow the manual which is written about who and how to perform tasks in case of dealing with an overwhelming number of blood donors. The manual also contains the detail of contact persons for an emergency; this shows the communication approach among divisions during uncertainty of NBC. Moreover, in the real-time, the chiefs of divisions are the key persons to be acknowledged and inform the ongoing circumstance; if there were any changes, the chiefs of division must inform sub-ordinates about the way of implementation.

The hierarchy of needs theory is the concept that almost all organizations apply for pursuing the effective management in order to get the satisfied outcome. On the contrary, everyone at NBC works and devotes themselves for the organization since everybody perceives the value of helping others in the society as the virtue in which a hierarchy of needs does not have an effect on their minds; the way of life in Thailand teaches them to help each other willingly without expecting any return. This shows that the way of life in this country affect not only NBC's workers but also blood donors as they donate blood because they would like to help others; they do not donate blood because of incentives or reputation, but they do it willingly.

## 5.2 Theoretical Contribution

From the core concept of management theories, the four main functions of management theories are very important to efficiently and effectively achieve the goal of the organization.

Besides that, other concepts influencing the management of blood donations for NBC are the traditional way of life in Thailand and the philosophy of sufficiency economy. Figure 9 represents the additional concepts of the management approach in dealing with blood donations of NBC which are different from the general management approaches.

In general, management concepts since the classical management perspective until the modern management perspective that originally focuses on performance or productivity, then human relations toward the satisfied outcome, and the social context like external environment affecting organizations, always lead organizations to the way for attaining organization goal through four main functions of management. In contrast, those management concepts do not mention about the relevant principles influencing the management of blood donation for NBC of Thailand like sufficiency economy philosophy and the way of life in this country.

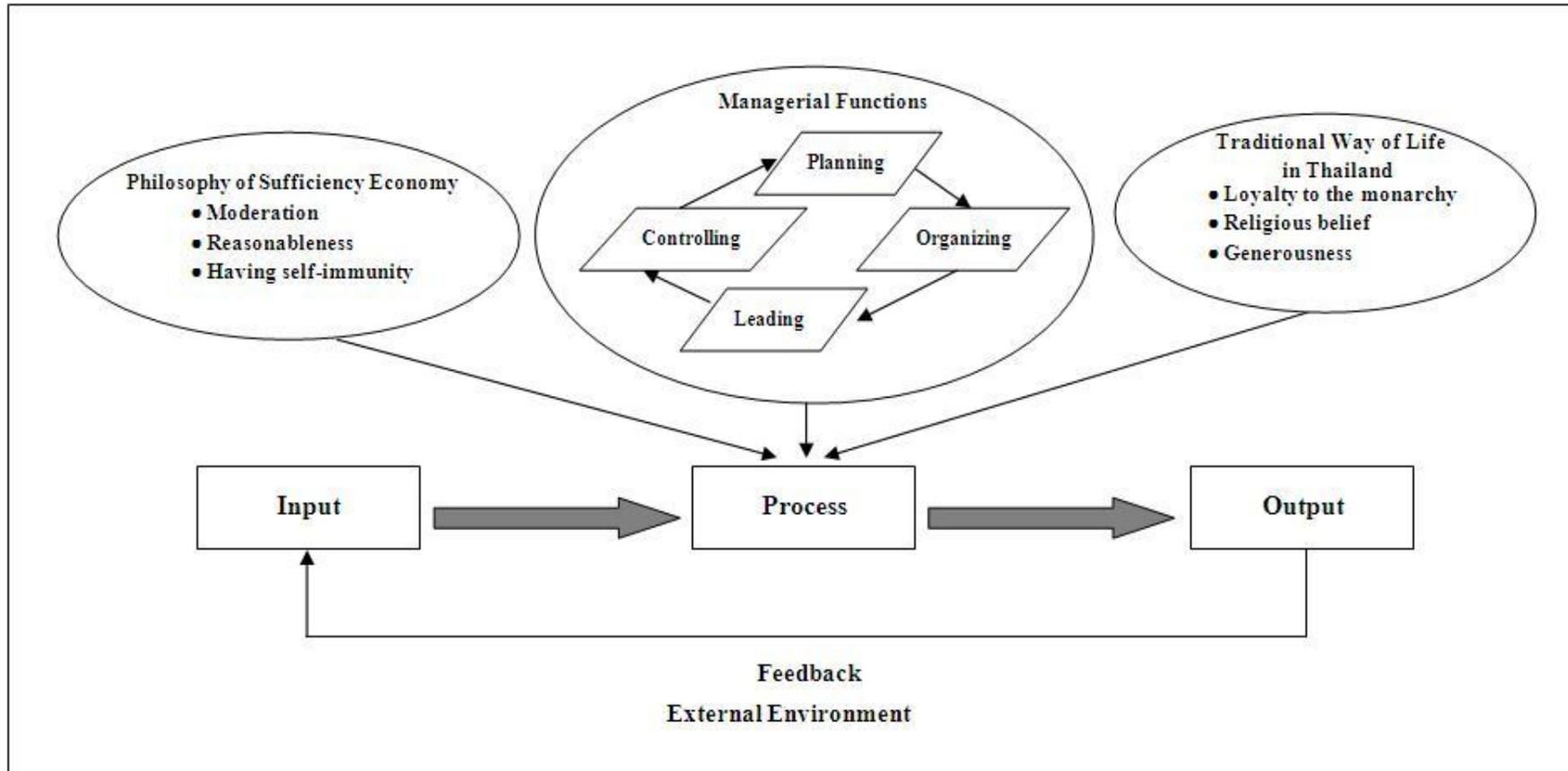
In other words, the traditional way of life of the people of Thailand, since the past until the present, is fostered to be loyal to the monarchy or the royal family, so whatever people can do for their beloved royal family, they will do. For instance, on the celebration of the most auspicious occasion of Her Royal Highness Princess Maha Chakri Sirindhorn's 60th birthday anniversary, many inhabitants in Thailand show their loyalty and love to Her Royal Highness Princess Maha Chakri Sirindhorn by wearing purple shirts and donating blood as to show praise and wish their beloved Princess, Her Royal Highness Princess Maha Chakri Sirindhorn, the second daughter of His Majesty King Bhumibol Adulyadej, King Rama IX, and Her Majesty Queen Sirikit of Thailand ("Birthday anniversary Celebration of Her Royal Highness Princess Maha Chakri Sirindhorn," 2015; National News Bureau of Thailand, 2015). This presents the impact of the way of life in Thailand toward the management of blood donations.

