AN EMPIRICAL INVESTIGATION OF SUSTAINABLE LEADERSHIP AND PERFORMANCE OUTCOMES IN THAI HEALTHCARE ORGANIZATIONS

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ABSTRACT

In recent years, sustainability in healthcare has been concerned globally. One of the healthcare sectors which accounts for major contribution of the whole system is pharmaceutical industry. There are few studies investigated about the leadership practices in this industry. The objective of this study was to empirically examine which sustainable leadership (SL) factors (Honeybee) significantly affect perceived Sustainability Performance Outcomes (SPO) and employee satisfaction in the Thai pharmaceutical organizations. The scope of this study was based on managers and employees who were working in pharmaceutical organizations, which mainly sell their products within Thailand. The study used quantitative research by analyzing collected data from structured questionnaire from 543 respondents. Structural equation modeling (SEM) was used to investigate the relationship between exogenous and endogenous variables. After all assessment, the evidence and confirmatory factor analysis (CFA) revealed that unidimensionality, validity, and reliability of the model was acceptable. The findings from SEM showed that the direct effects from SL factors to both SPO and employee satisfaction were positive. All effects were statistically significant; the exception is for social responsibility for SPO, as well as environmental responsibility and social responsibility for employee satisfaction. However, the model supported a positive predictive relationship between SL factors with both SPO and employee satisfaction in Thai pharmaceutical organizations. The results narrowed gaps in the literatures, which separately investigated each dimension of sustainable leadership. The structural equation model provided more understanding towards the leadership and management factors in Thai pharmaceutical organizations.

KEY WORDS: Sustainability, Healthcare Organization, Performance

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CHAPTER I
INTRODUCTION

The chapter begins with the research background and problem statements of the thesis, followed by research objectives, questions, framework and the significance of the research. Then, the last part of this chapter presents overall outlines of the thesis.

1.1 Research Background and Problem Statements

Researchers often developed their study to figure the real definition of leadership as well as how to use it effectively in diverse contexts, including in healthcare industry. Elaborating on the leadership styles of the healthcare capital, Zumitzavan (2015) proclaims that there was no intrinsic definition of leadership despite myriad studies, however, leadership could be defined generally as the capability of top management to support and encourage their members to generate exertion superior to their personal normal performance level, which would lead to improvement of organizational performance aligned with several academic articles that claim leadership as an expedient factor for effective development in the healthcare industry (Zumitzavan & Michie, 2015; Kantabutra, 2011; Andersson, 2015; McSherry & Pearce, 2016).

Nonetheless, healthcare industry consists of various dimensions for holistic healthcare management. The multidisciplinary healthcare team play important role for the holistic approach and there are several scholars have researched for definition, characteristic and significance of leadership in individual role. Many scholars searched for importance of medical doctors' leadership and their definitive role (Andersson, 2015; Denis & Van Gestel, 2016). The leadership has often been referred as clinical leadership from some researchers (Joseph & Huber, 2015; McSherry & Pearce, 2016; Denis & Van Gestel, 2016), which defined as the engagement and guiding role of health care professionals in health system improvement. Some researches define clinical leadership for nurses as the process of influencing point-of-care innovation and improvement in both individual

care practices and organizational processes in order to achieve outcomes such as quality and safety of care (Joseph & Huber, 2015; Huber, 2014). The pharmacy profession and leader could help to contribute multidisciplinary healthcare and intersectional team capability and effectiveness (Sims, Hewitt, & Harris, 2015; Mirkov, 2018).

According to the integrative review focuses on leadership related to healthcare, leadership shows significantly important for development and management in health-related organization which would lead to sustainability in healthcare system; as organizational performance improvement, ensuring quality of care and patient safety are internationally and also mutually concerned by both global context and individual country governance (Akerjordet, Furunes, & Haver, 2018; de Zulueta, 2016; Sims et al., 2015). In regard with the global healthcare concern, the United Nations declared emphasis on sustainable development goal (SDG) in 2015. The United Nations adopts the SDG specifically for sustainable healthcare which is the goal 3 entitled for ensuring the healthy lives and supporting the well-being of people regardless of their age. The United Nations also states that it is significant to have sustainable development in health systems, funding, medical research and the area of pharmaceutical industry (United Nations, 2017). Furthermore the World Health Organization or WHO also emphasizes on the sustainable development goals from the United Nations. WHO reported data which has been organized for monitoring the progression towards the SDGs (World Health Organization, 2017). These implementations account for importance of sustainability specifically in healthcare context emphasized by global organization and concerned for every country throughout the world either developed countries or developing countries, where less fund and research has been afforded.

Ultimately, this thesis should greatly contribute to the existing literature by helping prioritize the workforce and leadership management which significantly affect to global concern and emphasis on healthcare sustainability through the supported empirical evidence from developing country.

The global concern on sustainability in healthcare has spread to Asia region as well. According to 35th Session of WHO South-East Asia Advisory Committee on Health Research (SEA-ACHR) in October 2017, which aimed at boosting health research capacity at national level and linking it to SDGs and Regional Flagships, the regional advisory shows substantially important role for promote the sustainable development

(35th Session of WHO South-East Asia Advisory Committee on Health Research (SEA-ACHR), 2017; United Nations, 2017). Additionally, there are many researches focusing on sustainability of healthcare organization and its underlying factors, for example, management, leadership approach or shared knowledge (Zumitzavan & Michie, 2015; Kantabutra, 2011; Himathongkam & Vannapruegs, 2016; Avery, 2016; McGivern, Currie, Ferlie, Fitzgerald, & Waring, 2015; Denis & van Gestel, 2016; Schott, Van Kleef, & Noordegraaf, 2016).

Although there were fewer researches implemented in the Asian context than western countries, the emphasis on the developing countries has been substantially enhanced over the last decade as those countries have significant role and impact globally, especially for healthcare industry which is one of the world's fastest-growing and largest industries, which consumes over 10 percent of gross domestic product (GDP) of most developed countries (Henry, 2016). The healthcare industry determines the GDP or the gross domestic product of the country and also projected for growth in almost countries. Those projections show similar trend to Thailand, which has been considered to be the second largest healthcare market from Indonesia in Southeast Asia, paying approximately 20% of the total expenditure of this region. Furthermore, Thailand prioritizes healthcare industry as top precedence, which is supported by government's expenditure on healthcare is up to 14% of its total budget (Worldbank, 2017). The healthcare industry in Thailand has been flourishing over the past decades as, in 2005 and continued dramatically growing in 2006 with the advocate of the Ministry of Health's, launching four-year investment plan to improve the health care standards (Thailand Board of Investment, 2016).

In addition to Thailand economic significance, scholars (e.g. Kantabutra, 2011, 2012a, b, 2014; Kantabutra & Suriyankietkaew, 2013, 2016; Suriyankietkaew & Kantamara, 2019) discuss a shift for organizational leadership with a long-term orientation and care for all stakeholders in creating sustainable businesses in Thailand. Various studies (Kantabutra, 2010c, 2012c, 2014; Khunthongjan, 2009; Puntasen, 2003; Himathongkam, 2016) also mentioned that some Thai organizations have already adopted a similar approach, termed the 'Sufficiency Economy philosophy' which was first promulgated by His Majesty King Bhumibol Adulyadej of Thailand in 1997. The application of Sufficiency Economy philosophy in healthcare organization has been investigated and

adapted to solve various gaps and problems in healthcare system. The substantial effect and contribution for the country has also been illustrated. Thus, the extension of this concept should be conducted in order to emerge and leverage genuine effect for the country (Himathongkam, 2016).

The sustainable leadership (SL) approach derived from Avery and Bergsteiner's (2010, 2012) could substantially provide impacts to organization sustainability and organization performance. It has been studied by many scholars in various industries and contexts. Nonetheless, there were few researches proclaim for the holistic approach in healthcare industry. All 23 practices, which are grouped in three levels of leadership practices on the foundation level, higher level and performance drivers, have been investigated separately in several researches described in the Chapter 2.

According to American College of Healthcare Executives (ACHE), healthcare organization (HCOs) includes aggregated and integrated sectors within economic system, which provides goods and services for patients with holistic approaches. One of the healthcare sectors which account for major contribution of the whole system is pharmaceutical industry for both global and Thai context. The industry has the high growth rate over the past few years in Thailand. And Thailand plays an important role as economic driver for Southeast Asian Nations and also has been considered as the medical destination of Asia, which could provide extensive impacts on global context. Therefore, it can be certainly predicted that this industry will reach the drastic growth in the upcoming future as currently the industry already has extended that Thailand imported more than $2.2 billion in pharmaceuticals based on 2016, which seemed great amount as it greatly increased from $1.8 billion in 2014 (Luangpirom, 2016). Moreover, Thai government launched a strategic plan to support the rise of pharmaceutical industry during 2012-2016 with the attempt to increase the potential of the pharmaceutical industry via the research and modernizing manufacturing activities. This strategy covered the measures to the improvement of the competitiveness of the pharmaceutical industry through R&D and further development of an environment that is conducive for indigenous industry growth (Thailand Board of Investment, 2016).

However, there are various challenges within the pharmaceutical industry as the companies within such industry encounter with the lesser profits and sometimes even struggle with the loss because their clients with chronic conditions often turn into

non-adhering to their medication (Khanna, 2017). This enforces the companies to reset their workforce structure, moving their workers to work in new position, eliminating some positions which seem not productive, or even switching working area under the responsibilities of sales representative and laying off some workers for them in order to minimize the cost. This leads to high turnover rate as a consequence. When the workers have to switch their works, responsibilities, job descriptions and areas of work particularly for the sale representative and product manager frequently, the workers will be unpleasant with their work and resign or change their job at the end. In other words, this creates negative impact to the pharmaceutical companies as their workers have lesser job satisfaction, resulting in the resignation of them afterwards. The problem could significantly lead to organization performance and also sustainability. The causes of these problems are the economic crisis, which is national problem, as well as the state policy related to the pharmaceutical industry such as "The 30 Baht Health Care Scheme and Health Security in Thailand" and "National List of Essential Medicines". Other relevant causes to these worst events include the medicine running out of patent and getting generic copy of specific medicines for sales at the lower price and medical tourism or strategy of some hospitals such as Bumrungrad Hospital which also affects the stock management of pharmaceutical companies. Various issues could make organization in the healthcare system be frantic. All of these problems can also lead to not only organization effect but also the negative impacts on the revenue of the country. All of these issues could lead to managerial development and also the sustainability of organization.

Regarding to importance of healthcare sustainability focused by global and individual concerns, this thesis will emphasize on sustainable leadership approach and management paradigms of healthcare industry, specifically in pharmaceutical organization in Thailand, and impact on organization performance in the long term.

In conclusion, this thesis is intent to address these challenges and gaps in previous literatures and attempts to further expand current understanding and empirical evidence for underlying leadership and management practices derived from the SL framework influencing to performance outcomes and organizational sustainability in pharmaceutical organization among Thai context.

1.2 Research Objectives

According to a lack of some point mentioned in Research Background and Problem Statements, the core purpose of this thesis is to extend current knowledge of the important strategic and management driving performance outcomes and organizational sustainability in the healthcare organization, specifically for pharmaceutical organization context.

The thesis will examine relationships between various leadership and management practices derived from Sustainable Leadership (SL) (Avery & Bergsteiner's, 2010, 2012) and performance outcomes for organizational sustainability based on Sustainability Performance Outcomes (SPO) tailored for pharmaceutical organization, which is explained in the chapter 2. The specific objectives of this investigation is to explore whether SL factors affect perceived Sustainability Performance Outcomes (SPO) and employee satisfaction in Thai pharmaceutical companies as well as provide confirmation of the general validity of the structural equation model.

1.3 Research Questions

The central strategic research questions (RQ) in this thesis are:

RQ1: What SL factors positively predict relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization?

RQ2: What SL factors positively predict relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organization?

1.4 Theoretical Framework for the Thesis

The leadership framework for this thesis is portrayed in Figure 1.1, which depicts a pyramid containing SL (Honeybee) practices. It is noted by researchers that organization where adopts this framework is more likely to be sustainable enterprises and perform better than their non-SL peers (Avery & Bergsteiner, 2010, 2011a, b, 2012; Kantabutra, 2011, 2012a, b; Kantabutra & Avery, 2013; Kantabutra & Suriyankietkaew,

2013, 2016; Suriyankietkaew & Kantamara, 2019; Himathongkam, 2016; Avery, 2016) which effecting to organizational sustainability.

The SL model (Figure 1.1) is arranged as a pyramid, including of three levels of leadership practices;

1. The foundation level includes 14 practices (continuous people development, amicable labor relations, long-term staff retention, internal succession planning, valuing people, ethical behavior, long-term perspective, considered organizational change, independence from financial markets (or outside interference), environmental responsibility, social responsibility, stakeholder approach, and using a strong and shared vision)

2. Higher-level includes 6 practices (devolved and consensual decision-making, self-management, team orientation, enabling culture, knowledge retention and sharing, and trust)

3. Performance drivers include 3 practices (innovation, staff engagement and quality).
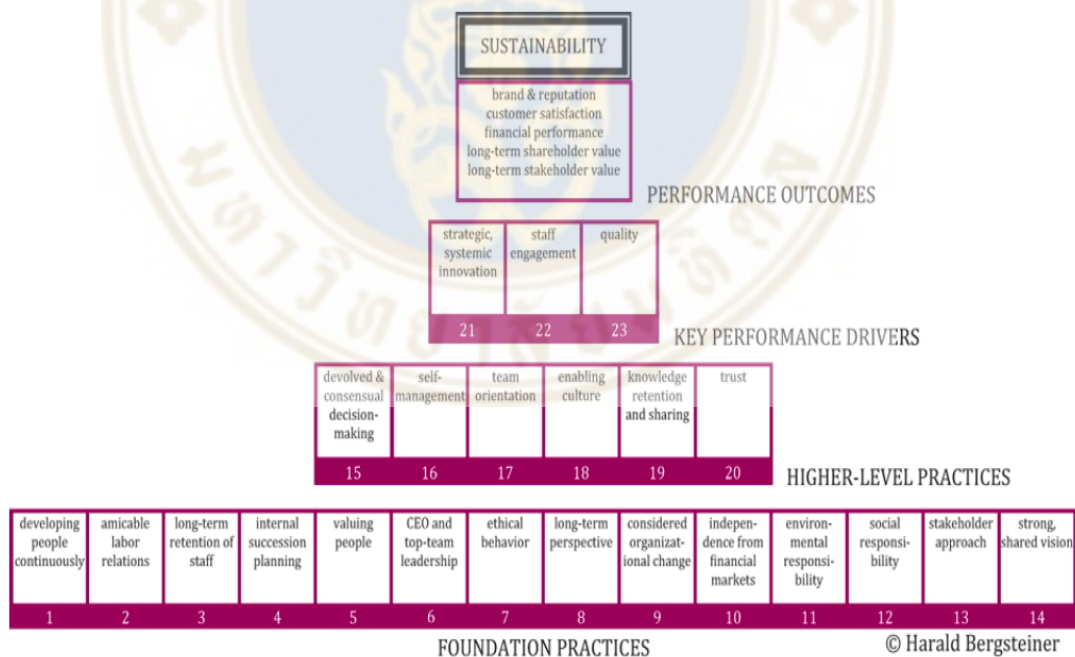
Figure 1.1 Sustainable Leadership Framework
Source: Avery and Bergsteiner (2010, p. 39)

This study employs Avery and Bergsteiner's research, Sustainability Performance Outcomes (SPO), for organizational sustainability which include brand and reputation, customer satisfaction, financial performance long-term value for multiple stakeholders and long-term shareholder value as the core focus of the study. Regarding to gaps for previous researches on the various goals of different enterprises, in order to customize the performance outcome with the pharmaceutical industry and measurement limitation in local unlisted company, the stakeholder satisfaction included customer, supplier, distributor and employee satisfaction will be employed. The justification is provided in Chapter 2.

According to the previous literature, various SL practices effect differently to organizational performance and sustainability. Nevertheless, an examination of their relationships between various leadership and management factors and SPO is still underdeveloped. Thus, this thesis empirically examines those relationships derived from the SL framework and the SPO which tailored for pharmaceutical industry across Thai healthcare organization, specifically for pharmaceutical organization.

1.5 Significance of the Research

This thesis would provide more understanding and empirical evidence for the explication of those challenges mentioned in the research background and problems. Furthermore, the research questions and objectives are designed with the regard of addressing gaps in previous literatures. The study would greatly contribute to the existing literature by helping prioritize leadership approach, management, the association and impact on sustainability of organization, which has been significantly emphasized by global and individual concern.

The significance of this research study aims to supply the increasing demand for leadership and strategy researchers for further studies related to organizational sustainability in healthcare organization, focusing on pharmaceutical companies, as an empirical investigation in Thailand. Regarding significance of Thailand towards Asia and global context, the research therefore provides support and more understanding upon the empirical evidence from developing country. Elsewhere, the investigation on

pharmaceutical companies could proclaim for the major contribution of healthcare organization and impact for healthcare system.

As a matter of fact, this study aims to dismantle the complex nature of variables as this study will narrow the gap in the literature, which separately investigated each dimension of sustainable leadership. The multi-dimensional aspects of leadership and management are also under consideration to engender more effective corporate performance for organizational sustainability via sustainable leadership framework. Based on this research both financial and non-financial measures are employed to evaluate organizational sustainability. Moreover, this thesis aims to strengthen the knowledge of the emergent multi-disciplinary through the investigation of key factors stem from the sustainable leadership framework which leads to success in healthcare organization performance.

Also, this thesis improves the emergent conceptual model and management of leadership of pharmaceutical organizations. Moreover, this thesis aims to examine the relationships between multi-leadership and management factors depending on sustainable performance outcomes and through this study, the gap in knowledge is to be fulfilled by this study will indicate any relevant differences between organizational members to extend the current knowledge. As a consequence, the results could be served as the tools for producing awareness of differences and how it impacts the performance of those workers who perform for their common goal with the aims to boost the corporate performance as well as retaining organizational sustainability. As well, for the upcoming trend, the study aims to figure out the strategy of pharmaceutical organizations which is different from the past and to explore its impact on sustainable leadership.

Ultimately, researchers of this thesis will benefit as gaining more understanding towards the leadership and management factors. Therefore, this thesis contributes significantly to the existing literature and prepares explanation of the sustainable leadership phenomenon within organization.

1.6 Outline of the Thesis

The thesis is divided into six chapters. Chapter 1 explains the research background, objectives and questions, and provides a research framework for this research. Table 1.1 summarizes the research objectives and questions underlying this thesis.

Chapter 2 reviews, and discusses current gaps and problems in the current literature, as well as explaining the SL theoretical framework and developing hypotheses for the thesis. Chapter 3 identifies the research methodology employed for this study. Data analysis methods, hypothesis-testing and data interpretation are examined in Chapter 4. Chapter 5 covers research findings, final discussion and managerial implications. Lastly, contributions to knowledge, limitations and future research are provided in Chapter 6.

Table 1.1 Summary of Research Objectives and Questions

| Research Objective (RO)	Research Question (RQ)
RO1: To empirically examine which SL factors significantly affect perceived Sustainability Performance Outcomes (SPO) and employee satisfaction in Thai pharmaceutical organization as well as provide confirmation of the general validity of the structural equation model.	RQ1: What SL factors positively predict relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization?
	RQ2: What SL factors positively predict relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organization?

CHAPTER II
LITERATURE REVIEW

2.1 Leadership in healthcare

2.1.1 Definitions of Leadership in healthcare

The term "leadership" was devised over a past decade and has become increasingly familiar in management development verbalization. Researchers often developed their study to figure the real definition of leadership as well as how to use it effectively in diverse contexts, including in healthcare industry. Elaborating on the leadership styles of the healthcare capital, Zumitzavan (2015) proclaims that there was no intrinsic definition of leadership despite myriad studies, however, leadership could be defined generally as the capability of top management to support and encourage their members to generate exertion superior to their personal normal performance level, which would lead to improvement of organizational performance aligned with several academic articles that claim leadership as an expedient factor for effective development in the healthcare industry (Zumitzavan & Michie, 2015; Kantabutra, 2011; Andersson, 2015; McSherry & Pearce, 2016).

2.1.2 Significance of Leadership in healthcare

In particular, there are various researches of leadership in healthcare context relating to holistic healthcare management. Many scholars searched for importance of medical doctors' leadership and their definitive role (Andersson, 2015; Denis & Van Gestel, 2016). The leadership has often been referred as clinical leadership from some researchers (Joseph & Huber, 2015; McSherry & Pearce, 2016; Denis & Van Gestel, 2016), which defined as the engagement and guiding role of health care professionals in health system improvement. These studies also emphasize the importance of strong clinical leadership to drive improvement efforts and organizational performance. Leadership

and engagement of other professionals are also crucial for health system improvement (Denis & Van Gestel, 2016; Daly et al., 2014).

Regarding the holistic approach for healthcare management, nurses are emphasized as the crucial part of healthcare system. Scholars (Akerjordet et al., 2018) have claimed that leadership in nursing is defined as the person who has the requisite agency to positively influence other employees and culture, climate and performance of the organization. Nursing leadership is critical in building a supportive and healthy environment to ensure workforce productivity leading to a decrease in organizational costs with higher quality of healthcare and patient safety (Collini, Guidroz, & Perez, 2015; Feather, 2015; Akerjordet et al., 2018). Some researches define clinical leadership for nurses as the process of influencing point-of-care innovation and improvement in both individual care practices and organizational processes in order to achieve outcomes such as quality and safety of care (Joseph & Huber, 2015; Huber, 2014).