Furthermore, religious beliefs are influential, particularly Buddhist principles which teaches people to do good things, be steady and calm, share and help one another, and avoid behaving malignance or sin because the majority of Thais are Buddhist and they behave following the Buddhist principle as a good way of life. Moreover, the unique characteristics of Thailand as the land of smiles where people are always generous, kind-hearted, and sympathetic, these quite positively support the management of blood donation no matter whether in the ordinary or unexpected circumstances as most blood donors in Thailand never expect any return back from blood donation, but the pride of helping another life from one's donated blood.

For instance, the bombing at Ratchaprasong in 2015 presented the generousness of people in this country as the number of blood donors were over the expectation. This reveals the virtue of people in Thailand that support the management of blood donation.

Another concept that obviously influences the management of blood donations is the sufficiency economy philosophy. This philosophy has three main concepts of management for every aspect: 1) moderation, 2) reasonableness, and 3) having self-immunity. Moderation refers to doing things neither too much nor too little; it's like the management of blood donations that would estimate the need for blood to meet the actual demand, not collecting too many blood units over actual needs, but balancing and controlling them adequately instead.

Reasonableness is the second matter that sufficiency economy philosophy suggests organizations to follow. It refers to an appropriate logic for any decision-making which should have sufficient reason to consider it. NBC also applies this idea as during every urgent time, it will call key persons involved with the issue for meeting and discussing about the cause and effect, as well as the best solution of management. It does not decide according to only one decision maker, but decisions are made by various reasonable people.



**Figure 5.2** Theoretical Contribution of Management Approach

The third pillar of the sufficiency economy concept is to have self-immunity to protect oneself. In other words, applying the past experience to protect the unsatisfactory outcome is the shield for avoiding the threat. The new lesson also emerges and guides everyone to know what one should or should not do. NBC applies this idea as well, because everyday that the blood mobile units go to each location for collecting blood, they will record whether the targeted number of blood donors reached the expected need or not; otherwise it will change strategies or move to another location instead.