Furthermore, the health-promoting leadership related to pharmacists can help to capture the leadership dynamics of organizations more holistically. The pharmacy profession and leader could help to contribute multidisciplinary healthcare and intersectional team capability and effectiveness (Sims et al., 2015; Mirkov, 2018). Due to influenced interpersonal relationships, collaboration and trust among team members by the dominant developmental level and mindset of leaders, the leader in the pharmacy profession is substantially essential. The performance outcome, for example, patient outcome and employee well-being improvement, is also affected from leader capability to create psychologically safe environments and engage their team members with a shared purpose (Mirkov, 2018). The research targeted registered pharmacists working in the pharmaceutical companies indicates that human capital investment and development, for example, training, education, knowledge management and skills development, is essential for enhancing organizational performance in term of both financial and non-financial outcomes (Odhon'g & Omolo, 2015).

According to the integrative review focuses on leadership related to healthcare, leadership shows significantly important for development and management in health-related organization, as to enhance organizational performance and to ensure quality of care and patient safety are internationally and also mutually concerned (Akerjordet et al., 2018; de Zulueta, 2016; Sims et al., 2015). The integrated review for leadership definition in

healthcare aspect has supported this current study. Some researchers have suggested that leadership definitions could be adapted based on circumstances. As leadership varies even in the similar context, for example healthcare industry that have explained, thus it is obligatory to draft the empirical framework for leadership definitions to make narrow the understanding and to develop the field via grouping leadership concepts with the attempts to examine leadership systematically.

2.2 Sustainability in healthcare

2.2.1 Sustainable healthcare in the global scope

In regard with the healthcare concern, according to the United Nations declaration in 2015, sustainable development goal (SDG) is the goal to sustainable development agreed by the 193 Member States of the UN on execution of the new agenda, Transforming Our World: 2030 Agenda for Sustainable Development with 17 Sustainable Development Goals and 169 targets. These adoptions will determine the global course of action to address poverty, promote prosperity and well-being for all people, protect the environment and solve the climate change. Healthcare is the substantially important component which supports various SD. Moreover, the United Nations also adopts the SDG specifically for sustainable healthcare which is the goal 3 entitled for ensuring the healthy lives and supporting the well-being of people regardless of their age. The United Nations also states that it is significant to have sustainable development in health systems, funding, medical research and the area of pharmaceutical industry. To achieve the goal, it requires the ongoing works for the increase of life expectancy and remedies to some of the causes to death of people especially the children and mothers. Therefore, the United Nations calls for the collaboration not just from the industry but also the state to commit the improvement on water quality and sanitation together with the resolution to the widespread of some common diseases e.g. malaria, tuberculosis and polio including severe diseases like HIV/AIDS. These actions reflect to significance of sustainable development in the area of pharmaceutical industry which embedded globally (United Nations, 2017).

Furthermore the World Health Organization or WHO also emphasizes on the sustainable development goals from the United Nations. They call for holistic collaboration from healthcare network and systems which could strengthen the implementation. WHO reported data which has been organized for monitoring the progression towards the SDGs. It includes health status indicators to monitor improvement towards for the overall health goal, indicators for tracking equity in health indicators and indicators for the specific health and health-related targets of the SDGs (World Health Organization, 2017). These implementations account for importance of sustainability specifically in healthcare context emphasized by global organization and concerned for every country throughout the world either developed countries or developing countries.

According to Stenberg (2017), the conceptual framework for transforming health systems towards SDG 3 (healthy lives and wellbeing) shows that the building of sustainable and resilient health systems would promote ensuring equitable access though a people-centered service delivery approach. Furthermore, the health workforce strengthening is very crucial because it could result in direct and indirect contributions to economic growth, as noted by the High Level Commission on Health Employment and Economic Growth (Stenberg et al., 2017; Gostin et al., 2016).

Ultimately, this thesis should greatly contribute to the existing literature by helping prioritize the workforce and leadership management which significantly affect to global concern and emphasis on healthcare sustainability through the supported empirical evidence from developing country.

2.2.2 Sustainable healthcare in Asia and Thai scope

Regarding to the United Nations and the World Health Organization declaration mentioned in 2.2.1., the core of sustainable development implementation has been embedded for every level and throughout the world. There are many targets focusing on the developing countries. Many researchers analyzed data specifically for those countries or other similar subgroups, for example, low-income and middle-income countries (Stenberg et al., 2017; World Health Organization, Global Health Observatory (GHO), 2017). According to 35th Session of WHO South-East Asia Advisory Committee on Health Research (SEA-ACHR) in October 2017, which aimed at boosting health research capacity at national level and linking it to SDGs and Regional Flagships, the regional

advisory shows substantially important role for promote the sustainable development. The SEA-ACHR had been constituted in the light of fundamental change occurred on health and socioeconomic conditions, as well as capacities for health research. There was a decline in investments in biomedical research in western countries that were members of the Organization for Economic Co-operation and Development (OECD), while there was an increase in those components in the region and more broadly in Asia. The illustration is for many countries in the region had become key manufacturers of generic medicines. A revitalized SEA-ACHR implementation is expected to provide effective support to the WHO Regional Office for South-East Asia in finding solutions to old challenges and taking advantage of new opportunities (35th Session of WHO South-East Asia Advisory Committee on Health Research (SEA-ACHR), 2017; United Nations, 2017).

Some scholars researched regarding personal knowledge management, leadership styles, and organizational performance which would pin on the sustainability of organization specifically in Thailand (Zumitzavan & Michie, 2015). The organizational performance refers to the level of productivity that the company can accomplish towards its improvement goals, management of organizational resources and improving internal processes. Scholars claim that the organization's resources are the source of sustainable competitive advantages which would support the improving on organizational performance. Moreover, refer to Kantabutra, (2011), the Rhineland leadership practices could not only lead to greater corporate sustainability, in highly developed economies from previous researches, but also could be adapted to business practices of a social enterprise that delivers healthcare services in Asian context. Healthcare organizations in Thailand and possibly in other Asian countries which expect to sustain their organizational success could adopt Avery's 19 Sustainable Leadership Grid elements to examine their leadership practices, and adjust them to become more sustainable (Kantabutra, 2011).

Regarding literature reviews, although there are fewer researches for sustainability in healthcare in Asian context than the Western region, overview aims support to the global perspectives on this topic and emphasize on the importance of long term development and sustainability in healthcare organization.

2.3 Healthcare significance and challenges in Asia region and Thailand context

The healthcare industry is one of the world's fastest-growing and largest industries, which consumes over 10 percent of gross domestic product (GDP) of most developed countries (Henry, 2016). In any country, healthcare industry plays an important part of economics. The healthcare industry determines the GDP or the gross domestic product of the country and also projected for growth in almost countries.

Similar to Thailand, government spending emphasizes on the healthcare industry, which accounts for 4.1% of Thailand's GDP in 2014 and considered to be the highest amount among ASEAN countries. The healthcare industry in Thailand has been flourishing over the past decades as, in 2005, its overall value increased by 14% and continued dramatically growing in 2006 with the advocate of the Ministry of Health's, launching four-year investment plan to improve the health care standards. As well, the medical tourism industry has become the source of revenue of the country with about over a million healthcare tourists across the world since 2012. Thailand thus can be said to be the healthcare destination of Asia as the revenue rose with 194% from 2007-2013, which was reaching 4.7 billion from 1.5 billion USD (Thailand Board of Investment, 2016).

Most importantly, Thailand is considered to be the second largest healthcare market from Indonesia in Southeast Asia, paying approximately 20% of the total expenditure of this region. From 2010-2020, the market is believed to present a CAGR of 8.7% together with the drastic growth to about 28.5 billion from 12.4 USD. The forces to this growth refer to the more government funding, involvement of private sector, an ageing society, consistent medical tourism as well as the greater level of incomes. Furthermore, Thailand prioritizes healthcare industry as top precedence, which is supported by government's expenditure on healthcare is up to 14% of its total budget (Worldbank, 2017). Regarding to importance of healthcare industry, this thesis will focus on leadership and management paradigms of healthcare organization and crucial effects on performance outcomes and organization sustainability.

There is a lot of literature highlights the significance of Thailand. The International Monetary Fund summarized that Thailand, an emerging South-East Asian economy, has the second largest GDP growth in the region with an approximate value

of US\$320 billion, and ranks as the 16th largest economy contributing to global nominal GDP growth (2007-2012) (International Monetary Fund, 2012). Thailand has integrated within the regional economic integration of the Association of Southeast Asian Nations (ASEAN) Economic Cooperation (AEC), and is ranked the 10th largest economy in the world (International Monetary Fund, 2012). The regional integration can consequently make Thailand be a main economy in the region and an important emerging player in the world market. According to John (2017), Thailand has been ranked as the third major economy among the ASEAN community and classified as 'Efficiency Driven Economy'. However, Thailand also experiences both strength and weakness factors influencing national management, development and economics which would be improved by any economic and human development policies (John, Duangekanog, Wichayachakorn, & Vikitset, 2017).

Besides overall significance of Thailand, the particular strength of Thailand has been mentioned by researchers that Thailand has strategic advantage in Macroeconomic environment factors, Health and Primary Education measures, and in Market Size (John, Duangekanog, Wichayachakorn, & Vikitset, 2017). Similar to country direction, government spending emphasizes on the healthcare industry, which accounts for 4.1% of Thailand's GDP in 2014 and considered to be the highest amount among ASEAN countries. Furthermore, Thailand prioritizes healthcare industry as top precedence, which is supported by government's expenditure on healthcare is up to 14% of its total budget (Worldbank, 2017). Regarding to importance of healthcare industry, this thesis will focus on leadership and management paradigms of healthcare organization and crucial effects on performance outcomes and corporate sustainability.

In addition to Thailand economic significance, scholars (e.g. Kantabutra, 2011, 2012a, b, 2014; Kantabutra & Suriyankietkaew, 2013, 2016) discuss a shift for organizational leadership with a long-term orientation and care for all stakeholders in creating sustainable businesses in Thailand. Various studies (Kantabutra, 2010c, 2012c, 2014; Khunthongjan, 2009; Puntasen, 2003; Himathongkam, 2016) also mentioned that some Thai organizations have already adopted a similar approach, termed the 'Sufficiency Economy philosophy' which was first promulgated by His Majesty King Bhumibol Adulyadej of Thailand in 1997. The application of Sufficiency Economy philosophy in healthcare organization has been investigated and adapted to solve various gaps and

problems in healthcare system. The substantial effect and contribution for the country has also been illustrated. Thus, the extension of this concept should be conducted in order to emerge and leverage genuine effect for the country (Himathongkam, 2016). Regarding all significant aspects of Thailand, thus, this thesis aims to contribute an empirical investigation enhancing understanding and knowledge for leadership and management practices that will drive other advantageous in Asian and Thai context.

2.4 Leadership and sustainable healthcare

The sustainable leadership (SL) framework for this thesis is portrayed in Figure 1.1, which depicts a pyramid containing SL (Honeybee) practices. It is noted by researchers that organization where adopts this framework is more likely to be sustainable enterprises and perform better than their non-SL peers (Avery & Bergsteiner, 2010, 2011a, b, 2012; Kantabutra, 2011, 2012a, b; Kantabutra & Avery, 2013; Kantabutra & Suriyankietkaew, 2013, 2016; Himathongkam, 2016; Avery, 2016) which effecting to organizational sustainability.

All 23 practices in various combinations collaboratively drive five performance outcomes, which are brand and reputation, customer satisfaction, financial performance, long-term shareholder value and long-term stakeholder value. Although, there are many researches discussed on sustainable leadership (SL) practices, each industry distinguish purposes and goals in running their business; therefore, the determined goals of each organization may be different and the levels of organizational performance might be varied (Fan et al., 2014; Zumitzavan & Michie, 2015). There are few studies focusing on SL practices specifically for healthcare industry, which are summarized in the table 2.1.

Regarding continuous people development practice, the research and approach of Lean healthcare has been developed into a major strand of research since the early 2000s (Thompson, Wolf, & Spear, 2003; Young et al. 2004; Spear, 2005). The Lean approach aims to improve the whole organization performance, for both financial and non-financial measures. The crucial factor for achieving that approach is employee development. The implementation focuses on continuous improvement for all employees because every level plays important roles for driving organization performance. For

example, the employees were stimulated to develop and work using a team-based approach (Niemeijer, 2012; D'Andreamatteo, Ianni, Lega, & Sargiacomo, 2015). Moreover, the researches have searched for the long term outcome or sustainability of organization. Other scholars Akerjordet, Furunes, and Haver, (2018) studied about nursing leadership and evidence-based human resource management. They found that the development for nurses is needed in order to improve nursing environments, which would result in quality and satisfaction of care. Those leadership improvements could lead to organizational performance and its long term human resource management improvement (Akerjordet et al., 2018; Mortier, Vlerick, & Clays, 2016). Regarding previous researches, people development plays and important factors for organizational performance, especially the knowledge development and leadership management.

Amicable Labor Relations, the cooperation and collaboration of healthcare associates plays significant role as driver for achievement and performance, including both personal and organizational performance. Researchers, de Zulueta, et al. (2016) claims that Compassionate leadership is crucial for compassionate health care system, where patients and healthcare professions would feel listened to, supported, and cared for. Not only for employees, but also for whole environment, needs to foster a culture of learning and openness, which would result in shared knowledge, relation and improvement (de Zulueta et al., 2016). Furthermore, West, Lyubovnikova, Eckert and Denis (2014) have supported for collective or shared and distributive leadership. Leaders and followers are mutually dependent and dynamically intertwined which would leverage amicable environment (West, Lyubovnikova, Eckert, & Denis, 2014; de Zulueta et al., 2016). The relation among labor, which account for every level, would substantially improve the employee retention and impact to organization performance and sustainability.

Long-term Staff Retention, various scholars have mentioned in the cause of their studies that the healthcare organization often experiences with the shortage of healthcare professionals which is leading cause of problem through organization development and performance (Buchan, Twigg, Dussault, Duffield, & Stone, 2015; Cummings et al., 2010; Akerjordet et al., 2018; Himathongkam & Vannapruegs, 2016). Furthermore, Akerjordet, Furunes, and Haver (2018) claims that healthcare system should concern on high turnover and aging population in nursing workforce because this factor can be predictive of nurse job outcomes and job satisfaction. The holistic

management could lead to organization reputation and other performances (Akerjordet et al., 2018; Buchan, Twigg, Dussault, Duffield, & Stone, 2015; Cummings et al., 2010).

Internal Succession Planning, regarding to researches from many scholars, they stated for important of employee promoting and developing of current healthcare staff or professional in many field, for example, the knowledge, leadership and management (Akerjordet et al., 2018; Zumitzavan & Michie, 2015). The practice for internal succession planning also aligns with the people development, which could lead to organizational performance and its long term human resource management improvement (Akerjordet et al., 2018; Mortier, Vlerick, & Clays, 2016). In addition, the result of Thai approach, which is Sufficiency Thinking Model, application in the hospital is most employees have worked with the hospital for a long time and led to employee satisfaction and happiness (Himathongkam & Vannapruegs, 2016).

Valuing staff, the organization welfare or commitment is crucial and shows various affects on organization performance, for example, employee satisfaction, human resource development. Scholars, Sumathi, Kamalanabhan, & Thenmozhi, (2015) have researched employee–organization relationship through perceived organizational support in the healthcare associates. They found that there was positive impact of human resource practices, such as pay and rewards, and job autonomy or social support, such as supervisor support and coworker support on perceived organizational support. (Sumathi et al., 2015). Futhermore, previous researches claimed that the support from either supervisor or colleagues showed substantial influence on perceived organizational support as well (Hayton, Carnabuci, & Eisenberger, 2012). In addition, some scholars have stated that employees in the university have needs to receive training, learning and scientific progress, suitable benefits, security and suitable work conditions. These factors could lead to job satisfaction of employees and organization performance through both direct and indirect impacts (Maleknia et al., 2011; Fard & Karimi, 2015).

CEO and Top-Team Leadership, according to literature review; many scholars researched the top-team leadership. Mussalo and team (2018) have emphasized on leadership framework and its impact to performance and conformity due to social welfare and healthcare reform in Finland leading to organizational, financing and steering changes and challenges for the leadership. They have proposed the conceptual leadership framework, which could be used to highlight the meaning of the common controls and

the criteria for performance and conformity (Mussalo et al., 2018). Other researchers also supported that the organization should decide how to adapt the authority documents and roles for authorization, which will effect to the governance, management and processes of organization (Boussalis, Feldman, & Smith, 2018). Furthermore, various articles studied on characteristic and development of clinical leadership. Joseph and Huber, (2015) stated that clinical leadership, specifically for nurses, should have a common framework for leadership development and education because they have to be clinical nurse leader and care coordinator in the team-based care activities (Joseph & Huber, 2015). Moreover, Smolowitz and team (2015) have studied on the primary health care practices for nurses. They have claimed that there should be cooperation, optimization and development for clinical leadership practicing in the team-based care and interprofessional teams (Smolowitz et al., 2015).

Ethics is one of the explicit core value of healthcare, thus, there are many scholars have emphasized on this issue. Decety and Fotopoulou declared that there are evidences support for importance of empathy and compassion of healthcare person on patients' health outcomes (including mortality), enablement, and satisfaction as well as a reduction of malpractice complaints (Decety & Fotopoulou, 2015). In addition, other scholars also claim that the heart of medical ethics is compassion because it is essential for the relief of suffering, the prime goal of medicine and leading to a virtuous spiral (de Zulueta, 2015). Elsewhere, de Zulueta have researched in-depth for moral healthcare and claimed that compassionate health care is universally valued as a social and moral practice, which should be upheld and sustained. Enabling the development and preservation of compassionate health care organizations should consider leadership as a pivot (de Zulueta, 2016). Moreover, in Thai context, there is well-known non-profit organization representing members who are research based pharmaceutical companies innovating medicines to combat the previously incurable and to improve on existing treatments. The association name is Pharmaceutical Research and Manufacturers Association (PReMA) which all members will respect the rule and regulation declared by PReMA. In addition, manufacturers of medicine in Thailand have to register with Thai Food and Drug Administration (FDA) as manufacturers for modern drugs (medicine) who are certified by good manufacture practice (GMP). Therefore, GMP is one of the

regulation that manufacturers have to respect the most (PreMa official website on 9 July 2018; FDA official website on 9 July 2018).

Long-Term Perspective, in the light of healthcare system, healthcare professional sometimes take the role of executive. Those healthcare professionals might be designated as "professional-managerial hybrids" or clinical leaders. Therefore, many scholars state the crucial correlation of clinical leadership and perspective of organization in the long term (McGivern, Currie, Ferlie, Fitzgerald, Waring, 2015; Schott et al., 2016). Additionally, gurus have criticized that clinical leader have influence on shaping and developing healthcare system. Hence the role goes beyond individual doctor excellence and drives the further performance and long term development of the future of healthcare system (Spurgeon, Long, Clark, & Daly, 2015). Elsewhere, Denis & van Gestel (2016) examined the government and organizational policies supporting clinical leaderships and their long term perspective for developing healthcare system. Scholars emphasized on this role importance in future healthcare improvement and suggest that the clinical leader should do active individual task and go beyond clinical duties and responsibilities in delivering care to patients. These policies could drive the organization performance and future improvement of healthcare system (Denis & van Gestel, 2016).

Considered Organizational Change has shown substantial impact on process development and other outcomes of organization. Scholars who studied on the change for clinical leadership development, specifically for nurses, have considered gradual improvement and detailed organizational processes as they are leading factors for achieving outcomes such as quality and safety of care which would result in performance enhancement and sustainability. (Joseph & Huber, 2015; Huber, 2014). Additionally, there are scholars who studied on role of clinical leader, method and manner for effective change in diabetes care of Thailand in order to enhance awareness of multidisciplinary care and team. They have stated that gradual changes and the team-based approach engaged within all stakeholders can help to achieve the effective change. The transforming leads to multidisciplinary approach of multidisciplinary team and results in improvement of changing the patients' mindsets, patient care outcomes, and performance of the organization including financial and non-financial outcomes (Avery, 2016).

Financial Market Independence, scholar, Kantabutra (2011), have researched on Sustainable leadership in a Thai healthcare services provider and stated regarding

financial market independence of Theptarin Hospital. Although the hospital has experienced loss and difficulties during the entire business development, the hospital meets the criteria for sustainable enterprise including a firm's ability to difficult situations and maintaining a market leader position (Avery, 2005). This finding supports that the sustainable practices and financial performance are linked because sustainable practices reflect good management, quite lower costs, and increase reputation (Kantabutra, 2011).

Environmental Responsibility, the environment is concerned by various researches on sustainability in healthcare. A lot of studies have been focused on environmental sustainability and the impact of healthcare activity and operation on the environment and organizational stability which could lead to a decrease in cost and enhancement affordability for both the providers and the consumers (Chandra, Rinkoo, Verma, Kapoor, & Sharma, 2013; Price, Sergelen, & Unursaikhan, 2013; Sagha, Xuan and Shepley, 2016). Moreover, researchers who studied on sustainability based approached in healthcare have claimed that the sustainability practices in hospitals' operation could be divided into four categories, including environment, customer, employee and community. All dimensions are necessary for achieving sustainability goals and lead to continuously improvement quality and financial performance (Marimuthu & Paulose, 2016).