The above concepts reveal that the effective performance should consider the capacity of existing resources. The work motivation is also vital like letting workers learn and decide by themselves how to manage their own responsibilities aligning to the vision of the organization, especially in times of uncertainty, and not to force them. Furthermore, the organization should support everyone to see the linkage of work, and how it benefits and improves the whole society. If one perceives and performs the right thing, definitely the happiness for the whole society will followed. Those ways of management can positively support management of blood donations at NBC as everyone is willing to perform their jobs, while blood donors are also willing to give their blood.

### **5.3 Recommendation**

The study found that having a role model as a representative of blood donation of NBC, as Her Royal Highness Princess Maha Chakri Sirindhorn, the director of Thai Red Cross Society has an excellent approach affecting the behavior of Thai people toward blood donations since the event about the celebration of Her Royal Highness Princess Maha Chakri Sirindhorn's birthday can persuade a lot of people to donate blood as making good merit. This suggests that other organizations should have a role model for motivating people to participate in the expected activity. However, the study of the Planned Behavior Theory (Ajzen, 1991; Ferguson et al., 2007) also supports that the perception of control factor, like the social control, can influence the intention toward blood donation.

On the other hand, in other places where they have a different way of life from Thailand, they can also get the benefit through the concept of a traditional way of life in Thailand too. The important thing that needs to be considered is to know and understand the nature of people like the way of life in a particular area, and then apply it by persuading them with a person who they admire.

Furthermore, the “sufficiency economy” philosophy of King Bhumibol Adulyadej is another concept that the author suggests the readers for good management. It is the Thai theory that every organization, not only in Thailand but also every country, can apply because it guides everyone to do anything with moderation, reasonable thinking, and learning through the past experiences for protecting themselves. This concept leads to long-run success for any activity, business, and organization.

Moreover, in the part of recommendation for further success of NBC, from the interviews, the author found that here there are interesting suggestions that can guide NBC to maintain the effective management of blood donation.

There are misunderstandings about blood donation management in which people outside NBC do not understand and distort the facts by word of mouth, as well as posting on social media. There was the posted topic on social media questioning why NBC had to charge money from people who needed blood even though blood is donated free of charge. They were many comments on this both agreeing and disagreeing with it.

People see only their view without checking the facts, yet there are costs of the blood product production process in which various divisions have to pay for the equipment, liquid, etc., involved with the quality and safety of the blood units before arriving at the hospitals for treating the patients. NBC should manage this issue so that people have the right understanding about the true facts for greater support of the work of blood donation management.

Furthermore, it should be promoted that everyone should come to donate blood every three months, not only when seeing any news regarding the need for blood as blood donation is what NBC needs all the time. No matter whether it's for the advanced medical treatment or the increasing trend of an aging society, both reveal higher demands for blood transfusions that NBC has to respond sufficiently to, and in

which it can be long-run effectiveness for management of blood donations if the awareness of blood donations every three months is promoted successfully.

In another words, creating the awareness of blood donations is what people should do like their role-identity, meaning that no matter whether the unexpected events occur or not, they need to donate blood every three months as it is their role as the social giver. If people adjust their attitude aligning to this concept, NBC is more likely to have suitably effective blood donation management. This approach potentially leads to adequately balancing the number of blood donations during uncertain times. This involves the way that the public relations division publicizes the news, especially the right understanding of the need for blood or the need for a specific blood group as well.

Educational support is smart approach for enhancing the perception of blood donation toward teenagers. NBC should propose blood donation as subject of study for students. It should be a part of coursework for students as this topic is crucial for everyone in the country in case of the need for blood. It is like teaching them the concept of “give and take”. This would be the long-run success for increasing the blood supply of the country. In fact, academic institutions do participate in the activities of blood donation but it would be greater if one of the subjects of study is involved with the knowledge of blood donation like history, preparation, benefits of blood donation, and so forth.

The snack to support blood donors should not be only provided after donating blood in the time of uncertainty as they might wait for a long time before they are done, and their energy needs to be refilled before donating blood too. No matter how long the wait for donating blood at blood mobile units or NBC, it should potentially motivate people to come back for and support blood donations. Moreover, facilities like available chairs, fans, etc., must be sufficient to support a large number of blood donors who come during the period of uncertainty. This refers to blood mobile units as well, because when people perceive that they have to wait for long queue, some people still wait and donate blood, but some people may step back from the blood mobile unit.

However, NBC should also provide food for staff during the time of uncertainty, since they have to work harder and have no time for breaks during the

peak times of blood donation, as all workers have to support NBC regarding the influx of blood donors. This would be an interesting motivator for NBC's officers who have to work in the unexpected event. At least, a coupon for lunch or ready meal for everyone is the important need for people to fulfill the energy of the body that can make people active when working for many long hours.

Nevertheless, accommodation during the time of uncertainty is also important for every worker as some people stay far away and live in dangerous areas regarding political turmoil, so it would be better if providing them a space for staying over night at NBC. The mentioned accommodation does not need to be luxurious or convenient like a hotel, but it should be at least a proper space for sleeping that may use some rooms in the building to be temporary bedrooms for some people. However, this must be considered case-by-case by the supervisor for providing the sleeping space. This is one of the interesting motivators toward staff of NBC to keep performing overnight during the time of political unrest or any type of uncertainty.

The excellent solution to support insufficient human resources of NBC during the uncertainty, like political unrest or any other circumstances, is training. The training refers to the basic knowledge and skills about blood donation services when faced with a lot of people; for example, the way to support the blood collection division's work, both at NBC, as well as blood mobile units. Furthermore, assigning people to the job-rotation should be another training for everyone to have basic knowledge of another division, and hence, whatever and whenever an unexpected situation occurs, people can support the work of one another since they have been trained beyond ones' own jobs. It is the long-term human resource management approach for solving the problem regarding insufficient staff in the time of uncertainty.

There are five major divisions regarding to the process of blood donation at NBC that should provide training regarding the basic knowledge of each division for sharing and to support the work during the uncertainty period.

### **5.3.1 Registration and Statistic Division**

When people come to donate blood, the first thing they have to do is to fill in the registration form for which blood donors may have questions in some parts and

need people to advise them. The tasks of this division also include looking after blood donors since they arrive at the location.

### **5.3.2 Blood Collection Division**

After people have filled out the registration form completely, they must be checked regarding physical and health conditions for the qualification of eligible blood donors. This division would screen the appropriate blood donors by questionnaire, asking about individual risk toward blood donation, and collecting blood units from blood donors as well.

### **5.3.3 Blood Screening Division**

The technicians in the laboratory would perform scientific screening for infectious agents and NAT, as well as testing for blood types of individual blood donors. This division requires technical skills about blood screening by technicians.

### **5.3.4 Blood Component Production Division**

After collecting and screening blood units, the next step is to produce the blood components according to the requested demands that are obtained from the blood distribution division. The blood component production division also prepares the various types of blood bags aligning to the demands of particular blood components. Furthermore, this division labels the blood groups of blood donors on the blood bags.

### **5.3.5 Blood Distribution Division**

The last phase before the blood units reach the hospitals occurs in the blood supply room where collected and screened blood units are maintained. This division would know the best demands for blood products of hospitals in the country and the number of blood units that should be collected daily in normal and urgent times, as well as the quantity of demands for blood components that blood component production has to produce to support the demands of various hospitals in Thailand.

After many people have a misunderstanding about the facts of the blood donation process, NBC is negatively blamed. So that everyone understands, NBC

should make a video clip presenting all necessary information that can clarify any misunderstandings about blood donations of NBC. It should particularly focus on the need for blood, appropriate time to donate, preparation for blood donation, benefits, and the main process during and after blood donation. Whenever there is a dispute regarding blood donation at NBC, people can utilize this video clip as the answer and guidelines for blood donation.

The division of blood component production is one of the hardest working divisions with limited working space which contrasts to the amount of work. This mainly refers to the refrigerator for plasma, since the production of plasma is opposite to the quantity of consumption. Furthermore, in the case of higher demands for blood components in the future, a larger space is required for maintaining the produced blood components as well.

Even though the blood distribution division has not faced any problems during political unrest, as well as other types of uncertainty, the space of maintaining blood units before distribution to hospitals in Bangkok and other provinces is still small for keeping the large amount of blood units in the future. Besides that, the logistics of blood distribution should be implemented by NBC rather than hospitals themselves in order to maintain and ensure the quality of blood in meeting the standards before reaching the hospitals for use in medical treatment with the patients who need a blood transfusion. Because different transportations of hospitals have the issue about the temperature concerned in which it is about controlling the quality of blood units to meet the standard of blood maintenance before utilizing. The support of logistical issues may be involved with external support or sponsors about the funds for managing the logistics of blood units. This could ensure that every blood unit distributed from NBC are met with the acceptable standards for the quality of blood.