Social Responsibility (Corporate Social Responsibility or CSR), although previous researches have been investigated on sustainability of healthcare in the aspect of environment, there are many scholars having stated the importance of valuing people and the community for genuine sustainability in healthcare. (D'Andreamatteo et al., 2015; Crema & Verbano, 2015). Furthermore, researchers have studied the emergence of sustainability in healthcare and found that it was involved by balancing of four key factors in its operating process, which are environment concerns, the needs of patients, the needs of employees and community concern. These factors could contribute the quality improvement and cost reduction for organization in the long term. Moreover, the study suggests that two other processes should be added, including quality working environment and preserving environment for community; centered on the benefits for employees and communities respectively. Elsewhere, scholars suggest that the scope of sustainability in healthcare should be expanded beyond environmental sustainability into human based sustainability. The expansion would lead to enhancement of organizational excellence and high quality of service. (Marimuthu & Paulose, 2016).

Stakeholder Approach, according to study of Avery (2016), the transforming of governance, policies, awareness or mindset need to consider every process and involve all stakeholders. The implementation process should involve every sectors and stakeholders. The result was shown in term of enhancement of organization performance and reputation (Avery, 2016). Additionally, Smolowitz and team (2015) have studied on the primary health care practices for nurses. They have stated the importance of collaboration among stakeholders and claimed that there should be cooperation, optimization and development for clinical leadership practicing in the team-based care and interprofessional teams (Smolowitz et al., 2015).

Strong and Shared Vision, the strong and shared vision within organization associates could enhance both internal and external stakeholders' satisfaction. It has advantage and positive impact for team-based approach, which is the key practice for sustainability in healthcare system (Joseph & Huber, 2015; Avery, 2016). In addition, researchers have claimed that interprofessional healthcare team was defined as team that has an explicit and shared understanding of their objectives, values and vision that is mutually developed and/or agreed by team members. The shared purpose leads to a consistent approach to care and treatment goals, which could result in an increase in team member morale, motivation and commitment to quality work. Regarding the literature review of the study, some studies illustrate the positive association between shared objectives and team effectiveness, which is defined as measures of patient-centered care and organizational efficiency. (Sims et al., 2015).

Devolved and Consensual Decision-Making, the healthcare system practice is based on interprofessional healthcare team approach. Various researches illustrate the importance of all associates on leadership, management and long term prospective which could lead to devolved and consensual decision-making. Researchers who studied about the relationship between organizational trust and organizational silence with job satisfaction and organizational commitment in the university stated that the organizational silence is defined as the lack of information and trust which was named newly by Morrison and Milliken (2000). The study shows that the organizational silence has association with limitation of effectiveness of organizational decision making and change processes. The very low opinion of employees could lead to problems and reduction in decision making quality and change endurance of organization. Moreover, lacks of negative

feedbacks result in errors and eliminating of effective consensual decision-making. Therefore, the organizational silence should be emphasized significantly as organizational issues and required serious consideration from management (Fard & Karimi, 2015).

Self-Management, regarding clinical work and process in healthcare organization, there always are changes and challenges. The successful medical leaders have to be experienced and credible clinicians with compassionate skills. Therefore, self-autonomy is crucial for passing through reasonable risks to achieve their goals. The healthcare professional autonomy supports as factor to enhance organizational performance. It is important that healthcare associates should know how to perform comprehensive cases, engage their colleagues and effect change. In addition, the exercise of clinical autonomy is a crucial part of the application of knowledge acquired by doctors through their medical training (Spurgeon, Clark, & Ham, 2017). Furthermore, job autonomy is identified as an example of human resource practices which shows positive impact on perceived organizational support. (Sumathi et al., 2015).

Team Orientation, the healthcare system consists of multidisciplinary healthcare team, thus, team-based approach is widely recognized for promoting sustainability and organization performance. Gurus researching on the health-promoting leadership related to pharmacists have stated that it could capture the leadership dynamics of organizations more holistically. The pharmacy profession and clinical leader could help to contribute multidisciplinary healthcare and intersectional team capability and effectiveness which would be one of the leading factors for achieving organization performance (Sims et al., 2015; Mirkov, 2018). Because there might be influenced interpersonal relationships, collaboration and trust among team members by the dominant developmental level like physicians, the leader in the pharmacy profession is substantially essential. The performance outcome, for example, patient outcome and employee well-being improvement, is also affected from pharmacy leader capability to create psychologically safe environments and engage their team members with a shared purpose (Mirkov, 2018).

The organization culture is largely influenced by leaders and managers, however, behaviors, values and norms spread from the central dimension in the organization outwards and whole culture reflects the organization. Managerial behaviors in pharmacy practice could influence on a culture of trust and improve performance include sharing information about the company's goals, strategies and tactics. Moreover, the organization

culture could inspire associates to aim for excellence and affect the organization performance (Mirkov, 2018). Furthermore, in the medical professional context, individual expertise is crucial but only individual expertise is not sufficient to produce optimal patient care. Therefore, coordination across clinical groups to prevent and correct errors can help to ensure the continuity of care (Edmondson, 2015).

Knowledge Retention and Sharing, the study focused on registered pharmacists working in the pharmaceutical companies illustrates that human capital investment and development, for example, training, education, knowledge management and skills development, is essential for enhancing organizational performance in term of both financial and non-financial outcomes (Odhon'g & Omolo, 2015). Some researchers studied the relationship and association among personal knowledge management, leadership styles, and organization performance, specifically in Thailand. They have claimed that the personal knowledge management could help individuals learn and understand how to learn effectively which lead to utilization of the knowledge and skill for enhancing leadership and management in the organization under any circumstances. (Zumitzavan & Michie, 2015). Noruzy and team developed a confirmatory factor analysis to validate knowledge management by using the scales developed by Gold et al. This scale consists of four interrelated processes: knowledge acquisition, knowledge transfer, knowledge integration and knowledge conversion. The scale showed high validity and reliability. Structural equation modeling was conducted to assess the fit of the hypothesized model and the knowledge management was found to positively correlate to performance (Noruzy, 2013).

Trust, according to literature review, high trust can be made through relationship and goodwill among associates and organization. Researchers have claimed that the alignment between soft (trust, collaboration) and hard (financial incentives) levers is crucial for promoting healthcare system context. The soft levers like trust could be enhanced through clarity and stability of broad policy orientations and openness to local experimentation. Achieving alignment between soft (trust, collaboration) and hard (financial incentives) levers could engage the medical profession and also help to develop performance and leadership (Hunter, 2015). Furthermore, scholars studied in healthcare leadership and found that there are three dimensions conducting the analysis of engaging medical doctors in healthcare leadership, which are the position and status of

medical doctors within the system, the broader institutional context of governmental and organizational policies to engage medical doctors in clinical leadership roles, and the main factors that may facilitate or limit achievements. Among these dimensions, trust is embedded as results of collaboration, governmental and organizational policies and achievement which have impact on the engagement of healthcare professionals (Denis & van Gestel, 2016).

Strategic, Systemic Innovation, as mentioned before, the multidisciplinary healthcare teams are emphasized and all levels should be developed management and leadership skills. Scholars have researched on teamwork for innovation in pharmacy practice and stated that an innovation could be enhanced by various methods and tactics and it plays significant role for performance improving in the organization. The cognitive diversity and divergent thinking is one example as a source of innovation. The team with highly consensual decision making would often enable creativity and innovation. Moreover, innovation in pharmacy practice could delivery effective services and improvements in patient care which could drive the performance outcomes for organization (Mirkov, 2018). Elsewhere, researchers state that leadership lessons from honeybees could lead to effective collaborative problem solving and innovation which will promote the organization performance and sustainability (Johnson Vickberg, & Christfort, 2017). In addiotion, there are researchers studied structural equation modeling to assess the fit of the hypothesized model and found that organizational innovation positively correlated to performance (Noruzy, 2013).

Staff Engagement, there are various researches on motivation and engagement for healthcare associates. The intrinsic motivation tends to drive the sustainability in healthcare. The research regarding employee–organization relationship through perceived organizational support in the healthcare employees shows that both human resource practices, such as pay and rewards, and job autonomy or social support, such as supervisor support and coworker support influence perceived organizational support. (Sumathi et al., 2015). Furthermore, the engagement among staffs or team can be done by shared purpose and vision which could lead to a consistent approach to care and treatment goals. Moreover, it can raise the team member morale, motivation and commitment to quality work. Researchers also found that various studies support the positive association

between shared objectives and team effectiveness, which is defined as measures of patient-centered care and organizational efficiency. (Sims et al., 2015).

Quality, the healthcare organization emphasizes quality as one of pivotal culture and core values. The evidence from study of Spurgeon, Clark and Ham (2017) provides confirmatory support for the medical leadership policy on improvements in quality, safety and productivity. Quality care could enhance trusts with high levels of engagement, which is very crucial for medical professionals. The societal context for medical practice involves accountability for performance, the need to deliver patient-centered care and collective work with other clinicians and staff to improve quality (Spurgeon et al., 2017). Regarding clinical leadership for nurses, researches show that the quality and safety of care is defined as key outcomes that needed to be achieved by clinical leaderships, who influence point-of-care innovation and improvement in both individual care practices and organizational processes (Joseph & Huber, 2015). Moreover, there are various researches show that quality management has a significant and positive effect on organizational performance (Valmohammadi and Roshanzamir, 2015; Mehralian, Nazari, Zarei, and Rasekh, 2016).

Table 2.1 Summary of Empirical Support for SL (Honeybee) Practices

	SL Practices	Research Support	Finding and Implications
1	Continuous People Development	Thompson, Wolf, & Spear, 2003; Young, 2004; Spear, 2005; Niemeijer, 2012; D'Andreamatteo et al., 2015; Akerjordet et al., 2018; Mortier, Vlerick, & Clays, 2016	Continuous people development practice was mentioned in various studies for healthcare. The development for healthcare people was needed in order to improve quality and satisfaction of care. Those leadership improvements could lead to organizational performance and its long-term human resource management improvement.
2	Amicable Labor Relations	de Zulueta, 2016; West, Lyubovnikova, Eckert, & Denis, 2014	Amicable labor relations would substantially improve the employee retention, employee satisfaction and impact to organization performance and sustainability.

Table 2.1 Summary of Empirical Support for SL (Honeybee) Practices (cont.)

	SL Practices	Research Support	Finding and Implications
3	Long-term Staff Retention	Buchan, Twigg, Dussault, Duffield, & Stone, 2015; Cummings, 2010; Akerjordet et al., 2018; Himathongkam & Vannapruegs, 2016	Long-term staff retention could be predictive of job outcomes and job satisfaction. Retaining well-trained and loyal staff could lead to organization reputation and other performances.
4	Internal Succession Planning	Akerjordet et al., 2018; Zumitzavan & Michie, 2015; Mortier et al, 2016; Himathongkam & Vannapruegs, 2016	The practice for internal succession planning also aligned with the people development, which could lead to organizational performance and long term human resource management improvement.
5	Valuing Staff	Sumathi et al., 2015; Hayton, Carnabuci, & Eisenberger, 2012; Maleknia, 2011; Fard & Karimi, 2015	Valuing staff showed various effect to organization performance, for example, employee satisfaction, human resource development and productivity. There was positive impact of human resource practices and job autonomy or social support.
6	CEO and Top-Team Leadership	Mussalo, 2018; Boussalis, Feldman, & Smith, 2018; Joseph & Huber, 2015; Smolowitz, Speakman, & Wojnar, 2015	Characteristic and development of clinical leadership affected to the governance, management, care coordinator in the team and processes of organization. There should be cooperation in the team-based care and interprofessional teams.
7	Ethics	Decety & Fotopoulou, 2015; de Zulueta, 2015; de Zulueta, 2016; "PreMa," 2018; "FDA Thailand," 2018	Ethics and compassion of healthcare person was linked to patients' health outcomes and organization performance. Compassionate health care was universally valued as a social and moral practice, which should be upheld and sustained. Moreover, in Thai context, there was well-known non-profit organization representing members who are research based pharmaceutical companies innovating medicines to combat the previously incurable and to improve on existing treatments. The association name is Pharmaceutical Research and Manufacturers Association (PReMA) which all members

Table 2.1 Summary of Empirical Support for SL (Honeybee) Practices (cont.)

	SL Practices	Research Support	Finding and Implications
			will respect the rule and regulation declared by PReMA. In addition, manufacturers of medicine in Thailand have to register with Thai Food and Drug Administration (FDA) as manufacturers for modern drugs (medicine) who are certified by good manufacture practice (GMP). Therefore, GMP is one of the regulation that manufacturers have to respect the most.
8	Long-Term Perspective	McGivern et al., 2015; Schott et al., 2016; Spurgeon et al., 2015; Denis & van Gestel, 2016	There was correlation of clinical leadership and perspective of organization in the long term. Clinical leaderships and their long-term perspective could drive the organization performance and future improvement of healthcare system.
9	Considered Organizational Change	Joseph & Huber, 2015; Huber, 2014; Avery, 2016	Change had shown substantial impact on process development and other outcomes such as quality and safety of care which would result in performance enhancement and sustainability.
10	Financial Market Independence	Avery, 2005; Kantabutra, 2011; Himathongkam & Vannapruegs, 2016	A firm's ability to difficult situations and maintaining a market leader position associated with organization sustainability and financial performance. Sustainable practices reflected good management, quite lower costs, and increase reputation.
11	Environmental Responsibility	Chandra, Rinkoo, Verma, Kapoor, & Sharma, 2013; Price, Sergelen & Unursaikhan, 2013; Sagha, Xuan, & Shepley, 2016; Marimuthu & Paulose, 2016	The sustainability practices in hospitals' operation could be divided into four categories, including environment, customer, employee and community. All dimensions were necessary for achieving sustainability goals.
12	Social Responsibility (Corporate Social Responsibility or CSR)	D'Andreamatteo et al., 2015; Crema & Verbano, 2015; Marimuthu & Paulose, 2016	The quality of working environment and preserving environment for community enhanced organizational excellence and high quality of service, which linked to organization performance and sustainability in healthcare.

Table 2.1 Summary of Empirical Support for SL (Honeybee) Practices (cont.)

	SL Practices	Research Support	Finding and Implications
13	Stakeholder Consideration	Avery, 2016; Smolowitz et al., 2015	Considering multiple stakeholders, development for clinical leadership practicing in the team-based care and interprofessional teams could enhance organizational performance and firm's reputation and profitability.
14	Strong and Shared Vision	Joseph & Huber, 2015; Avery, 2016; Sims et al., 2015	The strong and shared vision within organization associates could enhance both internal and external stakeholders' satisfaction. It had advantages and positive impact for team-based approach, which was the key practice for sustainability in healthcare system.
15	Devolved Decision-Making	Fard & Karimi, 2015; Morrison & Milliken, 2000	Devolved and consensual decision-making associated with organization performance and productivity. The study showed that the organizational silence had association with effectiveness of organizational decision making and change processes.
16	Self-Management	Spurgeon et al., 2017; Sumathi et al., 2015	Self-autonomy was crucial for passing through reasonable risks to achieve their goals. The healthcare professional autonomy supported as factor to enhance organizational performance. Furthermore, job autonomy was identified as an example of human resource practices which showed positive impact on perceived organizational support.
17	Team Orientation	Sims et al., 2015; Mirkov, 2018	Since the healthcare system consisted of multidisciplinary healthcare team, team-based approach was widely recognized for promoting sustainability and organization performance.
18	Enabling Culture	Mirkov, 2018; Edmondson, 2015	The organization culture was largely influenced by leaders and managers. However, behaviors, values, norms spread from the central dimension in the

Table 2.1 Summary of Empirical Support for SL (Honeybee) Practices (cont.)

	SL Practices	Research Support	Finding and Implications
			organization outwards, and whole culture reflected the organization. Moreover, the organization culture could inspire associates to aim for excellence and affect the organization performance.
19	Knowledge Sharing and Retention	Odhon'g & Omolo, 2015; Zumitzavan & Michie, 2015; Noruzy, 2013; Gold, Malhotra, & Segars, 2001	Human capital investment and development, for example, training, education, knowledge management and skills development, was essential for enhancing organizational performance in term of both financial and non-financial outcomes. Noruzy and team developed a confirmatory factor analysis to validate knowledge management by using the scales developed by Gold et al. This scale consisted of four interrelated processes: knowledge acquisition, knowledge transfer, knowledge integration and knowledge conversion. The scale showed high validity and reliability. Structural equation modeling was conducted to assess the fit of the hypothesized model and the result showed that knowledge management positively correlated to performance.
20	Trust	Hunter, 2015; Denis & van Gestel, 2016	Trust could engage the medical profession and also helped to develop performance and leadership. Trust was embedded as results of collaboration, governmental and organizational policies and achievement, which had impact on the engagement of healthcare professionals.
21	Strategic, Systemic Innovation	Mirkov, 2018; Johnson Vickberg, & Christfort, 2017; Noruzy, 2013	An innovation could be enhanced by various methods and it played significant role for improving performance in the organization. Moreover, innovation could delivery effective services and improvements in patient care which could drive the performance outcomes for organization. Previous researchers studied

Table 2.1 Summary of Empirical Support for SL (Honeybee) Practices (cont.)

	SL Practices	Research Support	Finding and Implications
			structural equation modeling to assess the fit of the hypothesized model and found that organizational innovation positively correlated to performance.
22	Staff Engagement	Sumathi et al., 2015; Sims et al., 2015	The intrinsic motivation tended to drive the sustainability in healthcare. Moreover, it raised the team member morale, motivation and commitment to quality work.
23	Quality	Spurgeon et al., 2017; Joseph & Huber, 2015; Valmohammadi & Roshanzamir, 2015; Mehralian, Nazari, Zarei, & Rasekh, 2016	Quality care could enhance trust with high levels of engagement, which was very crucial for medical professionals. It influenced point-of-care innovation and improvement in both individual care practices and organizational performance. Moreover, various researches showed that quality management had a significant and positive effect on organizational performance.

Regarding the gaps and problems mentioned in Research Background and Problem Statements section, this module discusses SL theoretical concept based on Thai healthcare organization context which addresses those literature gaps by providing empirical evidence that is worth and applicable to the Eastern world and Asian context, particularly in healthcare industry which is one of the most important key drivers for both financial and non-financial constituents in any country.

Mostly SL research and publication have been done in term of case studies in developed countries such as Europe and Australia (e.g. Avery 2005; Avery & Bergsteiner, 2010, 2011a, b, 2012). Few case studies (e.g. Kantabutra, 2011; 2012a, b; Kantabutra & Suriyankietkaew, 2013, 2016) have been conducted in developing countries, for example, Thailand. In order to expand current knowledge in the emerging economy of Thailand, thus, need more empirical research in this particular topic. Moreover, numerous literatures and researches raise the importance of healthcare organization and required further SL studies in this context (Luthans and Sommer, 1999; Kantabutra, 2011; Himathongkam, 2016). This is worth question which will expand knowledge and dramatically contribute

to improvement of both financial and non-financial context. In any country, healthcare industry plays an important part of economics. The healthcare industry determines the GDP or the gross domestic product of the country and also projected for growth in almost countries (Henry, 2016). Hence, this study attempts to expand the existing knowledge to empirically investigate SL in the Thai context as well as understanding which and how the SL practices improve organizational performance and sustainability in healthcare organization.

2.5 Significance and challenges of pharmaceutical organizations in sustainable healthcare

According to American College of Healthcare Executives (ACHE), healthcare organization (HCOs) includes aggregated and integrated sectors within economic system, which provides goods and services for patients with holistic approaches, for example, preventive, curative, rehabilitative or palliative care. HCOs comprise of general organizations like hospitals, medical group practices and physician offices, ambulatory centers or home care organizations. Apart from HCOs that provide directly hands-on healthcare services to patients, other types of fundamental organizations contribute indirect effect on people's health are other types of HCOs, for instance, healthcare professional society or association, medical research organization, medical supply firms and pharmaceutical companies. Moreover, there are various businesses assisting in the resources for healthcare system, e.g. financing or human resource, which are HCOs as well. The illustration is for health insurance companies, colleges and universities. Thus, the boundary for HCOs definition is unlimited and overlapped with other economic sectors (Olden, 2011). Due to significantly broad boundary of HCOs, this study assesses leadership and management paradigms of HCOs which are divided into 2 groups by their contribution on healthcare system as below,

1. HCOs providing direct effect on people's health. The example is for hospitals, clinics, ambulatory centers.

2. HCOs providing indirect effect on people's health. The example is for medical research organization, medical supply firms and pharmaceutical companies.

Moreover, the providers within the pharmaceutical industry can be divided into two groups; global and the local enterprises (Ascher, Bogdan, Dreszer, and Zhou, 2015). For the global enterprises refer to the company which internationally provides the originally pharmaceutical goods such as Pfizer and Novartis as the examples. For the local company, the pharmaceutical goods will be locally produced, and the example of this group is Silom Medical Company.

This thesis study will mainly focus on the pharmaceutical industry, for both global and local enterprises, because this industry has the high growth rate over the past few years in Thailand. And Thailand plays an important role as economic driver for Southeast Asian Nations and also has been considered as the medical destination of Asia, which could provide extensive impacts on global context. Therefore, it can be certainly predicted that this industry will reach the drastic growth in the upcoming future as currently the industry already has extended that Thailand imported more than $2.2 billion in pharmaceuticals based on 2016, which seemed great amount as it greatly increased from $1.8 billion in 2014. About 65% of the pharmaceutical goods in 2016 were imported from the European countries such as Germany (Luangpirom, 2016). The value of Thailand's pharmaceutical market thus is forecasted to multiple by 2020. At the meantime, the pharmaceutical sales per-capita are believed to attain the rapid growth from $75 in 2016 to over $125 in 2024. Thailand's GDP is also expected to increase from 8,839 billion in 2009 Thai baht in 2009 to 9,170 billion Thai Baht in 2019 if the pharmaceutical industry remains the consistent growth (Luangpirom, 2016).

The market value for pharmaceuticals has consistently grown also. The Ministry of Public Health of Thailand has submitted a regulation which states that pharmaceutical producers in Thailand must follow the Pharmaceutical Inspection Co-operation Scheme (PIC/S). Therefore it can be ensured that pharmaceutical products in Thailand will tap the international standards certainly. Moreover, Thai government launched a strategic plan to support the rise of pharmaceutical industry during 2012-2016 with the attempt to increase the potential of the pharmaceutical industry via the research and modernizing manufacturing activities. This strategy covered the measures to the improvement of the competitiveness of the pharmaceutical industry through R&D and further development of an environment that is conducive for indigenous industry growth (Thailand Board of Investment, 2016).

Regarding the significance of pharmaceutical organization in healthcare system, this study will provide empirical evidence focusing on management and leadership paradigm of pharmaceutical organization which would contribute advantages for long term prospective and outcomes challenged by various factors that will be described in the following paragraph.

There are various challenges within the pharmaceutical industry as the companies within such industry encounter with the lesser profits and sometimes even struggle with the loss because their clients with chronic conditions often turn into non-adhering to their medication (Khanna, 2017). This enforces the companies to reset their workforce structure, moving their workers to work in new position, eliminating some positions which seem not productive, or even switching working area under the responsibilities of sales representative and laying off some workers for them in order to minimize the cost. This leads to high turnover rate as a consequence. When the workers have to switch their works, responsibilities, job descriptions and areas of work particularly for the sale representative and product manager frequently, the workers will be unpleasant with their work and resign or change their job at the end. In other words, this creates negative impact to the pharmaceutical companies as their workers have lesser job satisfaction, resulting in the resignation of them afterwards. The problem could significantly lead to organization performance and also sustainability.

The following impacts often turn negative. For example, the companies might not be able to find the new workers to perform the tasks in the working areas which are lack of workers and this will directly entail in the overall sales and income of such company inevitably. Additionally, the negative impacts can include that the existing workers are enforced by situation to shoulder more responsibilities, so they will not be satisfied under this condition, representing the low quality of life given and unresolved by the company.

The causes of these problems are the economic crisis, which is national problem, as well as the state policy related to the pharmaceutical industry such as "The 30 Baht Health Care Scheme and Health Security in Thailand" and "National List of Essential Medicines". Other relevant causes to these worst events include the medicine running out of patent and getting generic copy of specific medicines for sales at the lower price and medical tourism or strategy of some hospitals such as Bumrungrad Hospital

which also affects the stock management of pharmaceutical companies. Various issues could make organization in the healthcare system be frantic. All of these problems can also lead to not only organization effect but also the negative impacts on the revenue of the country, which expects the industry to continue the growth as the potential of companies in this industry will be deducted due to the lesser investment on new pharmacies. In other words, this will result in negative impacts to the companies within pharmaceutical industry particularly in terms of innovation and quality. Innovation of new pharmacy will not be developed as the company has no capital to invest for new improved pharmacy and when it comes to quality, they could not effectively improve the quality since internal management does not provide the working environment to business success. All of these issues could lead to managerial development and also the sustainability of organization. Regarding to importance and challenges of pharmaceutical industry, this thesis will focus on leadership and management paradigms of pharmaceutical organization and crucial effects on performance outcomes and corporate sustainability.

2.6 Relationships between sustainable leadership and Sustainability Organizational Performance (SPO)

Based on this thesis, organizational sustainability refers to leadership and management process to the well-being and added value for stakeholders in long run. Many scholars, specifically in healthcare environment (McSherry & Pearce, 2016; Joseph & Huber, 2015) highlight the importance of clinical leadership on the provision of quality care improvement and outcomes, which influence team collaboration, innovation and work environment leading to organization sustainability. Various researches claim about relationship between the top management and organizational performance. The illustration is for the finding that there is an important association between the demographics and corporate strategic change, leading to improvement of organizational performance (Zumitzavan & Michie, 2015; Wiersema Bantel, 1992). In addition to previous researches (e.g. Jing & Avery, 2008; Kantabutra, 2011, 2014; Sridhar, 2011; Sridhar & Jones, 2013; D'Andreamatteo et al., 2015) that exploring several measures in both financial and non-financial performances is crucial for future study as it helps assess organizational performance and organizational sustainability.

Moreover, many researchers (Avery & Bergsteiner, 2010, Jing, 2012; Jing & Avery, 2008; Kantabutra, 2006, 2014; Suriyankietkaew & Avery, 2016; Zumitzavan & Michie, 2015) have studied about the key performance measures for organizational sustainability. Several sustainability measures have been proposed so as to evaluate the sustainability in organizations. Avery and Bergsteiner (2010, 2012) then proposed four performance outcomes, which help to improve sustainability in organizations, which are brand and reputation, customer satisfaction, financial performance and long-term shareholder value. Regarding to gaps for previous researches on the various goals of different enterprises, in order to customize the performance outcome with the pharmaceutical industry and measurement limitation in local unlisted company, the stakeholder satisfaction included customer, investor, supplier, distributor and employee satisfaction will be employed instead of long-term shareholder value. The long-term stakeholder value is viewed as the supreme goal of a sustainable organization despite no certain measure to evaluate it. Kantabutra (2014) proposed three sustainability performance outcomes by using Thai philosophy which is Sufficiency Economy as a concept to build more performance and establish public interests. Suriyankietkaew and Avery (2016) adopted Avery and Bergsteiner's (2012) performance outcomes for organizational sustainability, collectively renamed Sustainability Performance Outcomes (SPO) including of brand and reputation, customer satisfaction, financial performance and investor satisfaction was used instead of long-term shareholder value due to more tailored variable with the samples which are small and medium enterprises (SMEs) and measurement limitation. Academic scholars have described organizational performance as a broad term for all concepts that consider the success and achievement of company activities and goals. Different organizations distinguish their purposes and goals in running their business; therefore, the determined goals of each organization may be different and the levels of organizational performance may be varied (Fan et al., 2014; Zumitzavan & Michie, 2015). However, previous researches' performance outcomes for organizational sustainability such as brand loyalty, customer satisfaction and long-term shareholder value are useful. Avery and Bergsteiner's (2010, 2012) also states that performance measures should cover measures of investor, supplier and workers' satisfaction to evaluate broader concepts of organizational sustainability.

This study hence employs Avery and Bergsteiner's research, Sustainability Performance Outcomes (SPO), for organizational sustainability which include brand

and reputation, customer satisfaction, financial performance and long-term shareholder value as the core focus of the study.

Furthermore, organizational performance could be defined as the level of productivity that the company can accomplish towards attaining its goals, increasing organizational resources, supporting customers' needs and improving internal processes. Researchers have claimed that the organization's resources are the source of sustainable competitive advantages to support the organization in improving performance. The resource based view helps the firm knows better about their resources and which can be their competitive advantage. The resource based view (RBV) focuses on the internal capabilities; therefore, we must analyze the RBV to formulate a strategy and also to achieve the sustainable competitive advantage. These resources must be rare, valuable, without substitutes and difficult to imitate (Afiouni, 2007; Alvarez & Barney, 2017; Stadler et al., 2013).

Therefore, this thesis proposes that SPO for pharmaceutical enterprises measurement will be applicable to narrow the gap in this study and increase more understanding in seeking organizational sustainability. Based on SL framework by Avery and Bergsteiner's (2010), SPO measurement becomes the effective measurement of performance outcomes of the pharmaceutical organizational sustainability. Therefore the following hypotheses were derived.

H1: There is a positive predictive relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H2: There is a positive predictive relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organization.

The summary of main research objectives, research questions and hypotheses are summarized in the table 2.2.

Table 2.2 Summary of Main Research Objectives, Research Questions and Hypotheses

Research Objective (RO)	Research Question (RQ)	Sets of Research Hypotheses (H)
RO1: To empirically examine which SL factors significantly affect perceived Sustainability Performance Outcomes (SPO) and employee satisfaction in Thai pharmaceutical organization as well as provide confirmation of the general validity of the structural equation model.	RQ1: What SL factors positively predict relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization?	H1: There is a positive predictive relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.
	RQ2: What SL factors positively predict relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organization?	H2: There is a positive predictive relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organization.

CHAPTER III
RESEARCH METHODOLOGY

In this chapter, the content explains the research method and design applied to answer the research questions and test the hypotheses developed in Chapter 2. The first part describes the research method and design strategy. It will include the justification of the selection of the population, unit of analysis, sample size and sample selection. The later section explains details of questionnaire survey method and design. Lastly, the statistical analysis, measures of variables and their operational definitions are expressed. To conclude, this chapter forms an overview for the data analysis detailed in Chapter 4.

3.1 Research Method and Design

This section expresses how this research endeavors to answer the research questions. The research method and design play important role for obtaining data, determining appropriate techniques for analysis, and interpreting the results. It also influences to reliability of the results as well (Fard & Karimi, 2015). Regarding literature reviews, there are several methods and designs used for researches specifically in the healthcare context (D'Andreamatteo et al., 2015; Odhon'g & Omolo, 2015; Kantabutra, 2011; Zumitzavan & Michie, 2015; Fard & Karimi, 2015). In order to address the research objectives and research questions, quantitative research was mainly employed in the empirical examination of this thesis, which would be specifically explained in Chapter 4. The mixed-mode survey method was used and the questionnaire was specifically adopted for data collection in this research. The results from the questionnaire were analyzed using the Statistics Package for Social Science program (SPSS). The proposed data analysis of this study applied factor analysis and Structural Equation Modeling (SEM) to analyze data captured from the questionnaire. The justification of this choice is described in the next session and the data from previous academic researches was used as a guideline.

The utilization of quantitative data and the use of primary data are also noted by the researcher.

The overview of this empirical research is illustrated below. Figure 3.1 shows a summary of the research design and process flow chart for this study. Figure 3.2 shows research model for this study. Two sets of hypotheses supplementing the original H1 and H2 emerged. In addition to the main hypothesis, it is presumed that there is a positive predictive relationship between 23 SL factors and perceived Sustainability Performance Outcomes (SPO) and employee satisfaction in Thai pharmaceutical organization. The set of H1 and H2 is linked to all independent variables as follows:

- H1: There is a positive predictive relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.1: There is a positive predictive relationship between Continuous People Development and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.2: There is a positive predictive relationship between Amicable Labor Relations and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.3: There is a positive predictive relationship between Long-term Staff Retention and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.4: There is a positive predictive relationship between Internal Succession Planning and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.5: There is a positive predictive relationship between Valuing Staff and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.6: There is a positive predictive relationship between CEO and Top-Team Leadership and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.7: There is a positive predictive relationship between Ethics and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.8: There is a positive predictive relationship between Long-Term Perspective and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.9: There is a positive predictive relationship between Considered Organizational Change and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization

H1.10: There is a positive predictive relationship between Financial Market Independence and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.11: There is a positive predictive relationship between Environmental Responsibility and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.12: There is a positive predictive relationship between Social Responsibility and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.13: There is a positive predictive relationship between Stakeholder Approach and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.14: There is a positive predictive relationship between Strong and Shared Vision and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.15: There is a positive predictive relationship between Devolved and Consensual Decision-Making and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.16: There is a positive predictive relationship between Self-Management and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.17: There is a positive predictive relationship between Team Orientation and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.18: There is a positive predictive relationship between Enabling Culture and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.19: There is a positive predictive relationship between Knowledge Retention and Sharing and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.20: There is a positive predictive relationship between Trust and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.21: There is a positive predictive relationship between Strategic, Systemic Innovation and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.22: There is a positive predictive relationship between Staff Engagement and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

H1.23: There is a positive predictive relationship between Quality and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.

- H2: There is a positive predictive relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organization.

H2.1: There is a positive predictive relationship between Continuous People Development and perceived employee satisfaction in Thai pharmaceutical organization.

H2.2: There is a positive predictive relationship between Amicable Labor Relations and perceived employee satisfaction in Thai pharmaceutical organization.

H2.3: There is a positive predictive relationship between Long-term Staff Retention and perceived employee satisfaction in Thai pharmaceutical organization.

H2.4: There is a positive predictive relationship between Internal Succession Planning and perceived employee satisfaction in Thai pharmaceutical organization.

H2.5: There is a positive predictive relationship between Valuing staff and perceived employee satisfaction in Thai pharmaceutical organization.

H2.6: There is a positive predictive relationship between CEO and Top-Team Leadership and perceived employee satisfaction in Thai pharmaceutical organization.

H2.7: There is a positive predictive relationship between Ethics and perceived employee satisfaction in Thai pharmaceutical organization.

H2.8: There is a positive predictive relationship between Long-Term Perspective and perceived employee satisfaction in Thai pharmaceutical organization.

H2.9: There is a positive predictive relationship between Considered Organizational Change and perceived employee satisfaction in Thai pharmaceutical organization.

H2.10: There is a positive predictive relationship between Financial Market Independence and perceived employee satisfaction in Thai pharmaceutical organization.

H2.11: There is a positive predictive relationship between Environmental Responsibility and perceived employee satisfaction in Thai pharmaceutical organization.

H2.12: There is a positive predictive relationship between Social Responsibility and perceived employee satisfaction in Thai pharmaceutical organization.

H2.13: There is a positive predictive relationship between Stakeholder Approach and perceived employee satisfaction in Thai pharmaceutical organization.

H2.14: There is a positive predictive relationship between Strong and Shared Vision and perceived employee satisfaction in Thai pharmaceutical organization.

H2.15: There is a positive predictive relationship between Devolved and Consensual Decision-Making and perceived employee satisfaction in Thai pharmaceutical organization.

H2.16: There is a positive predictive relationship between Self-Management and perceived employee satisfaction in Thai pharmaceutical organization.

H2.17: There is a positive predictive relationship between Team Orientation and perceived employee satisfaction in Thai pharmaceutical organization.

H2.18: There is a positive predictive relationship between Enabling Culture and perceived employee satisfaction in Thai pharmaceutical organization.

H2.19: There is a positive predictive relationship between Knowledge Retention and Sharing and perceived employee satisfaction in Thai pharmaceutical organization.

H2.20: There is a positive predictive relationship between Trust and perceived employee satisfaction in Thai pharmaceutical organization.

H2.21: There is a positive predictive relationship between Strategic, Systemic Innovation and perceived employee satisfaction in Thai pharmaceutical organization.

H2.22: There is a positive predictive relationship between Staff Engagement and perceived employee satisfaction in Thai pharmaceutical organization.

H2.23: There is a positive predictive relationship between Quality and perceived employee satisfaction in Thai pharmaceutical organization.

The in-depth detail of the population, unit of analysis, sample size, sample selection and approach is discussed in subsequent sections. The later part also includes the explanation on questionnaire design and development and various statistical methods for data analysis in this thesis.

Population	Pharmaceutical organizations in Thailand including both local and global enterprises
	↓
Data collection instrument	Adopted Avery & Bergsteiner's Sustainable Leadership Questionnaire (SLQ)
	↓
Data collection method	A mixed-mode survey method (e.g. online, mail or telephone)
	↓
Questionnaire Distribution (sub-population)	1 survey for manager / 1 survey for full-time employee
	↓
Total sampling	Total 25 surveys per organization / Total 556 observations
	↓
Main data analysis	Confirmatory factor analysis / Structural Equation Modeling (SEM)
	↓
Data interpretation	Research findings & implications

Figure 3.1   Research Design & Process Flow Chart

Source: Adapted from Suparak Suriyankietkaew (2015)
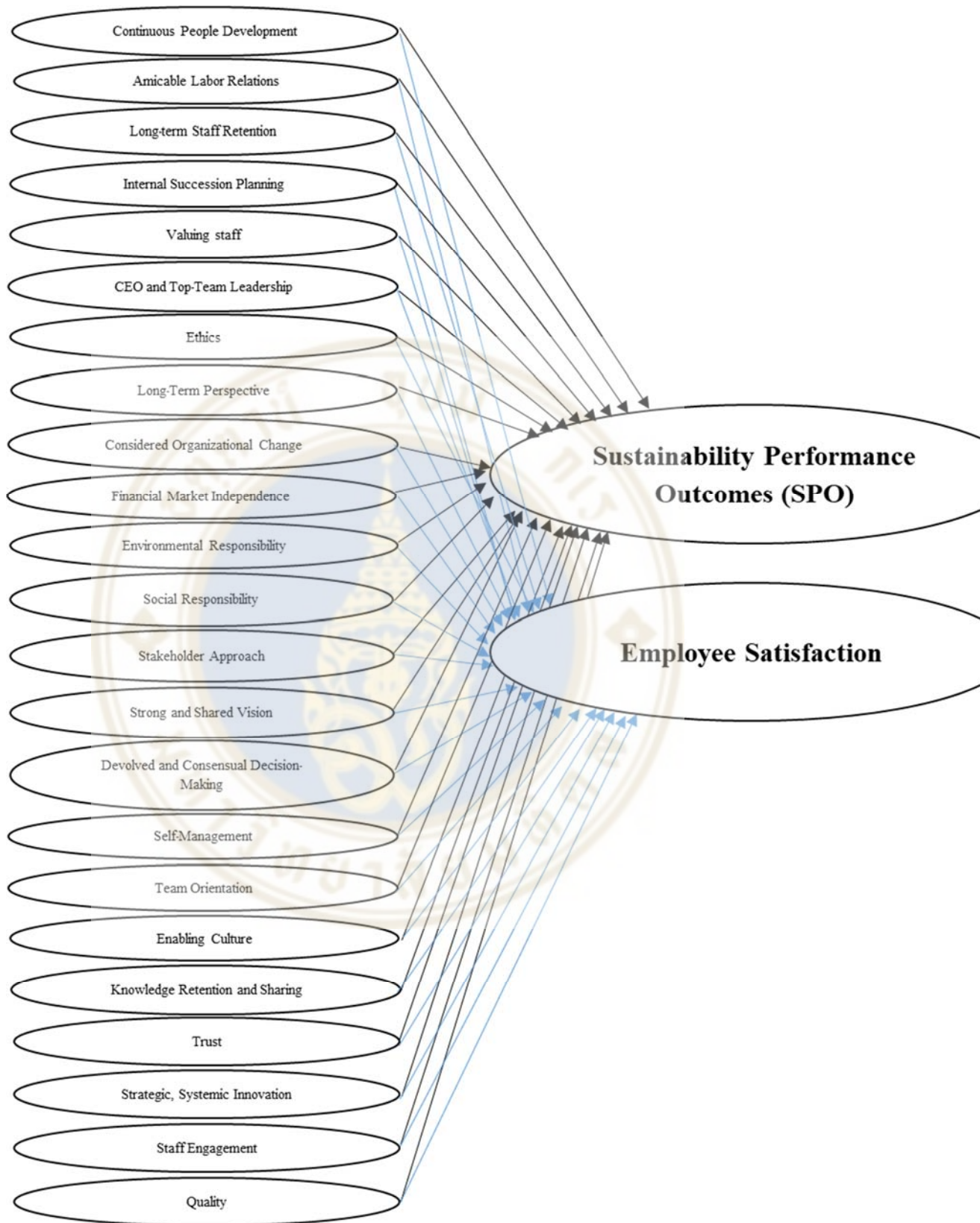
Figure 3.2   Research Model of This Study

3.2 Justification of choice for research method and design

Although, previous academic research in the context of healthcare used several methods and designs (D'Andreamatteo et al., 2015; Odhon'g & Omolo, 2015; Kantabutra, 2011; Zumitzavan & Michie, 2015; Fard & Karimi, 2015; Sumathi et al., 2015). Most of healthcare researches relating to any factors influencing sustainable leadership approach or organization performance similarly employ quantitative approach in order to apply with the empirical questions of researches and the purpose of ensuring that the data obtained is practical. This thesis which aims for investigating empirical hypothesis, therefore, applies quantitative approach as well. Furthermore, the researcher would obtain data from a rather large sample size hence the quantitative research would be more suitable than qualitative approaches, especially for the analysis of empirical examination and robustness of further data in this thesis (Zumitzavan & Michie, 2015; Fard & Karimi, 2015; Suriyankietkaew & Avery, 2016; Hair, Black, Rabin, & Anderson, 2010).

In social science research, the survey method is one of the most advantageous strategies for application and analysis of general conclusions. The survey research normally concerns the opinions, motives, attitude, values and norms of the unit of analysis. The survey method is mostly associated with the answered questionnaire (van der Velde, et al. 2008; Zumitzavan & Michie, 2015). In this thesis, thus, the questionnaire will be specifically adopted for data collection and the survey method will be used. Furthermore, the justification is the questionnaire survey method is widely used as research technique for quantitative methodologies (John W. Creswell, 2003; Hair et al., 2010). The researches in healthcare context also use the survey method to involve an interview and contrive a pre-designed questionnaire (Fard & Karimi, 2015; Sumathi et al., 2015). Additionally, the questionnaire is one of the most effective methods for data collection which enables researchers to uncover the respondent's thinking and achieve statistical analysis when comparatively large samples are required (Zumitzavan & Michie, 2015). The questionnaire survey method is also defined as an appropriated method for providing questions and more anonymous than personal interviews, which could ensure frankness of the responses (Sumathi et al., 2015). Lastly, the questionnaires provide standardization, convenience of administration and suitability for tabulation and statistical analysis. It provides practical and least expensive approach. Regarding all of these reasons, this study will employ

the survey method by developing tailored questionnaires. It is the most practical and least expensive approach for this type of study as opposed to an experimental design with random assignment, which is also not feasible for an in-depth descriptive examination of case studies (Hair et al., 2010). For these reasons, the questionnaire survey was chosen as an appropriate and effective research design for the study. The mixed-mode survey method will be used and the questionnaire will be specifically adopted for data collection in this research. The justification was described in the section 3.4. The justification for proposed data analysis, which is factor analysis and Structural Equation Modeling (SEM) was explained in the section 3.7.