The fixed site for blood screening for NBC during the time of uncertainty like political turmoil is an issue that should be considered for supporting the blood screening of the collected blood units. During the political unrest, it is difficult to transport blood units from the other sites that do not have the laboratories for Nucleic Acid Testing, or NAT, to be performed at NBC instead, but in case there are more fixed sites that could perform this kind of job, it can sufficiently support the efficient screening for infectious agents and NAT in the urgent period of time resulting from political turbulence.

As NAT is an advance technical screening for confirming the safety of collected blood before distributing to hospitals, the appropriate way to keep performing this task in the time of political turmoil, as well as other unexpected event, should be considered beyond transporting all collected blood units only to NBC, as during that period, there may be traffic and other obstacles against accessibility; and hence, more fixed sites of blood donation that can also support laboratory work should enhance the task of safety checking for collected blood of NBC. Increasing the number of fixed sites for blood donation in Bangkok or the central region can also increase the number of blood donors for NBC during the unsafe period for coming to donate blood at NBC.

Moreover, the administration management of logistics is also involved with the efficient performance of blood screening in which it should find the appropriate solution to transport the collected blood units for being screened for suspicious germs to the nearest site of blood donation, as it must not focus only on the main place at NBC if there are also other places that can perform the tasks during the urgent time against the accessibility to headquarters. In other words, NBC should decide whether to increase the number of sites that can perform the screening for NAT or if it should find a logistics way to transfer the collected blood units to NBC for blood screening, especially NAT.

Besides the previous suggestions, there are also the motives that can contribute to the effective management of blood donations as these motives enhance the management of blood donations, especially in the time of uncertainty: 1) Awareness of the need for blood, preparation, and benefit of blood donation, 2) Many convenient places for blood donation, and 3) Sufficient car park for blood donors. If NBC can manage these issues appropriately, a higher number of blood donations, particularly in times of uncertainty, would follow.

#### **5.4 Academic Contribution from this Research**

The case study of NBC reveals that this non-profit organization gets the support from everyone willingly since the way of life in Thailand, as well as the philosophy of sufficiency economy play an important role in stimulating people

toward donating blood. For example, the critical situation like the political unrest in 2010 that prevented people from accessing the office building of NBC, but the full-hearted efforts of workers that are faithful to the organization did not give up with any obstacles against their routine work to achieve the goal of organization. Everyone still kept trying their best to perform the tasks until the target was achieved.

The ways of life in Thailand impacts the management of blood donations; there are not only NBC's workers, but also blood donors as they are willing to support the blood supply of NBC. The Buddhist's principle teaches people in Thailand to help others willingly without expecting for any return, leading to the satisfied performance of NBC resulting from the ways of life in the country.

The sufficiency economy philosophy of King Bhumibol Adulyadej also has an effect on the management of blood donations since it follows the three pillars: to be moderate, reasonable and learning from experience. This philosophy leads NBC to manage blood donations effectively as everything would be managed appropriately by rational thinking from experienced people.

The study of NBC shows that having many plans for handling the management of blood donations is an imperative approach in which those plans should also come from various thoughts of workers rather than only from exclusive authorized-decision makers. If there are the participants from individual divisions involved, the potential plan would be more likely applied because each participant knows the real problems of the performance of the divisions leading to a better analysis and suggestion for the appropriate solution.

The interesting point which comes from the case of NBC is that the application of philosophy of sufficiency economy in management of blood donation creates the effectively satisfied outcome. Moreover, the way of life in this country also enhances management of blood donations no matter whether it's during the general time or unexpected situation in which NBC does not need much motivators for stimulating blood donations. Normally organizations give the importance only to human resource management which particularly focuses on their officers which is quite different from NBC in that it does not only count its employees as human resources, but also blood donors who are a part of the organization's success. It pays attention to how its human resources can suitably perform in case of being faced with

various obstacles; how workers can come to the meeting points or perform at particular locations, as well as the safety of everyone, are the issues that NBC is concerned with, which is also obtained from the sufficiency economy concept.

Furthermore, NBC also pays attention about the convenient time and place for blood donors before making the plan for blood collection in Bangkok. This statement aligns with the study of Shaz et al. (2009) saying that the most influential factor that positively motivates people to donate blood is the convenience of donating location.

If comparing the blood donors as the customers of organizations, blood donors are the customers who mostly do not expect any return back from the organization, but rather hoping for helping the society and organization, because blood donors perceive the value of their giving at NBC with the willingness to support the organization, so the influence of the sufficiency economy concept and the way of life in Thailand much impact on the management of blood donations.