It is important that the unit of analysis needs to be allowed in conjunction with the primary data in order to choose helpful information, which is related to the study topic for the data analysis (Zumitzavan & Michie, 2015). However, this research relies mainly on collecting primary empirical data through contriving of the questionnaire survey method.

3.3 Population and Sample

In this section, the population, sampling frame, sample size, and unit of analysis are discussed in turn.

3.3.1 Population

Pharmaceutical organizations in Thailand were the targeted population, chosen for the reasons explained in section 3.3.1.1.

3.3.1.1 Significance of Thailand and pharmaceutical industry

The healthcare industry is one of the world's fastest-growing and largest industries (Henry, 2016). Similar to Thailand, government spending emphasizes on the healthcare industry, which accounts for 4.1% of Thailand's GDP in 2014 and considered to be the highest amount among ASEAN countries. Thailand is considered to be the second largest healthcare market from Indonesia in Southeast Asia, paying approximately 20% of the total expenditure of this region (Worldbank, 2017). Moreover, Thai government launched a strategic plan with the attempt to increase the potential of the pharmaceutical industry via the research and modernizing manufacturing activities.

This strategy covered the measures to the improvement of the competitiveness of the pharmaceutical industry through R&D and further development of an environment that is conducive for indigenous industry growth (Thailand Board of Investment, 2016).

In addition to Thailand economic significance in pharmaceutical industry, scholars (e.g. Kantabutra, 2011, 2012a, b, 2014; Kantabutra & Suriyankietkaew, 2013, 2016) discuss a shift for organizational leadership with a long-term orientation and care for all stakeholders in creating sustainable businesses in Thailand. Various studies (Kantabutra, 2010c, 2012c, 2014; Khunthongjan, 2009; Puntasen, 2003; Himathongkam, 2016) also mentioned that some Thai organizations have already adopted a similar approach, termed the 'Sufficiency Economy philosophy' which was first promulgated by His Majesty King Bhumibol Adulyadej of Thailand in 1997. The application of Sufficiency Economy philosophy in healthcare organization has been investigated and adapted to solve various gaps and problems in healthcare system. The substantial effect and contribution for the country has also been illustrated. Thus, the extension of this concept should be conducted in order to emerge and leverage genuine effect for the country (Himathongkam, 2016).

The literature notes the importance of the pharmaceutical industry and calls for further leadership studies in the healthcare context (D'Andreamatteo et al., 2015; Odhon'g & Omolo, 2015; Kantabutra, 2011; Zumitzavan & Michie, 2015; Fard & Karimi, 2015). Regarding all significant aspects of pharmaceutical industry in Thailand, thus, this thesis aims to contribute an empirical investigation enhancing understanding and knowledge for leadership and management practices that will drive other advantageous in Asian and Thai context.

3.3.1.2 Sub-population

There are two sub-populations in this research, termed (1) managers, and (2) employees. Each group is defined as follows.

Managers are defined as those who are leader, oversee and are in charge of their overall organizations. They might have position as business owner, president, chief executive officer (CEO), top executive, top director, managing director (MD) and all levels of managers. The managers are chosen to be collected data because the researcher wants to understand their leadership behaviors and gain insight into their perceptions about the organization, systems and outcomes.

Employees refer to those who work under the managers. The researcher was interested in full-time staff for both male and female. In this thesis, employees include all staffs in order to gain employee perceptions of their leaders and also employee perceptions of the organization, systems and outcomes.

3.3.2 Sampling frame

Theoretically, the population in this thesis should include all pharmaceutical organizations in Thailand. Nonetheless, in real practice, it was not possible to include every pharmaceutical organization in the research study. Regarding report on pharmaceutical market in Thailand from Srinakharinwirot university in December 2016, there are 293 Thai pharmaceutical companies with all business practices including import, export, manufacture own products or under hiring contract. Moreover, some researchers define the difference between a global, transnational, international and multinational company (Iwan, 2007). Hence, a sampling frame from the population needed to be developed to ensure effectiveness and efficiency of this study (Hair et al., 2010).

Due to various methods for categorizing the business for pharmaceutical organizations, this thesis divided the pharmaceutical organizations into two groups; global and the local enterprises. The global enterprises refer to the companies, which mainly have foreign people as top management. While the local companies, the top management teams are Thai people as majority. Thai people means the person who have Thai nationality. And this thesis approached the pharmaceutical organizations, which mainly sell their products within Thailand. The justification of this customization is to develop the most appropriated sampling frame from the population to ensure effectiveness and efficiency of this study, which the questions are related to Sustainability Performance Outcomes (SPO) and employee satisfaction. There are many researches purpose that the top management team characteristics, for example ethnics, have influence on organization performance (Tulung & Ramdani, 2016; Hassan, Marimuthu, & Johl, 2015). Furthermore, regarding report on pharmaceutical market in Thailand from Srinakharinwirot university in December 2016, the private enterprises in Thailand can be divided into local and multinational companies. Hence, the sampling flame will help to maximize contribution of this thesis by capturing the overview of pharmaceutical industry in Thailand and

reflecting the research questions, which are related to Sustainability Performance Outcomes (SPO) and employee satisfaction.

3.3.3 Sample size

Sample size is an important factor for ensuring representativeness of the population, statistical robustness and reliability of the research results. Moreover, it is crucial for assessing and anticipating the statistical power of the proposed analysis, which can measure the acceptance of the analysis (Hair et al., 2010).

In order to answer the research questions and test the hypotheses, the researcher needed to employ various multivariable analysis techniques, particularly factor analysis and structural equation model (SEM), which would be discussed in Chapter 4. Regarding sample size calculation for factor analysis, the preferably sample size should be larger than 100. The minimum size is recommended as 5 or at least 10 observations per variable. For this thesis, there are 23 SL elements, SPO and employee satisfaction measurement. Therefore, a sample of at least 125, and preferably more than 250, is required to perform the factor analysis (Hair et al., 2010). For structural equation model (SEM), the rules of thumb recommend that a minimum ratio of observations to variables of 20:1 are necessary for ensuring appropriateness and adequate statistical power (Hair et al., 2010). This thesis employs 23 independent variables, and 2 dependent variables hence a sample size of at least 500 is needed. This thesis analyzed data from 543 respondents, and meet the acceptance sample size.

According to those rules and recommendation, this study plans to gain a sample size of at least 500 observations from both managers and their employees in both global and local Thai pharmaceutical organizations. The ratio of managers and employees is approximately 30:70 to reflect the organization structure and to meet the statistical requirements and ensure robustness and adequate statistical power for both analysis.

3.3.4 Unit of analysis

The unit of analysis in this study comprises the individual members of Thai pharmaceutical organizations, which are both managers and employees. Collecting data from these organizational members would help the researcher to understand the

holistic influence of a leader on organizational processes and outcomes. Moreover, gaining better knowledge of employees 'perceptions would help to understand the organizational operation, and the relation with several outcomes in this thesis. The analysis of difference response between managers and employees were additional analysis which explain in the appendix D.

3.3.5 Sampling approach

In order to reduce the costs and meet the possibility for this thesis, the researcher uses the sampling approach for collecting cases from the population in the sampling frame. This thesis employed convenience sampling method for maximizing the response rate within the limited time and resources of this research.

Consequently, there are some criticism on convenience sampling method; this method was used in literatures in healthcare context and the researcher uses this method based on the pre-defined criteria as previously described for the sampling frame. Furthermore, convenience sampling method has various benefit that would maximize the effectiveness of this study such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study (Etikan, Musa, & Alkassim, 2016; Hall, et al., 2015; Shires & Jaffee, 2015; Zumitzavan & Michie, 2015). Therefore, in order to minimize the drawbacks of convenience sampling method, this thesis will employ pre-defined criteria as previously described for the sampling frame. The thesis will approach the pharmaceutical organizations, for both global and local enterprises, which mainly sell their products within Thailand. Furthermore, the criteria for those organizations was described below;

- Global companies define as the organization, which mainly have foreign people as top management. Furthermore, this thesis will focus on the organizations who are members of The Pharmaceutical Research and Manufacturers Association (PReMA), which is well-known non-profit organization representing members who are research based pharmaceutical companies innovating medicines to combat the previously incurable and to improve on existing treatments. The data archived from PreMa official website on 9 July 2018 reports 42 members. Most of members are top global organizations in pharmaceutical industry (PreMa official website on 9 July 2018). There were 38 companies were approached for data collection.

- Local companies define as the organization, which mainly have top management team as Thai people. Thai people means the person who have Thai nationality. Furthermore, this thesis will focus on the organizations who have registered with Thai Food and Drug Administration (FDA) as manufacturers for modern drugs (medicine) who are certified by good manufacture practice (GMP). The data archived from FDA official website on 9 July 2018 reports 161 organizations (FDA official website on 9 July 2018). There were 15 companies were approached for data collection.

3.4 Mixed-mode Survey Method

In this study, a mixed-mode survey method, including of online, mail and telephone, was used to approach potential participants. The mixed-mode survey was developed with systematic, standardized procedural plan. The justification and appropriateness for this method is explained in the following paragraph.

Mixed mode surveys are widely used for researches. They combine different modes of data collection, for example, face-to-face, telephone, or online, are becoming standard data collection tools. There are various advantages of this mode of survey. They can reduce the costs and are cost effective because they approach different kinds of respondents and obtain high response rate. Moreover, they have the benefit to decrease both coverage errors and nonresponse errors, thereby increasing the representativeness of the targeted sample at affordable costs. Telephone surveys are convenient and relatively cheap. Furthermore, they also offer faster collection, which could ensure the number of answer returns. For online surveys, they are ease and cost effective as well. In the era of innovation and technology, emails are one of highly effective communication methods and reliable than the previous method like mail surveys (Hox, De Leeuw & Zijlmans, 2015; Rübsamen, Akmatov, Castell, Karch, & Mikolajczyk, 2017; Dillman & Edwards, 2016). To ensure that questionnaires were delivered accurately to targeted respondents as much as possible within the time limitation, the researchers arranged the systematic and standardized mixed-mode survey procedure, which illustrate in the Figure 3.3.

Mixed-mode Survey Process Flow Chart
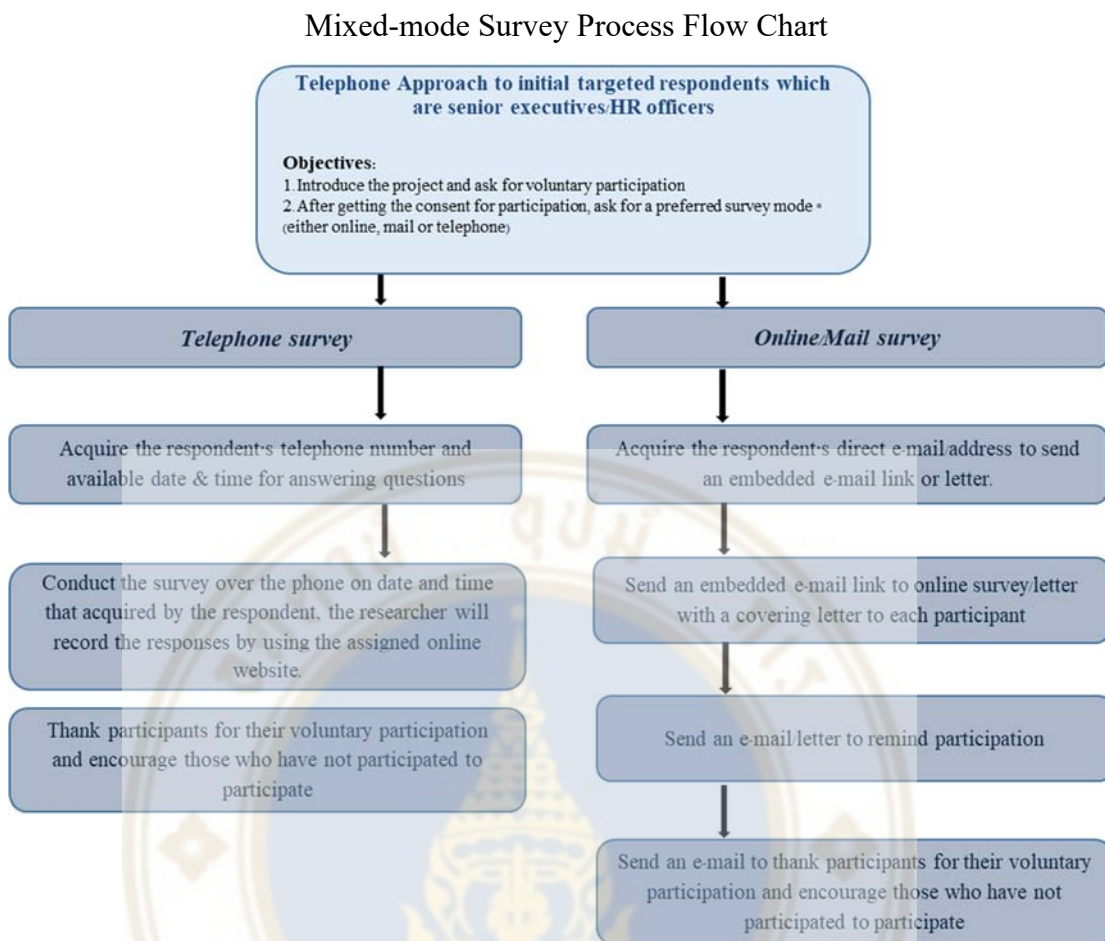
Figure 3.**3 Summary of Systematic, Standardized Mixed-Mode Survey Procedure**
Source: Adapted from Suparak Suriyankietkaew (2015)

The introduction was done with organizational leader or HR manager in order to get the access to the organization and ask for his/her voluntary participation in the survey and to encourage employees to volunteer. Initially, the approach was done by telephone for invitation and the purpose of obtaining their participation consent. After consent, each respondent was given the choice to respond through either online-mode or telephone-mode survey, depending on his/her preference and convenience, to ensure maximum participation. They were also asked to suggest 3-5 employees who would volunteer to conduct the survey. They were informed that their response and identity would be protected, as their responses would be anonymous and kept strictly private. Necessary information about the research, for example, the purpose of the study, procedure, voluntary participation, anonymity and privacy of the responses, was specified in the letter.

3.5 Dat a Collection

This section explains the detail of data collection methodology and its appropriateness. All procedures regarding data collection in this study were reviewed and approved by the IPSR-Institutional Review Board (IPSR-IRB). Certificate of Ethical Approval number is 2018/08-234. The processes of data collection including the pre-test, pilot study and main study are explained deeply in the following paragraph.

3.5.1 Pilot Study

The objective of the pilot study is to improve the appropriateness of the questionnaire, which would help to reduce difficulties in understanding and answering questions for respondents. Furthermore, it also purposes a better understanding of the frames of reference relevant to the questionnaire and question wording. Additionally, the pilot study could test the validity and reliability of the data collected (Saunders et al. 2009; Zumitzavan & Michie, 2015). The pilot test will include 40 completed questionnaires from the two groups of respondents (from both managers and employees). Respondents with the specified aspects were approached aligning with the planned mixed-mode survey method. The data was collected in September 2018. Pilot respondents were excluded from the main study in order to avoid double approaches made to the same respondents.

3.5.2 Main Study

The main study is the data collection for use mainly in result interpretation on this thesis. The data collection method employed in the main study involved rephrase of responses to the questionnaire and used convenient sampling. Procedures for approaching respondents was explained in the sampling approach. The data was collected from September to December 2018. It is noted that all procedures regarding data collection in this study were reviewed and approved by the Ethics Sub-Committee.

3.6 Questionnaire Design, Development and Coding

In this section, details of the questionnaire design and development are explained and justified.

3.6.1 Questionnaire Format and Rating Scales

Questionnaires are employed as one of the most fundamental and frequently used tool for research-specific objective questions that the researcher required respondents to answer. The format of the questionnaire is also crucial for ensuring standard of those questions, foster cooperation and motivation and serve as permanent records of the research (Dillman & Edwards, 2016). Furthermore, suitable questionnaire format and design can help the researcher speed up the data analysis process and ensure reliability and validity measures (Rübsamen et al., 2017). Regarding specified hypotheses relating to the 23 independent variables of this study, Avery & Bergsteiner's (2010, 2012) Sustainable Leadership Questionnaire (SLQ) was adapted.

This thesis applied the questionnaire format using closed-ended Likert scale questions, which could be responded quickly and easily. Likert scale is adopted as one of the most fundamental and frequently used psychometric tools in educational and social sciences research (Joshi, Kale, Chandel, & Pal, 2015). In order to measure the attributes of constructs under study, which allow for a degree of feelings to be expressed or attitudes, the scaled-response questions were often used in healthcare context researches (Voutilainen, Pitkäaho, Kvist, & Vehviläinen Julkunen, 2016; Platis, Reklitis, & Zimeras, 2015). Furthermore the questionnaire was validated by previous researches on sustainable leadership which employed in this thesis (Avery & Bergsteiner, 2010, 2012; Suriyankietkaew & Avery, 2016).

The fixed-format self-report measures that employed in this study are known as scales. One of the available response formats is the Likert scale, which is well-developed and frequently used in the literature in healthcare context (Joshi et al., 2015; Voutilainen et al., 2016; Platis et al., 2015). Additionally, a 5-point Likert scale was primarily applied in this thesis. The justification is as similar as previous researches in health and social science. The scales allow to measure the respondents'opinions and beliefs and expected to provide data for hypothesis and analysis.

In this thesis, the scale was developed in the form of numbers and related words. Each item was assessed using a 5-point Likert Scale ranging from "1 – 5", which are used as numeric representation of "strongly disagree – strongly agree" and "extremely dissatisfied – extremely satisfied". The distance between each numeric scale between the number 1, 2, 3, 4 and 5 was intended to be scaled equally to avoid any bias in the analysis. Furthermore, there is "Don't know" choice (6) for respondents who cannot decide on the matter being asked in each item. Doing so can provide respondents to feel free to choose, so that they are not forced to give an answer.

The Likert 5-point scale in this thesis was assumed to be the interval scale, which was appropriate for the required statistical procedures, particularly multiple regression analysis, as explained in Chapter 4. Due to equal distance and continuous data, the Likert interval scale was chosen for all questionnaire items measuring the variables in the research model.

3.6.2 Questionnaire Content and Back-Translation

The content of the questionnaire and the rationale of each item will be explained in this section. The questionnaire and its contents in English are shown in Appendix. The questions are designed to be easy to understand and answer. Moreover, there are some complex or difficult questions in the later part in order to let the respondents are intuitive before escalate to more complex or difficult questions. The layout and content of the questions is developed in a way that respondents could easily follow (Joshi et al., 2015).

The questionnaire was adopted from organizational leadership and management adapted from Avery and Bergsteiner's (2010, 2012) SLQ and the sustainable leadership research from Suriyankietkaew and Avery (2016). According to the blueprint questionnaires were not applied specifically for pharmaceutical industry, there would be some questions that were improved to be more suitable with pharmaceutical context. The details of questionnaire used in this thesis was described below;

The questionnaire comprises of six parts.

The first part focuses on collecting demographic information, including gender, age, education level, occupation and job level. There is edition on the range of age in each choice to be fit with each generations, which are the Baby Boomers, generation X, Y

and Z. Typically, the Baby Boomers birth years range from the early-to-mid 1940s and end from 1960 to 1964. While birth years range from the early-to-mid 1960s and ending birth years in the early 1980s for generation X. Millennials, also known as Generation Y were born from the early 1980s as starting birth years and the mid 1990s to early 2000s. Generation Z uses the mid-1990s to mid-2000s as starting birth years. Scholars claimed that the performance, quality of life or other perspectives were different among generations (William & Neil, 1991; Generations. In Wikipedia. Retrieved July 9, 2018; Lai, Chang, & Hsu, 2012; Majumdar, 2016; Maier, Tavanti, Bombard, Gentile, & Bradford, 2015). The justification for the edition is there might be difference on perspective of each generation to the management of organization. Therefore, this thesis questionnaire was edited on the range of age in order to facilitate further investigation, which can use this demographic data for analysis.

The second part purposes to collect data about the organization. There was a total of eight key questions from blueprint questionnaire (Suriyankietkaew & Avery, 2016), consisting of organizational size, number of employees, organizational fixed assets value, ownership type, import-export activities, years of establishment (longevity of organization), organization's financial health (estimated firm's net worth from its past annual revenue) and industry type. However, those questions were developed specifically for SMEs, the researcher, thus, deleted some questions and left the question on ownership type and number of employees, which are critically related and effected to the questions and objectives of this study.

The third part aims to gain understanding about perceptions of organizational leadership and management adapted from Avery and Bergsteiner's (2010, 2012) and Suriyankietkaew and Avery (2016) SLQ. The researcher developed some questions tailored for pharmaceutical industry. Additional questions will be aligned with literature reviewed in Chapter 2. There are some sustainable leadership practices, which were frequently investigated in the healthcare context including ethics, knowledge retention and sharing, innovation and quality.

- Ethics and compassion of healthcare person is linked to patients' health outcomes and organization performance. Compassionate health care is universally valued as a social and moral practice, which should be upheld and sustained (Decety & Fotopoulou, 2015; de Zulueta, 2015, 2016; PreMa official website on 9 July 2018; FDA official

website on 9 July 2018). Therefore, the researcher added the question related to the PreMa code of conduct or GMP regulation for ethics.

- Many scholars researched on the relationship between knowledge sharing and organizational performance and almost investigation shows the positive correlation between both of them. Furthermore, knowledge management can also help to enhance the innovative processes within an organization (Odhon'g & Omolo, 2015; Zumitzavan & Michie, 2015; Noruzy, 2013).

- Various sources of research in healthcare claimed that an innovation could be enhanced by various methods and tactics because it plays significant role for performance improving in the organization (Mirkov, 2018; Johnson Vickberg, & Christfort, 2017; Noruzy, 2013).

- Quality care could enhance trusts with high levels of engagement, which is very crucial for medical professionals and related with organizational performance (Spurgeon et al., 2017; Joseph & Huber, 2015). Hence, the quality assessment standard of procedure is crucial for quality aspect.

Regarding the knowledge retention and sharing and innovation practice, due to a lack of research investigating on SL practices and organizational performance outcomes in the pharmaceutical organizations, this study would employ the measurement developed by Noruzy, et al., which were validated by confirmatory factor analysis from the study and the scale showed high validity and reliability. The study was conducted in manufacturing companies, which has similarity in the consequence of knowledge retention and sharing as well as innovation with pharmaceutical organizations (Noruzy, 2013). However, the researcher focused on the validated and reliable items that aligned with this research objectives. Knowledge management was measured by using the scales developed by Gold et al (Gold, Malhotra, & Segars, 2001). This scale consists of four interrelated processes: knowledge acquisition, knowledge transfer, knowledge integration and knowledge conversion. The existing items are considered to be aligned with the knowledge acquisition and knowledge transfer as definition stated by Gold et al. Hence, this study used the questions which reflect knowledge integration and knowledge conversion from those studies (Noruzy, 2013; Gold, Malhotra, & Segars, 2001). For organizational innovation, it was adopted from the scale of Miller and Friesen's (Miller,

Friesen, 1983). As mentioned, the researcher focused on the validated and reliable items that aligned with this research objectives.

All 59 items in this part were developed to reflect SL practices. The SLQ is an established measurement scale that has been tested for validity and reliability in measuring the 23 SL practices.

In fourth part consists of six questions for measuring perceived organizational performance (based on SPO) relative to its competitors. The SPO based on pharmaceutical organization, which discussed in Chapter 2 includes brand and reputation, financial performance and stakeholder's satisfaction, which includes customers, shareholders, suppliers and distributors.

In part five, there are three questions, which intend to investigate past performance of the organization, including organizational net profits, sales revenue and controllable costs in the past three years. Following Nath, Islam, and Saha, 2015, these measures can indicate for financial performance in pharmaceutical organization.

In part six, there is three item for measuring overall employee satisfaction.

The questionnaire consists of 78 questions that are developed to investigate the research objectives, and to examine the relationships between SL practices and organizational performance outcomes (SPO) and employee satisfaction.

Regarding the back-translation approach, this thesis adopt Suriyankietkaew S. and Avery G. (2016) SLQ questionnaire. The questionnaire was originally developed in the English language and translated into Thai by a bilingual native of Thailand and another bilingual English speaker then translated it back into the source language. The original and back-translated versions were carefully compared for differences in a committee-based review, which includes a bilingual researcher and two English-speaking researchers. The questionnaire has some questions that differ from the origin due to customization for pharmaceutical organization. The developed question are reviewed by thesis consultant and employ back-translation approach. They were translated into Thai by a bilingual native of Thailand and another bilingual English speaker then translated it back into the source language. All translators also work in the pharmaceutical industry in order to improve the questions and ensure understanding within the population. The Thai-language version and the English origin are located in the Appendix.

Table 3.1 Summary of questionnaire content, related SL practices and reference in healthcare context

Description	SL Reference	Reference in healthcare context
1. Everyone has good ongoing access to training and development in this organization.	Developing people	Thompson, Wolf, & Spear, 2003; Young, 2004; Spear, 2005; Niemeijer, 2012; D'Andreamatteo et al., 2015; Akerjordet et al., 2018; Mortier, Vlerick, & Clays, 2016 de Zulueta, 2016; West, Lyubovnikova, Eckert, & Denis, 2014
2. Training and development are some of the first things cut in difficult times. *		
3. Employee representatives are involved in key strategic decisions.	Labor relations	Buchan, Twigg, Dussault, Duffield, & Stone, 2015; Cummings, 2010; Akerjordet et al., 2018; Himathongkam & Vannapruegs, 2016; Akerjordet et al., 2018; Zumitzavan & Michie, 2015; Mortier et al, 2016; Himathongkam & Vannapruegs, 2016
4. Disputes between leaders and employees are typically settled through external processes such as arbitration or the courts. *		
5. If this organization had to lay people off, our leaders would support those affected in any way they could.	Staff retention	Sumathi et al., 2015; Hayton, Carnabuci, & Eisenberger, 2012; Maleknia, 2011; Fard & Karimi, 2015; Mussalo, 2018; Boussalis, Feldman, & Smith, 2018; Joseph & Huber, 2015; Smolowitz, Speakman, & Wojnar, 2015
6. Our leaders lay off people if it is necessary to achieve short term financial results. *		
7. Our organization has a formal succession planning policy in place.	Succession planning	Decety & Fotopoulou, 2015; de Zulueta, 2015; de Zulueta, 2016; "PreMa," 2018; "FDA Thailand," 2018; McGivern et al., 2015; Schott et al., 2016; Spurgeon et al., 2015; Denis & van Gestel, 2016
8. Our organization fills many management positions with outsiders. *		
9. Our leaders treat people with respect, consideration and integrity.	Valuing staff	Joseph & Huber, 2015; Huber, 2014; Avery, 2016; Avery, 2005; Kantabutra, 2011; Himathongkam & Vannapruegs, 2016
10. Our leaders are not involved in people's personal lives. *		

Table 3.1 Summary of questionnaire content, related SL practices and reference in healthcare context (cont.)

Description	SL Reference	Reference in healthcare context
11. Key strategic decisions are made by the top management team, not just the most senior person - the General Manager.	CEO & top team leadership	Chandra, Rinkoo, Verma, Kapoor, & Sharma, 2013; Price, Sergelen & Unursaikhan, 2013; Sagha, Xuan, & Shepley, 2016; Marimuthu & Paulose, 2016; D'Andreamatteo et al., 2015; Crema & Verbano, 2015; Marimuthu & Paulose, 2016
12. In this organization the General Manager resolves difficult situations, not the top management team.		
13. As far as I can see, our organization consistently behaves ethically	Ethics	Avery, 2016; Smolowitz et al., 2015; Joseph & Huber, 2015; Avery, 2016; Sims et al., 2015; Fard & Karimi, 2015; Morrison & Milliken, 2000; Spurgeon et al., 2017; Sumathi et al., 2015
14. I am aware that our organization has an ethical code of conduct that explains what is expected of all employees.		
15. The consensus in this organization is that we must always act ethically no matter how tough things get.		
16. As far as I am concerned, the ethical code of conduct of this organization is equally or more strict than PreMa (for global company) or GMP (for local company).		
17. Our decisions in this organization, are made with the long-term in mind.	Long-term perspective	Sims et al., 2015; Mirkov, 2018 Mirkov, 2018; Edmondson, 2015 Odhon'g & Omolo, 2015; Zumitzavan & Michie, 2015; Noruzy, 2013; Gold, Malhotra, & Segars, 2001
18. Our leaders usually focus on long-term planning and strategies (e.g. long-term investment in technologies and/ or long-term resource management)		

Table 3.1 Summary of questionnaire content, related SL practices and reference in healthcare context (cont.)

Description	SL Reference	Reference in healthcare context
19. People in this organization thinks and act for long-term success.		
20. When major change is planned, the affected people are consulted and involved.	Considered organizational change	Hunter, 2015; Denis & van Gestel, 2016 Mirkov, 2018; Johnson Vickberg, & Christfort, 2017; Noruzy, 2013 Sumathi et al., 2015; Sims et al., 2015
21. Our leaders carefully plan change to ensure new processes and behaviors suit the existing culture.		
22. When major change is necessary, our leaders handle it very carefully to minimize harm.		
23. Our leaders make business decisions that are right for the organization, even if financial analysts disagree.	Financial market independence	Spurgeon et al., 2017; Joseph & Huber, 2015; Valmohammadi & Roshanzamir, 2015; Mehralian, Nazari, Zarei, & Rasekh, 2016 Thompson, Wolf, & Spear, 2003; Young, 2004; Spear, 2005; Niemeijer, 2012; D'Andreamatteo et al., 2015; Akerjordet et al., 2018; Mortier, Vlerick, & Clays, 2016
24. Our leaders believe that our organization must grow, whatever the cost. *		
25. Environmental protection is a core value of this organization that influences behavior of employees, suppliers and even customers	Environmental responsibility	de Zulueta, 2016; West, Lyubovnikova, Eckert, & Denis, 2014 Buchan, Twigg, Dussault, Duffield, & Stone, 2015; Cummings, 2010; Akerjordet et al., 2018; Himathongkam & Vannapruegs, 2016
26. This organization's environmental policies meet, but do not exceed what the law requires. *		
27. Our leaders encourage employees to engage in social or community activities in work time.	Social responsibility	Akerjordet et al., 2018; Zumitzavan & Michie, 2015; Mortier et al, 2016; Himathongkam & Vannapruegs, 2016; Sumathi et al., 2015; Hayton, Carnabuci, & Eisenberger, 2012; Maleknia, 2011; Fard & Karimi, 2015

Table 3.1 Summary of questionnaire content, related SL practices and reference in healthcare context (cont.)

Description	SL Reference	Reference in healthcare context
28. In this organization, generating profits and providing jobs is considered sufficient contribution to the community. *		
29. Our leaders value others' interests, in addition to investors' needs.	Stakeholder consideration	Mussalo, 2018; Boussalis, Feldman, & Smith, 2018; Joseph & Huber, 2015; Smolowitz, Speakman, & Wojnar, 2015 Decety & Fotopoulou, 2015; de Zulueta, 2015; de Zulueta, 2016; "PreMa," 2018; "FDA Thailand," 2018 McGivern et al., 2015; Schott et al., 2016; Spurgeon et al., 2015; Denis & van Gestel, 2016
30.Our leaders show respect for, and work closely with, employees, customers, suppliers and other stakeholders.		
31. Other things being equal, this organization chooses suppliers based on price rather than long-standing relationships. *		
32. Our leaders have a vision that goes beyond just making as much money as possible.	Strong and shared vision	Joseph & Huber, 2015; Huber, 2014; Avery, 2016; Avery, 2005; Kantabutra, 2011; Himathongkam & Vannapruegs, 2016 Chandra, Rinkoo, Verma, Kapoor, & Sharma, 2013; Price, Sergelen & Unursaikhan, 2013; Sagha, Xuan, & Shepley, 2016; Marimuthu & Paulose, 2016; D'Andreamatteo et al., 2015; Crema & Verbano, 2015; Marimuthu & Paulose, 2016
33. Our organizational vision energizes and guides people's work.		
34. This organization has a strong vision that everyone knows, shares and works towards.		
35. I'm unsure what this organization's vision for the future is. *		
36. Employees are encouraged to challenge decisions made by our leaders.	Devolved decision-making	Avery, 2016; Smolowitz et al., 2015; Joseph & Huber, 2015; Avery, 2016; Sims et al., 2015
37. Our leaders look for consensus when making decisions.		

Table 3.1 Summary of questionnaire content, related SL practices and reference in healthcare context (cont.)

Description	SL Reference	Reference in healthcare context
38. As employees in this organization, we have high discretion over our working lives provided we deliver the required outcomes.	Self-management	Fard & Karimi, 2015; Morrison & Milliken, 2000; Spurgeon et al., 2017; Sumathi et al., 2015
39. Our leaders and managers set detailed work objectives, specify the way work will be done, and monitor progress closely. *		
40. Our organization has a strong team culture.	Team orientation	Sims et al., 2015; Mirkov, 2018 Mirkov, 2018; Edmondson, 2015
41. People work well in teams at all levels of this organization.		
42. Our leaders treat employees as the organization's most valuable asset.	Enabling culture	Odhon'g & Omolo, 2015; Zumitzavan & Michie, 2015; Noruzy, 2013; Gold, Malhotra, & Segars, 2001 Hunter, 2015; Denis & van Gestel, 2016
43. The way things are done in this organization really engages people's hearts and minds.		
44. This organization likes people to get together informally during work hours, to exchange information and ideas about their work.	Knowledge sharing and retention	Mirkov, 2018; Johnson Vickberg, & Christfort, 2017; Noruzy, 2013 Sumathi et al., 2015; Sims et al., 2015 Thompson, Wolf, & Spear, 2003; Young, 2004; Spear, 2005; Niemeijer, 2012; D'Andreamatteo et al., 2015; Akerjordet et al., 2018; Mortier, Vlerick, & Clays, 2016
45. Our organization offers many formal and informal opportunities to share information and ideas.		
46. Our organization has processes for integrating different sources and types of knowledge		
47. Our organization has processes for converting shared knowledge into plans of action		

Table 3.1 Summary of questionnaire content, related SL practices and reference in healthcare context (cont.)

Description	SL Reference	Reference in healthcare context
48. In this organization, we can rely on our people to keep to their word.	Trust	de Zulueta, 2016; West, Lyubovnikova, Eckert, & Denis, 2014; Buchan, Twigg, Dussault, Duffield, & Stone, 2015; Cummings, 2010; Akerjordet et al., 2018; Himathongkam & Vannapruegs, 2016
49. In this organization, people deal with each other based on an understanding that we will look after each other's best interests.		
50. Everyone here can be innovative, even if they are not employed in a research capacity.	Strategic, systemic innovation	Akerjordet et al., 2018; Zumitzavan & Michie, 2015; Mortier et al, 2016; Himathongkam & Vannapruegs, 2016
51. We have systems to encourage, evaluate, track, reward and celebrate innovative ideas.		Sumathi et al., 2015; Hayton, Carnabuci, & Eisenberger, 2012; Maleknia, 2011; Fard & Karimi, 2015
52. Our leaders accept that innovation contains the risk of failure.		Mussalo, 2018; Boussalis, Feldman, & Smith, 2018; Joseph & Huber, 2015; Smolowitz, Speakman, & Wojnar, 2015
53. In comparison with its competitors, this organization has become much more innovative.		Decety & Fotopoulou, 2015; de Zulueta, 2015; de Zulueta, 2016; "PreMa," 2018; "FDA Thailand," 2018
54. I am proud to tell people that I work for this organization.	Staff engagement	McGivern et al., 2015; Schott et al., 2016; Spurgeon et al., 2015; Denis & van Gestel, 2016; Joseph & Huber, 2015; Huber, 2014; Avery, 2016
55. People give their personal best for this organization because of the excellent way in which it treats them.		
56. Supplying products and services of the highest quality is a matter of pride to our organization.	Quality	Avery, 2005; Kantabutra, 2011; Himathongkam & Vannapruegs, 2016
57. The view around here is that increasing quality, increases productivity and profits.		

Table 3.1 Summary of questionnaire content, related SL practices and reference in healthcare context (cont.)

Description	SL Reference	Reference in healthcare context
58. This organization has clear and strict standard of procedure (SOP) for quality assessment.		
59. This organization has clear and strict standard of procedure (SOP) for ensuring product quality and management of suboptimal quality product.		

Source: Adapted from Suparak Suriyankietkaew (2015)

3.7 Statistical Methods for Data Analysis

For this thesis, multivariate data analysis was employed to uncover answers to the research questions (RQ) and test hypotheses. To identify effects of one set of data on all or several of the variables in other sets, this method is suitable (Hair et al., 2010). Furthermore, multivariate analysis has been frequently employed by many leadership researchers (Kantabutra, 2006; Suriyankietkaew & Avery, 2016); even in the healthcare context (Zumitzavan & Michie, 2015). The justification of choice is described below,

Structural Equation Modeling (SEM) is one of the multivariate analyses. SEM translates a series of hypothesized 'cause and effect' relationships among variables into a composite hypothesis, which realizes patterns of statistical dependencies (Shipley, 2000). Moreover, it provides a comprehensive method for testing of theoretical models (Pugesek, Tomer, & von Eye, 2003) and indicates the magnitude of the effect, either direct or indirect, which the independent variables have on the dependent variables (Bentler, 1980). The model goodness of fits would be tested, the achievement on acceptable criteria provides the argument for probable model. The unacceptable goodness of fit indices might make the model been rejected (Byrne, 2006). SEM can assess various regressions and allow variables to be classified as both independent and dependent within the same model (Schumacker & Lomax, 2004). The holistic analysis of SL factors in the context of healthcare in Thai pharmaceutical organizations has never been investigated;

therefore, SEM will help to provide data that fulfill these gaps. Additionally, it provides a confirmatory approach to data analysis. There are two models involved in the analysis namely measurement model and structural model. The measurement model illustrates the relationship between response items and their underlying latent construct. Unidimensionality, validity, and reliability are needed to be assessed before the structural model will be created. Therefore, Confirmatory Factor Analysis (CFA) should be processed and this analysis will help to address the issues of construct validity and reliability (Schumacker & Lomax, 2004). Regarding the structural model, it demonstrates the inter-relationships among constructs in the research, which are assembled into the structural model based on the hypothesis that was stated in the theoretical framework.

The assessment for each element in a measurement model comprises of

1. Unidimensionality: unidimensionality can be assessed by acceptable factor loadings for the respective latent construct. For an already established item, the factor loading for an item should be 0.6 or higher (Field, 2009).

2. Validity: the construct validity is achieved when the Fitness Indexes for a construct achieved the required level, which will be described in the following section. Moreover, the discriminant validity is achieved when the measurement model is free from redundant items. The requirement for discriminant validity is the correlation between exogenous constructs should be less than 0.85 (Clark & Watson 1995; Kline 2011).

3. Reliability: reliability is the process to assess how the measurement model is reliable in measuring the intended latent construct. For measuring the reliability of the measured variables, Cronbach's Alpha and Corrected-Items Total Correlation value was a simple and commonly used measure (Hair et al., 2010). Regarding multiple Likert-type scales and items, Cronbach's alpha is most commonly used when you want to assess the internal consistency of a questionnaire. Cronbach's alpha coefficient at a score of over 0.7 was inspected for high internal consistency (Hair, Black, Babin, Anderson, & Tatham, 2006). Furthermore, Corrected-Items Total Correlation value was inspected for each item. The Corrected-Items Total Correlation value at over 0.3 is acceptable and should be more than 0.45 for structural equation model analysis (Field, 2009).

Regarding RQ1 and 2, Confirmatory Factor Analysis (CFA) were analyzed for validity and reliability of each variable. It was processed for each variables of constructs and for the research model. Furthermore, Structural Equation Modeling (SEM) would

be employed to investigate the relationship between each construct including extracted structures of leadership and management factor derived from SL, perceived Sustainability Performance Outcomes (SPO) and employee satisfaction (structural model) as well as the relationships between the constructs and the indicator variables (measurement models). The significant relationship would be indicated by significance of path analysis.

There are several fit statistics, which are used to assess the confirmatory factor analyses (CFA) and Structural Equation Modeling (SEM). In order to evaluate the fitness of the model, this thesis employed recommended cut-offs from previous researches. The ratio of χ^2 (Chi-Square) to df (degrees of freedom) should be less than 3.00 (Marsh and Hocevar, 1985). Goodness of Fit (GFI) should be over 0.90 and Adjusted Goodness of Fit (AGFI) should be over 0.85 (Schumacker and Lomax, 2004). Furthermore, Root Mean Square Error of Approximation (RMSEA) should be less than 0.08 (Browne and Cudeck, 1993). The fitness indices summary were shown in Table 3.2.

Table 3.2 The Fitness Indexes for the model in this thesis

Measure	Name	Description	Cut-off for good fit	Reference
X2/df	Ratio of χ^2 (Chi-Square) to df (degrees of freedom)	A model demonstrates reasonable fit if the statistic adjusted by its degrees of freedom is acceptable	<3.00	Marsh and Hocevar (1985)
GFI	Goodness of Fit	GFI is the proportion of variance accounted for by the estimated population covariance. Analogous to R2.	>0.90	Schumacker and Lomax, 2004
AGFI	Adjusted Goodness of Fit	AGFI favors parsimony.	>0.85	Schumacker and Lomax, 2004
RMSEA	Root Mean Square Error of Approximation	A parsimony-adjusted index. Values closer to 0 represent a good fit.	<0.08	Browne and Cudeck (1993)

Table 3.3 summarizes statistical analysis used to answer the research questions and test the hypotheses. In the next chapter, there is explanation on details of each statistical analysis.

Table 3.3 Summary of Statistical Methods for Data Analysis

Research Objective (RO)	Research Question (RQ)	Sets of Research Hypotheses (H)	Statistical Analysis
RO1: To empirically examine which SL factors significantly affect perceived Sustainability Performance Outcomes (SPO) and employee satisfaction in Thai pharmaceutical organization as well as provide confirmation of the general validity of the structural equation model.	RQ1: What SL factors positively predict relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization?	H1: There is a positive predictive relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organization.	**Structural Equation Modeling (SEM)** **Reason:** to investigate the relationship between each construct including SL factors, perceived Sustainability Performance Outcomes (SPO) and employee satisfaction (structural model) as well as the relationships between the constructs and the indicator variables (measurement models)
	RQ2: What SL factors positively predict relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organization?	H2: There is a positive predictive relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organization.	