These two concepts positively affect the management of blood donations in Thailand which are different from the western management style. The important matter is that knowing the way of life in a particular region can enhance management effectively. Finally, the philosophy of sufficiency economy is another useful concept to support the effective management for an organization's long-run success.

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## **APPENDICES**

## APPENDIX A

### INDIVIDUAL DIVISIONS PERFORM TASKS ACCORDING TO THE CODE

	Division	Code 500	Code 1000	Code 3000	Code 5000
		500-1,000 donors	1,000-3,000 donors	3,000-5,000 donors	< 5,000 donors
1	<b>Blood Collection</b>	Within 8hours	Within 8hours	Within 8- >8hours	Within 8- >8hours
	<u>Place</u>				
	24 beds for blood donation in building	12-24 beds	12-24 beds	24 beds	24 beds
	8 beds per blood drives	-	6 blood drives	6 blood drives	6 blood drives
	Extra bed	-	8 beds	8 beds	8 beds
	Cancel mobile blood donation unit	-	-	✓	✓
	Ask for supportive unit from branches in Bangkok, or others in Thai Red Cross Society	-	-	2 units	> 2 units
	<u>Human resource</u>				
	1 doctor	2-4	4-15	15-22	> 22
	31 nurses and chiefs of divisions	3-6	6-20	20-23	> 23
	14 assistant nurses	2-4	4-11	11-15	> 15
	13 medical science officers	2-3	3-10 (3 extra staffs' Antiserum division)	10-14 (5 extra staffs' Antiserum division)	> 14 (5 extra staffs' Antiserum division)
	27 laboratory technicians	3-8	8-22	22-25	> 25
	5 laboratory officers	3-4	4-18	18-26	> 26
	Request for Red Cross volunteers	4	10	14	14
	<u>Equipment</u>				
	40 barometers	2-4	4-15	15-22	> 22
	Hematocrit measurement device	Sufficient	Sufficient	Sufficient	Sufficient

	Blood collection tools	Sufficient	Sufficient	Sufficient	Sufficient
	Taking care blood donor tools	Sufficient	Sufficient	Sufficient	Sufficient
2	<b>Registration and Statistic</b>				
	<u>Place</u>				
	Registration counter	✓	✓	✓	✓
	Registration point at garden in front of 1 floor building	✓	✓	✓	✓
	Fill in the form and computer setting point e.g. multipurpose room, blood drive	✓	✓	✓	✓
	<u>Human resource</u>				
	9 data inspectors	2-4	6-9	9	9
	Data entry officers	8-14	14-22	22-28	28
	Foreign service officer	-	2	4	6
	Registration form supporter	1-4	4-6	6-10	10-15
<p>Note: 1. Code 300 must have 28 data entry officers and Code 5000 must have 6 more supporters from other division to work for registration and statistic division about registering the blood donation (It requires people who have already been trained about registration software.)</p> <p>2. Code 1000, Code ,000 and Code 5000 request for outsiders to support registration form service for registration and statistic division at the registration points e.g. garden in front of 1 floor building, multipurpose room, blood drives, and so on.</p> <p>3. Code 3000 and Code 5000 need 1 janitor to help registration and statistic division move computer, fan, and document from storeroom.</p>					
	<b>Division</b>	<b>Code 500</b>	<b>Code 1000</b>	<b>Code 3000</b>	<b>Code 5000</b>
2	<u>Equipment</u>				
	Documents	2,000	5,000	8,000	10,000
	Computers that can link the main computer with printer, plastic card, and sticker	4-5	5-8	8-10	10
	Computers that can link the main computer	10	10	10	10
3	<b>Blood bag and liquid production</b>				
	<u>Human resource</u>				
	5 staffs for preparing blood collection tools	5	5	5	-
	6 staffs for preparing sterilized tools	6	6 (request 2 more)	22 (request 3 more)	-

	21 staffs for producing added type of blood bag	-	-	Increase production of Single bag	-
4	<b>Screening and Blood Supply</b>				
	8 technicians for blood type checking	8	8 (request 2 more scientists from laboratory room)	8 (request 5 more scientists from antiserum liquid production division and 3 more officers from laboratory room)	8 (request 5 more scientists from antiserum liquid production division and 4 more officers from laboratory room)
	10 technicians for infection screening	10	10 (request 3 more volunteers)	10 (request 8 more volunteers)	10 (request 10 more volunteers)
	8 blood supply officers	8	8 (request 2 more volunteers)	8 (request 4 more volunteers)	8 (request 5 more volunteers)
5	<b>Plasma and Blood Transformation</b>				
	11 staffs	21	30		
	<u>Equipment</u>	-			
	Add bag line sealing machine	-	4		
	Add TSCD bag line welding machine	-	2		
	Add bag sealing machine	-	3		
	Add blood component shaker	-	2		
	Open container	-	1-2		
Plastic basket	-	30			
Note: Plasma and blood transformation division can maximum prepare 200 units of blood components.					