CHAPTER IV
DATA ANALYSIS AND RESULTS

This chapter comprises the results of the hypotheses testing. Initially, sample characteristics (i.e. demographics and organizational information) will be described. The second part explains data preparation and examination. Details of statistical data analysis is articulated in the third part in order to answer the research questions and test hypotheses for this study. Lastly, the last part of this chapter summarizes the results of the hypothesis testing.

4.1 Description of Sample

The descriptive analysis of the sample characteristics is reported in this section. There are subsections for summary of demographic and organizational information explaining the nature of the respondents. Initially, the researcher collected a total of 556 questionnaires from both organizational leaders and the employees of 35 Thai pharmaceutical company with a total of 75% response rate. Response rate with greater than 20% is considered acceptable. The response rate needs to be as high as possible to decrease non-response error and increase generalizability. For this research, the response rate was much higher than the suitable level for reporting and analysis in a survey research (Aaker, et al., 2007; Babbie, 2010).

4.1.1 Sample Demographics

The responders' demographics and organizational information varied into all types. The summary of demographic information of the sample is described in the Table 4.1. From 556 responses that were used for data analysis, there were 13 respondents who answered as don't know. Therefore, there were 543 responses analyzed in this thesis. Regarding the demographics, gender split was 35.7% male, 64.3% female. The majority of age levels of the respondents were 20-34 years old (74.8%) and 35-44 years old

(19.5%). For this research sample, 75.9% had earned a bachelor's degree and 24.1% had a master's degree. The majority of respondents worked for the organization for less than 6 years (52.1%) and 6-10 years (40.7%), while 7.2% of them had worked for 11-15 years. While 38.3% were managers, the rest of the respondents were their employees.

Table 4.1 Summary of Respondents' Demographic Information

Demographic information		Number	Percentage
Gender	Male	194	35.7
	Female	349	64.3
	Total	543	100.0
Age	Below 20 years old	0	0
	20-34 years old	406	74.8
	35-44 years old	106	19.5
	45-55 years old	31	5.7
	Above 55 years old	0	0
	Total	543	100.0
Education	Below Diploma	0	0
	Diploma	0	0
	Bachelor degree	412	75.9
	Master degree	131	24.1
	Total	543	100.0
Tenure	Below 6 years	283	52.1
	6-10 years	221	40.7
	11-15 years	39	7.2
	16-20 years	0	0
	Above 20 years	0	0
	Total	543	100.0
Type of employee level	Manager	208	38.3
	Employee	335	61.7
	Total	543	100.0

4.1.2 Organizational Characteristics

From sampling approach described in Chapter 3, global companies define as the organization, which mainly have foreign people as top management. This thesis focused on the organizations who are members of The Pharmaceutical Research and Manufacturers Association (PReMA), which is well-known non-profit organization representing members who are research based pharmaceutical companies innovating medicines to combat the previously incurable and to improve on existing treatments. There were 38 companies were approached for data collection. However, there were 28 companies, which the researcher got the approval for sampling approach. For Local companies, this thesis will focus on the organizations who have registered with Thai Food and Drug Administration (FDA) as manufacturers for modern drugs (medicine) who are certified by good manufacture practice (GMP). There were 15 companies were approached for data collection. There were 7 companies, which the researcher got the approval for sampling approach.

This section describes the characteristics of the organizations that respondents work for. The majority of organizations in this study were Foreign Ownership (80.8%), while 19.2% were Thai ownership. More than half of organizations (57.1%) had more than 100 employees, while 26.2% had 81-100 employees and 16.8% had 51-80 employees. A summary of respondents' organizational information is provided in Table 4.2.

Table 4.2 Summary of Respondents' Organizational Information

Organizational Information		Number	Percentage
Ownership type	Thai ownership	104	19.2
	Foreign Ownership	439	80.8
	Total	543	100.0
Number of employees	Under 21 employees	0	0
	21-50 employees	0	0
	51-80 employees	91	16.8
	81-100 employees	142	26.2
	Above 100 employees	310	57.1
	Total	543	100.0

4.2 Data Coding, Preparation and Examination

In order to ensure that data had been recorded accurately, identifying inconsistent responses, outliers and missing data were performed by researcher prior to statistical analysis. Data cleaning and screening process were done for examining the nature and quality of the data (Hair et al., 2010).

The crucial part of any multivariate analysis is examining data. The data were inspected and translated into a form suitable for further analysis, ensuring that the basic data array was complete and accurate through coding, transcribing or entering the data into a computer database; and cleaning the data for accuracy and accounting for missing responses (Hair et al., 2010), which was described in the following part.

4.2.1 Coding

A code was assigned for each question item and response in the survey by researcher before the data were entered into an SPSS statistical software spreadsheet to ensure consistency and accuracy.

A total of 59 measured items based on the SL framework and 9 items for measuring dependent variables were proposed to measure organizational sustainability in this study. Table 4.3 lists the labels of all variables for data analysis.

Remark: An asterisk (*) or a starred item refers to a reverse score/scale in the questionnaire.

Table 4.3 Legend to the Labelling of All Observable Variables

Description	SL Reference	Coding
Independent variables		
1. Everyone has good ongoing access to training and development in this organization.	Developing people	DEPE1
2. Training and development are some of the first things cut in difficult times. *		DEPE2
3. Employee representatives are involved in key strategic decisions.	Labor relations	LARE1
4. Disputes between leaders and employees are typically settled through external processes such as arbitration or the courts. *		LARE2

Table 4.3 Legend to the Labelling of All Observable Variables (cont.)

Description	SL Reference	Coding
5. If this organization had to lay people off, our leaders would support those affected in any way they could.	Staff retention	STRE1
6. Our leaders lay off people if it is necessary to achieve short term financial results. *		STRE2
7. Our organization has a formal succession planning policy in place.	Succession planning	SUPL1
8. Our organization fills many management positions with outsiders. *		SUPL2
9. Our leaders treat people with respect, consideration and integrity.	Valuing staff	VAST1
10. Our leaders are not involved in people's personal lives. *		VAST2
11. Key strategic decisions are made by the top management team, not just the most senior person - the General Manager.	CEO & top team leadership	CEOL1
12. In this organization the General Manager resolves difficult situations, not the top management team.		CEOL2
13. As far as I can see, our organization consistently behaves ethically	Ethics	ETHI1
14. I am aware that our organization has an ethical code of conduct that explains what is expected of all employees.		ETHI2
15. The consensus in this organization is that we must always act ethically no matter how tough things get.		ETHI3
16. As far as I am concerned, the ethical code of conduct of this organization is equally or more strict than PreMa (for global company) or GMP (for local company).		ETHI4
17. Our decisions in this organization, are made with the long-term in mind.	Long-term perspective	LTPE1
18. Our leaders usually focus on long-term planning and strategies (e.g. long-term investment in technologies and /or long-term resource management)		LTPE2

Table 4.3 Legend to the Labelling of All Observable Variables (cont.)

Description	SL Reference	Coding
19. People in this organization thinks and act for long-term success.		LTPE3
20. When major change is planned, the affected people are consulted and involved.	Considered organizational change	COCH1
21. Our leaders carefully plan change to ensure new processes and behaviors suit the existing culture.		COCH2
22. When major change is necessary, our leaders handle it very carefully to minimize harm.		COCH3
23. Our leaders make business decisions that are right for the organization, even if financial analysts disagree.	Financial market independence	FMIN1
24. Our leaders believe that our organization must grow, whatever the cost. *		FMIN2
25. Environmental protection is a core value of this organization that influences behavior of employees, suppliers and even customers	Environmental responsibility	ENRE1
26. This organization's environmental policies meet, but do not exceed what the law requires. *		ENRE2
27. Our leaders encourage employees to engage in social or community activities in work time.	Social responsibility	SORE1
28. In this organization, generating profits and providing jobs is considered sufficient contribution to the community. *		SORE2
29. Our leaders value others' interests, in addition to investors' needs.	Stakeholder consideration	STCO1
30. Our leaders show respect for, and work closely with, employees, customers, suppliers and other stakeholders.		STCO2
31. Other things being equal, this organization chooses suppliers based on price rather than long-standing relationships. *		STCO3
32. Our leaders have a vision that goes beyond just making as much money as possible.	Strong and shared vision	SSVI1
33. Our organizational vision energizes and guides people's work.		SSVI2

Table 4.3 Legend to the Labelling of All Observable Variables (cont.)

Description	SL Reference	Coding
34. This organization has a strong vision that everyone knows, shares and works towards.		SSVI3
35. I'm unsure what this organization's vision for the future is. *		SSVI4
36. Employees are encouraged to challenge decisions made by our leaders.	Devolved decision-making	DEDE1
37. Our leaders look for consensus when making decisions.		DEDE2
38. As employees in this organization, we have high discretion over our working lives provided we deliver the required outcomes.	Self-management	SEMA1
39. Our leaders and managers set detailed work objectives, specify the way work will be done, and monitor progress closely. *		SEMA2
40. Our organization has a strong team culture.	Team orientation	TEOR1
41. People work well in teams at all levels of this organization.		TEOR2
42. Our leaders treat employees as the organization's most valuable asset.	Enabling culture	ENCU1
43. The way things are done in this organization really engages people's hearts and minds.		ENCU2
44. This organization likes people to get together informally during work hours, to exchange information and ideas about their work.	Knowledge sharing and retention	KSRE1
45. Our organization offers many formal and informal opportunities to share information and ideas.		KSRE2
46. Our organization has processes for integrating different sources and types of knowledge		KSRE3
47. Our organization has processes for converting shared knowledge into plans of action		KSRE4
48. In this organization, we can rely on our people to keep to their word.	Trust	TRUS1
49. In this organization, people deal with each other based on an understanding that we will look after each other's best interests.		TRUS2

Table 4.3 Legend to the Labelling of All Observable Variables (cont.)

Description	SL Reference	Coding
50. Everyone here can be innovative, even if they are not employed in a research capacity.	Strategic, systemic innovation	SSIN1
51. We have systems to encourage, evaluate, track, reward and celebrate innovative ideas.		SSIN2
52. Our leaders accept that innovation contains the risk of failure.		SSIN3
53. In comparison with its competitors, this organization has become much more innovative.		SSIN4
54. I am proud to tell people that I work for this organization.	Staff engagement	STEN1
55. People give their personal best for this organization because of the excellent way in which it treats them.		STEN2
56. Supplying products and services of the highest quality is a matter of pride to our organization.	Quality	QUAL1
57. The view around here is that increasing quality, increases productivity and profits.		QUAL2
58. This organization has clear and strict standard of procedure (SOP) for quality assessment.		QUAL3
59. This organization has clear and strict standard of procedure (SOP) for ensuring product quality and management of suboptimal quality product.		QUAL4
Dependent variables		
1. How would you rate your organization's brand /image reputation relative to its competitors?	Brand reputation	SPOBR
2. How would you rate the satisfaction level of your organization's customers when compared to your competitors?	Customer satisfaction	SPOCU
3. How would you rate the financial performance / profitability of your organization compared to your competitors?	Financial performance	SPOFI
4. How would you rate the satisfaction level of your organization's shareholders when compared to your competitors?	Shareholders satisfaction	SPOSH

Table 4.3 Legend to the Labelling of All Observable Variables (cont.)

Description	SL Reference	Coding
5. How would you rate the <u>satisfaction level of your organization's suppliers</u> when compared to your competitors?	Supplier satisfaction	SPOSU
6. How would you rate the <u>satisfaction level of your organization's distributors</u> when compared to your competitors?	Distributor satisfaction	SPODI
7. How satisfied are you with your <u>work</u>?	Employee satisfaction/work	EMWO
8. Overall, how satisfied are you with your <u>organization</u>?	Employee satisfaction/organization	EMOR
9. How satisfied are you with your <u>colleagues</u>?	Employee satisfaction/ colleagues	EMCO

Source: Adapted from Suparak Suriyankietkaew (2015)

4.2.2 Data Screening and Cleaning

Data screening and cleaning is a quality screen process ensured that the raw data collected with the questionnaire met acceptable standards of being completed, legible, free of inconsistencies, completed by eligible respondents and accurate. The researcher edited and transferred raw data into a computer file using SPSS software.

The problems could be found comprise of case-related issues such as the accuracy of the data input, outliers and missing values (Hair et al., 2010). For checking outlier responses and missing values, frequencies were run for every variable using SPSS. Analysis of missing data found a low percentage of respondents with missing data because the online survey could be added criteria for pre-check that people answered all questions, however, there was "don't know" choice for people who cannot answer the question. Less than 10% of missing values is considered acceptable (Hair et al., 2010). Furthermore, concerns distribution issues such as normality, linearity and homoscedasticity were concerned as the second set of problems. Descriptive statistics and frequency distributions of each variable were performed to verify that there were no out-of-range

data, and no logically inconsistent or extreme values. More details of the distribution issues are contained in Section 4.4 (Assumption Checks of Statistical Analysis).

After having examined and cleaned the data, a total final sample of 543 valid responses employees from 35 Thai pharmaceutical company were used for further analysis.

4.3 Reliability of Measured Variables

For this thesis, measuring the reliability of the measured variables was tested by using Cronbach's Alpha and Corrected-Items Total Correlation value, which was a simple and commonly used measure (Hair et al., 2010). Cronbach's alpha coefficient at a score of over 0.7 was inspected for high internal consistency (Hair, Black, Babin, Anderson, & Tatham, 2006). Furthermore, Corrected-Items Total Correlation value was inspected for each item. The Corrected-Items Total Correlation value at over 0.3 is acceptable and should be more than 0.45 for structural equation model analysis (Field, 2009). Additionally, the pilot study could test the validity and reliability of the data collected (Saunders et al. 2009; Zumitzavan & Michie, 2015). This criteria was used for both pilot sample and real sample in this thesis.

Table 4.4 Summary of Reliability Test with Cronbach's Alpha and Corrected-Items Total Correlation

Variable	Indicator	Corrected-Items Total Correlation	Cronbach's Alpha
Developing people	DEPE1	0.659	0.794
	DEPE2	0.659	
Labor relations	LARE1	0.657	0.770
	LARE2	0.657	
Staff retention	STRE1	0.565	0.711
	STRE2	0.565	
Succession planning	SUPL1	0.677	0.806
	SUPL2	0.677	

Table 4.4 Summary of Reliability Test with Cronbach's Alpha and Corrected-Items Total Correlation (cont.)

Variable	Indicator	Corrected-Items Total Correlation	Cronbach's Alpha
Valuing staff	VAST1	0.596	0.730
	VAST2	0.596	
CEO & top team leadership	CEOL1	0.672	0.781
	CEOL2	0.672	
Ethics	ETHI1	0.781	0.881
	ETHI2	0.739	
	ETHI3	0.788	
	ETHI4	0.679	
Long-term perspective	LTPE1	0.553	0.748
	LTPE2	0.636	
	LTPE3	0.537	
Considered organizational change	COCH1	0.670	0.845
	COCH2	0.789	
	COCH3	0.706	
Financial market independence	FMIN1	0.823	0.903
	FMIN2	0.823	
Environmental responsibility	ENRE1	0.786	0.877
	ENRE2	0.786	
Social responsibility	SORE1	0.835	0.906
	SORE2	0.835	
Stakeholder consideration	STCO1	0.794	0.909
	STCO2	0.830	
	STCO3	0.830	
Strong and shared vision	SSVI1	0.913	0.953
	SSVI2	0.884	
	SSVI3	0.865	
	SSVI4	0.918	

Table 4.4 Summary of Reliability Test with Cronbach's Alpha and Corrected-Items Total Correlation (cont.)

Variable	Indicator	Corrected-Items Total Correlation	Cronbach's Alpha
Devolved decision-making	DEDE1	0.761	0.864
	DEDE2	0.761	
Self-management	SEMA1	0.760	0.858
	SEMA2	0.760	
Team orientation	TEOR1	0.634	0.776
	TEOR2	0.634	
Enabling culture	ENCU1	0.856	0.992
	ENCU2	0.856	
Knowledge sharing and retention	KSRE1	0.857	0.932
	KSRE2	0.831	
	KSRE3	0.897	
	KSRE4	0.886	
Trust	TRUS1	0.927	0.962
	TRUS2	0.927	
Strategic, systemic innovation	SSIN1	0.747	0.935
	SSIN2	0.840	
	SSIN3	0.933	
	SSIN4	0.921	
Staff engagement	STEN1	0.659	0.792
	STEN2	0.659	
Quality	QUAL1	0.923	0.956
	QUAL2	0.933	
	QUAL3	0.880	
	QUAL4	0.877	
Sustainability Performance Outcomes (SPO)	SPOBR	0.683	0.896
	SPOCU	0.710	
	SPOFI	0.777	

Table 4.4 Summary of Reliability Test with Cronbach's Alpha and Corrected-Items Total Correlation (cont.)

Variable	Indicator	Corrected-Items Total Correlation	Cronbach's Alpha
	SPOSH	0.686	
	SPOSU	0.753	
	SPODI	0.716	
Employee Satisfaction	EMWO	0.490	0.773
	EMOR	0.726	
	EMCO	0.630	

4.4 Confirmatory Factor Analysis (CFA) for each variables of constructs

The 23 constructs were analyzed for validity and reliability of each variable. Confirmatory Factor Analysis (CFA) was processed for each variables of constructs. There are several fit statistics, which are used to assess the confirmatory factor analyses (CFA). In order to evaluate the fitness of the model, this thesis employed recommended cut-offs from previous researches. The ratio of $\chi2$ (Chi-Square) to df (degrees of freedom) should be less than 3.00 (Marsh and Hocevar, 1985). Goodness of Fit (GFI) should be over 0.90 and Adjusted Goodness of Fit (AGFI) should be over 0.85 (Schumacker and Lomax, 2004). Furthermore, Root Mean Square Error of Approximation (RMSEA) should be less than 0.08 (Browne and Cudeck, 1993). The analysis illustrated that all questions from the questionnaire could explain the contruct of each variable. The confirmatory factor analysis graphical images for each construct were shown in Figure 4.1. The fitness indices summary were shown in Table 4.5.
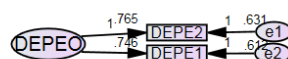
CMIN/DF=2.101, AGFI=.981, GFI=.976, RMSEA=.046

Figure 4.1 The confirmatory factor analysis graphical images for each construct

The developing people construct (DEPE) comprises of two variables, which are DEPE1 and DEPE2. Questions regarding these variables were described in table 4.3.
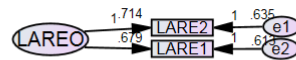
CMIN/DF=2.178, AGFI=.983, GFI=.978, RMSEA=.047

Figure 4.2 The confirmatory factor analysis of labor relations construct (LARE)

The labor relations construct (LARE) comprises of two variables, which are LARE1 and LARE2. Questions regarding these variables were described in table 4.3.
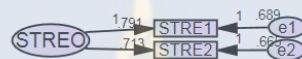
CMIN/DF=1.974, AGFI=.963, GFI=.918, RMSEA=.049

Figure 4.3 The confirmatory factor analysis of staff retention construct (STRE)

The staff retention construct (STRE) comprises of two variables, which are STRE1 and STRE2. Questions regarding these variables were described in table 4.3.

CMIN/DF=1.986, AGFI=.968, GFI=.926, RMSEA=.047

Figure 4.4 The confirmatory factor analysis of succession planning construct (SUPL)

The succession planning construct (SUPL) comprises of two variables, which are SUPL1 and SUPL2. Questions regarding these variables were described in table 4.3.

CMIN/DF=2.013, AGFI=.946, GFI=.931, RMSEA=.049

Figure 4.5 The confirmatory factor analysis of valuing staff construct (VAST)

The valuing staff construct (VAST) comprises of two variables, which are VAST1 and VAST2. Questions regarding these variables were described in table 4.3.

CMIN/DF=1.993, AGFI=.978, GFI=.967, RMSEA=.048

Figure 4.6 The confirmatory factor analysis of CEO & top team leadership construct (CEOL)

The CEO & top team leadership construct (CEOL) comprises of two variables, which are CEOL1 and CEOL2. Questions regarding these variables were described in table 4.3.

CMIN/DF=1.981, AGFI=.976, GFI=.972, RMSEA=.042

Figure 4.7 The confirmatory factor analysis of ethics construct (ETHI)

The ethics construct (ETHI) comprises of four variables, which are ETHI1, ETHI2, ETHI3 and ETHI4. Questions regarding these variables were described in table 4.3.
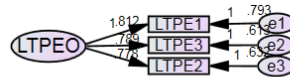
CMIN/DF=2.101, AGFI=.971, GFI=.963, RMSEA=.048

Figure 4.8 The confirmatory factor analysis of long-term perspective construct (LTPE)

The long-term perspective construct (LTPE) comprises of three variables, which are LTPE1, LTPE2 and LTPE3. Questions regarding these variables were described in table 4.3.
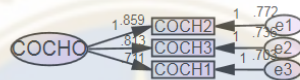
CMIN/DF=1.989, AGFI=.978, GFI=.969, RMSEA=.045

Figure 4.9 The confirmatory factor analysis of considered organizational change construct (COCH)

The considered organizational change construct (COCH) comprises of three variables, which are COCH1, COCH2 and COCH3. Questions regarding these variables were described in table 4.3.