6	<b>Public Relations and Blood Provision</b>				
	Set public relations section in front of building		✓	✓	✓
	Operator for answering inquiry/ follow Rh-negative blood donor		2	5	8
	Publicize news and take care media		2	5	8
	<b>Division</b>	<b>Code 500</b>	<b>Code 1000</b>	<b>Code 3000</b>	<b>Code 5000</b>
	Coordinate with blood mobile unit		2	2	2
	Arrange queue for blood donor		10	20	30
	Take care of blood donor		3	5	10
	Take photographs		2	3	5
7	<b>Support Divisions</b>				
	<b>General Administration Division</b>				
	Prepare place, table, chair, and stereo	2	4	6	10 (Request 1 more paid volunteer)
	Prepare inventory	-	2	4	4
	Prepare packaging blood	-	2	3	4
	Transporting blood unit	-			Request 1 more paid volunteer
	Prepare blood drive and vehicles	-	8	12	12
Prepare food for officers and blood donor		2	4	4	
	Send letter of blood donation registration suggestion	-	4	-	6
8	<b>Antiserum liquid cell product production</b>				
	Send staffs to support blood type checking	-	3	5	5
	Send staffs to support laboratory unit	-	-	5	5
9	<b>Blood Component Production</b>				
	Send staffs to prepare blood components	4	8-10	-	-
10	<b>Quality Control</b>				
	Send staffs to support blood bag, tools, and liquid production	-	2	3	4

11	<b>Laboratory and WHO Coordination</b>				
	Open plasma and platelet donation room for blood donation	-	-	-	Open 6 beds after 12 pm.
	Send nurse to support puncturing blood	-	1	2	-
	Send staffs to support screening division	-	2	3	4

**Source:** NBC

## **APPENDIX B**

### **QUESTIONS ASKING DIRECTORS AND OFFICERS OF NBC**

#### **1. Question Asking Director**

How could NBC handle with the unexpected situation resulted from political unrest toward the pursuing effective blood donation management?

- What is/are the motivator(s) supporting management of blood donation?
- What is/are barrier against management of blood donation?
- How does NBC manage the blood donation for achieving the daily targeted number of blood donation during unexpected times?

What is/are the motivator(s) supporting management of blood donation during unexpected times?

- What is/are barrier against management of blood donation during unexpected times?

#### **2. Question Asking Officers**

What are the feedbacks of management approaches regarding the issues that officers of National Blood Center think the authorized-decision maker should consider for pursuing the better management of blood donation?

- How do you feel about the management of blood donation at NBC?
- Do you think there is/are something that needs to be adjusted for better management of blood donation? Please explain.



**Part 2** The Attitude toward Blood Donation During Uncertainty

Are you willing to donate blood **during uncertainty** in case that National Blood Center provides the following motives? Please rate your attitude.

	<b>Strongly Disagree</b>	<b>Disagree</b>	<b>Neutral</b>	<b>Agree</b>	<b>Strongly Agree</b>
1. The awareness of the need for blood, knowledge about preparation and benefit for blood donation through social media	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
2. Shuttle bus from various points to National Blood Center	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
3. Many convenient places for blood donation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
4. Online booking in advance for blood donation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
5. The video clip that presents the fact regarding to blood donation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
6. Facilities during the waiting time for blood donation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
7. Sufficient car park for blood donors	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
8. Activities during the waiting time for blood donation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
9. Have superstar as the presenter of blood donation	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
10. Attractive incentive	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## **BIOGRAPHY**

<b>NAME</b>	Miss Benjamaporn Dhanakoses
<b>ACADEMIC BACKGROUND</b>	Bachelor's Degree in Business Japanese, Faculty of Arts, Assumption University, 2007.  Master's Degree in International Business, University of Wollongong, 2009.  Master's Degree in Business Administration, Assumption University, 2010.
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