CMIN/DF=2.014, AGFI=.941, GFI=.929, RMSEA=.049

Figure 4.10 The confirmatory factor analysis of financial market independence construct (FMIN)

The financial market independence construct (FMIN) comprises of two variables, which are FMIN1 and FMIN2. Questions regarding these variables were described in table 4.3.
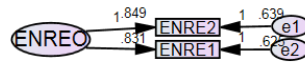
CMIN/DF=1.988, AGFI=.989, GFI=.985, RMSEA=.047

Figure 4.11 The confirmatory factor analysis of environmental responsibility construct (ENRE)

The environmental responsibility construct (ENRE) comprises of two variables, which are ENRE1 and ENRE2. Questions regarding these variables were described in table 4.3.
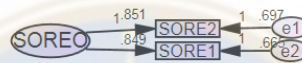
CMIN/DF=1.987, AGFI=.988, GFI=.981, RMSEA=.047

Figure 4.12 The confirmatory factor analysis of social responsibility construct (SORE)

The social responsibility construct (SORE) comprises of two variables, which are SORE1 and SORE2. Questions regarding these variables were described in table 4.3.
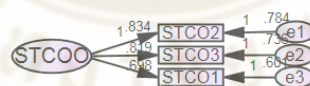
CMIN/DF=2.011, AGFI=.976, GFI=.965, RMSEA=.046

Figure 4.13 The confirmatory factor analysis of stakeholder consideration construct (STCO)

The stakeholder consideration construct (STCO) comprises of three variables, which are STCO1, STCO2 and STCO3. Questions regarding these variables were described in table 4.3.
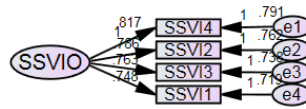
CMIN/DF=1.976, AGFI=.963, GFI=.959, RMSEA=.045

Figure 4.14 The confirmatory factor analysis of strong and shared vision construct (SSVI)

The strong and shared vision construct (SSVI) comprises of four variables, which are SSVI1, SSVI2, SSVI3 and SSVI4. Questions regarding these variables were described in table 4.3.

CMIN/DF=1.991, AGFI=.987, GFI=.979, RMSEA=.048

Figure 4.15 The confirmatory factor analysis of devolved decision-making construct (DEDE)

The devolved decision-making construct (DEDE) of two variables, which are DEDE1 and DEDE2. Questions regarding these variables were described in table 4.3.
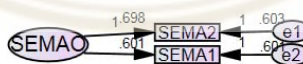
CMIN/DF=2.012, AGFI=.977, GFI=.968, RMSEA=.049

Figure 4.16 The confirmatory factor analysis of self-management construct (SEMA)

The self-management construct (SEMA) of two variables, which are SEMA1 and SEMA2. Questions regarding these variables were described in table 4.3.
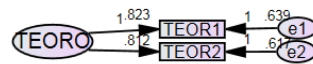
CMIN/DF=1.986, AGFI=.976, GFI=.972, RMSEA=.047

Figure 4.17 The confirmatory factor analysis of team orientation construct (TEOR)
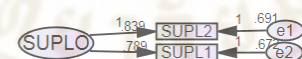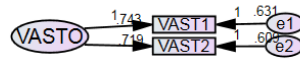
The team orientation construct (TEOR) of two variables, which are TEOR1 and TEOR2. Questions regarding these variables were described in table 4.3.
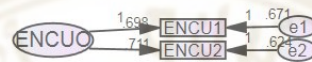
CMIN/DF=1.988, AGFI=.989, GFI=.985, RMSEA=.047

Figure 4.18 The confirmatory factor analysis of enabling culture construct (ENCU)

The enabling culture construct (ENCU) of two variables, which are ENCU1 and ENCU2. Questions regarding these variables were described in table 4.3.
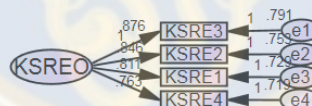
CMIN/DF=1.978, AGFI=.962, GFI=.943, RMSEA=.046

Figure 4.19 The confirmatory factor analysis of knowledge sharing and retention construct (KSRE)

The knowledge sharing and retention construct (KSRE) of four variables, which are KSRE1, KSRE2, KSRE3 and KSRE4. Questions regarding these variables were described in table 4.3.
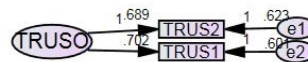
CMIN/DF=2.007, AGFI=.941, GFI=.932, RMSEA=.048

Figure 4.20 The confirmatory factor analysis of trust construct (TRUS)

The trust construct (TRUS) of two variables, which are TRUS1 and TRUS2. Questions regarding these variables were described in table 4.3.
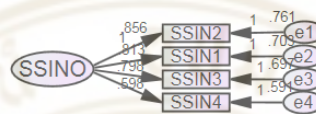
CMIN/DF=2.011, AGFI=.952, GFI=.943, RMSEA=.047

Figure 4.21 The confirmatory factor analysis of strategic, systemic innovation construct (SSIN)

The strategic, systemic innovation construct (SSIN) of four variables, which are SSIN1, SSIN2, SSIN3 and SSIN4. Questions regarding these variables were described in table 4.3.
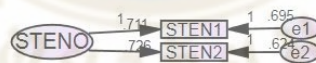
CMIN/DF=1.998, AGFI=.976, GFI=.952, RMSEA=.047

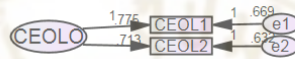**Figure 4.22 The confirmatory factor analysis of staff engagement construct (SSIN)**

The staff engagement construct (SSIN) of two variables, which are STEN1 and STEN2. Questions regarding these variables were described in table 4.3.
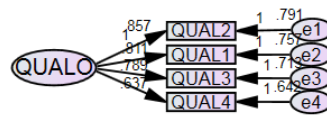
CMIN/DF=1.901, AGFI=.993, GFI=.981, RMSEA=.042

Figure 4.23 The confirmatory factor analysis of quality construct (QUAL)

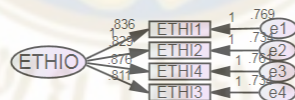The quality construct (QUAL) of four variables, which are QUAL1, QUAL2, QUAL3 and QUAL4. Questions regarding these variables were described in table 4.3.
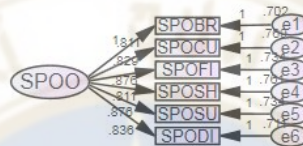
CMIN/DF=1.976, AGFI=.971, GFI=.956, RMSEA=.046

Figure 4.24 The confirmatory factor analysis of sustainability performance outcomes construct (SPO)

The sustainability performance outcomesconstruct (SPO) of five variables, which are SPOBR, SPOCU, SPOFI, SPOSU and SPODI. Questions regarding these variables were described in table 4.3.
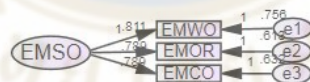
CMIN/DF=1.998, AGFI=.961, GFI=.941, RMSEA=.047

Figure 4.25 The confirmatory factor analysis of employee satisfaction construct (EMS)

The employee satisfaction construct (EMS) of three variables, which are EMQO, EMOR and EMCO. Questions regarding these variables were described in table 4.3.

Table 4.5   Summary of Constructs with Confirmatory Factor Analysis (CFA)

SL Factor	Construct	Variable	CMIN/DF	AGFI	GFI	RMSEA
Continuous people development	DEPE	DEPE1 DEPE2	2.101	0.981	0.976	0.046
Amicable labor relations	LARE	LARE1 LARE2	2.178	0.983	0.978	0.047
Long-term staff retention	STRE	STRE1 STRE2	1.974	0.963	0.918	0.049
Internal succession planning	SUPL	SUPL1 SUPL2	1.986	0.968	0.926	0.047
Valuing staff	VAST	VAST1 VAST2	2.013	0.946	0.931	0.049
CEO & top team leadership	CEOL	CEOL1 CEOL2	1.993	0.978	0.967	0.048
Ethics	ETHI	ETHI1 ETHI2 ETHI3 ETHI4	1.981	0.976	0.972	0.042
Long-term perspective	LTPE	LTPE1 LTPE2 LTPE3	2.101	0.971	0.963	0.048
Considered organizational change	COCH	COCH1 COCH2 COCH3	1.989	0.978	0.969	0.045
Financial market independence	FMIN	FMIN1 FMIN2	2.014	0.941	0.929	0.049
Environmental responsibility	ENRE	ENRE1 ENRE2	1.988	0.989	0.985	0.047
Social responsibility	SORE	SORE1 SORE2	1.987	0.988	0.981	0.047
Stakeholder consideration	STCO	STCO1 STCO2 STCO3	2.011	0.976	0.965	0.046

Table 4.5   Summary of Constructs with Confirmatory Factor Analysis (CFA) (cont.)

SL Factor	Construct	Variable	CMIN/DF	AGFI	GFI	RMSEA
Strong and shared vision	SSVI	SSVI1 SSVI2 SSVI3 SSVI4	1.976	0.963	0.959	0.045
Devolved decision-making	DEDE	DEDE1 DEDE2	1.991	0.987	0.979	0.048
Self-management	SEMA	SEMA1 SEMA2	2.012	0.977	0.968	0.049
Team orientation	TEOR	TEOR1 TEOR2	1.986	0.976	0.972	0.047
Enabling culture	ENCU	ENCU1 ENCU2	1.988	0.989	0.985	0.047
Knowledge sharing and retention	KSRE	KSRE1 KSRE2 KSRE3 KSRE4	1.978	0.962	0.943	0.046
Trust	TRUS	TRUS1 TRUS2	2.007	0.941	0.932	0.048
Strategic, systemic innovation	SSIN	SSIN1 SSIN2 SSIN3 SSIN4	2.011	0.952	0.943	0.047
Staff engagement	STEN	STEN1 STEN2	1.998	0.976	0.952	0.047
Quality	QUAL	QUAL1 QUAL2 QUAL3 QUAL4	1.901	0.993	0.981	0.042
Sustainability performance outcomes	SPO	SPOBR SPOCU SPOFI SPOSH SPOSU SPODI	1.976	0.971	0.956	0.046

Table 4.5 Summary of Constructs with Confirmatory Factor Analysis (CFA) (cont.)

SL Factor	Construct	Variable	CMIN/DF	AGFI	GFI	RMSEA
Employee satisfaction	EMS	EMWO	1.998	0.961	0.941	0.047
		EMOR				
		EMCO				

4.5 Assumption Checks of Statistical Analysis

There were several key assumptions for linear regression. In this thesis, the data was examined for normality, linearity, multicollinearity and homoscedasticity. Firstly, the relationship between the independent and dependent variables should be linear for linear regression. Moreover, it is crucial for outlier checking because linear regression is sensitive to outlier effects. Regarding normality test, skewness and kurtosis values were used for outlier checking. The acceptable range of skewness and kurtosis for normal distribution of data were inspected. The acceptable values for asymmetry and kurtosis are between -2 and +2 for proving normal univariate distribution (George & Mallery, 2010). Furthermore, the values of skewness should be between -1 and +1 as acceptable values (Tabachnick & Fidell, 2012). The summary of Normality Test with Skewness and Kurtosis were illustrated in the Table 4.6.

Table 4.6 Summary of Normality Test with Skewness and Kurtosis

Variable	Indicator	Skewness	Kurtosis
Developing people	DEPE1	-0.772	-0.440
	DEPE2	-0.863	1.022
Labor relations	LARE1	-0.200	-0.409
	LARE2	-0.077	0.942
Staff retention	STRE1	0.039	1.437
	STRE2	-0.696	1.369
Succession planning	SUPL1	-0.073	-0.367
	SUPL2	0.089	0.372

Table 4.6   Summary of Normality Test with Skewness and Kurtosis (cont.)

Variable	Indicator	Skewness	Kurtosis
Valuing staff	VAST1	-0.925	0.547
	VAST2	0.357	0.856
CEO & top team leadership	CEOL1	0.178	1.358
	CEOL2	-0.389	-0.532
Ethics	ETHI1	-0.220	-0.901
	ETHI2	-0.716	0.061
	ETHI3	0.171	-0.877
	ETHI4	-0.243	-1.201
Long-term perspective	LTPE1	0.156	-0.050
	LTPE2	-0.599	0.246
	LTPE3	-0.552	-0.170
Considered organizational change	COCH1	0.059	-0.597
	COCH2	-0.202	-0.693
	COCH3	-0.389	-0.778
Financial market independence	FMIN1	-0.077	-0.707
	FMIN2	-0.113	-1.342
Environmental responsibility	ENRE1	0.137	-0.273
	ENRE2	-0.365	-0.751
Social responsibility	SORE1	0.179	-0.499
	SORE2	-0.136	-0.804
Stakeholder consideration	STCO1	-0.191	-1.242
	STCO2	0.405	-0.497
	STCO3	0.008	-0.332
Strong and shared vision	SSVI1	-0.082	-0.714
	SSVI2	-0.695	-0.066
	SSVI3	-0.361	-0.514
	SSVI4	-0.255	-0.994
Devolved decision-making	DEDE1	0.454	-0.115
	DEDE2	-0.167	-0.684

Table 4.6   Summary of Normality Test with Skewness and Kurtosis (cont.)

Variable	Indicator	Skewness	Kurtosis
Self-management	SEMA1	-0.690	0.383
	SEMA2	-0.658	1.554
Team orientation	TEOR1	-0.255	1.312
	TEOR2	0.409	1.474
Enabling culture	ENCU1	0.658	-0.687
	ENCU2	0.244	-1.077
Knowledge sharing and retention	KSRE1	0.182	-1.265
	KSRE2	-0.004	-0.245
	KSRE3	0.062	-0.948
	KSRE4	0.077	-1.157
Trust	TRUS1	0.054	-1.122
	TRUS2	-0.012	-1.122
Strategic, systemic innovation	SSIN1	-0.175	-0.718
	SSIN2	0.032	-0.757
	SSIN3	0.171	-1.559
	SSIN4	0.127	-1.578
Staff engagement	STEN1	0.387	-1.857
	STEN2	0.058	-0.762
Quality	QUAL1	0.478	0.794
	QUAL2	0.040	-1.368
	QUAL3	0.100	-1.997
	QUAL4	-0.513	-0.628
Sustainability Performance Outcomes (SPO)	SPOBR	-0.999	-0.031
	SPOCU	-0.995	-0.044
	SPOFI	-0.343	0.239
	SPOSH	0.011	-0.115
	SPOSU	-0.088	-0.167
	SPODI	0.091	-0.247

Table 4.6   Summary of Normality Test with Skewness and Kurtosis (cont.)

Variable	Indicator	Skewness	Kurtosis
Employee satisfaction	EMWO	-0.514	-1.130
	EMOR	0.024	-0.258
	EMCO	-0.559	0.223

The linearity assumption can be examined with scatter plots. The additional assumption the linear regression analysis makes is homoscedasticity. The scatter plot is recommended method to check whether homoscedasticity is given. The scatter plot showing relationship between standardized residual and standardized predicted. If the plot comes up with a consistent pattern, the homoscedasticity was shown (Hair et al., 2010). From research framework, the regression equation was shown as below,

1. SPO = DEPE + LARE + STRE + SUPL + VAST + CEOL + ETHI + LTPE + COCH + FMIN + ENRE + SORE + STCO + SSVI + DEDE + SEMA + TEOR + ENCU + KSRE + TRUS + SSIN + STEN + QUAL

2. EMS = DEPE + LARE + STRE + SUPL + VAST + CEOL + ETHI + LTPE + COCH + FMIN + ENRE + SORE + STCO + SSVI + DEDE + SEMA + TEOR + ENCU + KSRE + TRUS + SSIN + STEN + QUAL

Lastly, linear regression assumes that there is little or no multicollinearity in the data. Multicollinearity occurs when the independent variables are not independent from each other. One of crucial independence assumptions is that the error of the mean has to be independent from the independent variables. For this thesis, multicollinearity was tested with 2 central criteria. The first value is tolerance, which is the measure for influence of one independent variable on all other independent variables. The tolerance value less than 0.1 are strong indications of multicollinearity issues. The value more than 0.3 is recommended for the multicollinearity test. The second assumption for multicollinearity is Variance Inflation Factor (VIF). VIF > 10 there is an indication for multicollinearity to be present. Therefore, this thesis will use the criteria for VIF should be less than 10 (O'brien, 2007). The result of multicollinearity test showed the tolerance values were more than 0.3 and VIF less than 10, indicating the multicollinearity of the data was acceptable.

4.6 Structural Equation Model Analysis (SEM) and Confirmatory Factor Analysis (CFA)

This thesis employed Structural Equation Modeling (SEM) to provide a comprehensive method for testing of theoretical models (Pugesek, Tomer, & von Eye, 2003). SEM can assess various regressions and allow variables to be classified as both independent and dependent within the same model (Schumacker & Lomax, 2004). Additionally, it provides a confirmatory approach to data analysis. The justification of the statistical anlysis was explained in the Chapter 3.

In order to assess a measurement model, the factor loading for each item and the fitness indexes for the construct need to be examined. The low factor loading items result in poor fitness indexes for the construct and should be eliminated from the model. After assess the model, there were 4 items deleted due to unacceptable factor loading, include ETHI3, ETHI4, SSIN3 and SSIN4.

Furthermore, the Modification Indices (MI), indicating the correlation between a pair of items in a measurement model, were obtained. High MI refers to the superfluous items. There were several pair of items showing high MI, they were adjusted by drawing covariance. After model adjustment until it was absolute fit, the drew covariance within the same construct including Knowledge sharing and retention (KSRE), Quality (QUAL), Strategic, systemic innovation (SSIN), Ethics (ETHI), Strong and shared vision (SSVI), Sustainability Performance Outcomes (SPO), as well as across construct comprising of Long-term perspective (LTPE) with Considered organizational change (COCH) and Stakeholder consideration (STCO).

In order to evaluate the fitness of the model, there are three model fit categories namely absolute fit, incremental fit, and parsimonious fit. Several Fitness Indexes for each level of acceptance are listed below,

- Absolute fit: Chi-square; P > 0.05, RMSEA < 0.08, GFI > 0.90
- Incremental fit: AGFI > 0.90, CFI > 0.90, TLI > 0.90, NFI > 0.90
- Parsimonious fit: Chi-square/df < 5.0

Hair et al. (1995, 2010) and Holmes-Smith (2006) recommend that at least one fitness index from each category of model fit can be used.

There are several fit statistics, which are used to assess the confirmatory factor analyses (CFA) and structural equation models (SEM). For this thesis, recommended cut-offs that indicate a good fit are listed in the Table 4.7. After all adjustment for model fitness, the structural equation model is proposed in Figure 4.2 and the fitness indexes are demonstrated in Table 4.8. Summary of path coefficient, standard errors and t-values is illustrated in Table 4.9 and summary of direct effect in path analysis illustrating effect of sustainable leadership factors on Sustainability Performance Outcomes (SPO) and employee satisfaction (EMS) is explained in Table 4.10.

Table 4.7 The Fitness Indexes for the model in this thesis

Measure	Name	Description	Cut-off for good fit	Reference
X2/df	Ratio of $\chi 2$ (Chi-Square) to df (degrees of freedom)	A model demonstrates reasonable fit if the statistic adjusted by its degrees of freedom is acceptable	<3.00	Marsh and Hocevar (1985)
GFI	Goodness of Fit	GFI is the proportion of variance accounted for by the estimated population covariance. Analogous to R2.	>0.90	Schumacker and Lomax, 2004
AGFI	Adjusted Goodness of Fit	AGFI favors parsimony.	>0.85	Schumacker and Lomax, 2004
RMSEA	Root Mean Square Error of Approximation	A parsimony-adjusted index. Values closer to 0 represent a good fit.	<0.08	Browne and Cudeck (1993)

Figure 4.26 **The structural equation model of sustainable leadership in healthcare organizations in Thailand**

Table 4.8 The Fitness Indexes Assessment for the Structural Model

Name of index	Index value	Comments
X2/df	1.872	The required level is achieved
GFI	0.942	The required level is achieved
AGFI	0.903	The required level is achieved
RMSEA	0.040	The required level is achieved

Table 4.9 Summary of path coefficient, standard errors and t-values

Path diagram			Path coefficient	Standard errors	t-values
DEPE	→	DEPE1	0.756	-	-
	→	DEPE2	0.733	0.014	5.379
LARE	→	LARE1	0.759	-	-
	→	LARE2	0.742	0.012	9.094
STRE	→	STRE1	0.717	-	-
	→	STRE2	1.632	0.087	11.287
SUPL	→	SUPL1	1.140	-	-
	→	SUPL2	0.732	0.055	14.478
VAST	→	VAST1	0.852	-	-
	→	VAST2	0.759	0.073	14.108
CEOL	→	CEOL1	0.774	-	-
	→	CEOL2	1.060	0.060	15.974
ETHI	→	ETHI1	0.791	-	-
	→	ETHI2	0.909	0.063	11.373
LTPE	→	LTPE1	0.766	-	-
	→	LTPE2	0.740	0.069	14.807
	→	LTPE3	0.714	0.072	14.232
COCH	→	COCH1	0.727	-	-
	→	COCH2	0.944	0.042	14.579
	→	COCH3	0.726	0.038	16.612
FMIN	→	FMIN1	0.808	-	-
	→	FMIN2	0.786	0.095	11.185

Table 4.9 Summary of path coefficient, standard errors and t-values (cont.)

Path diagram			Path coefficient	Standard errors	t-values
ENRE	→	ENRE1	0.821	-	-
	→	ENRE2	0.801	0.082	12.344
SORE	→	SORE1	0.861	-	-
	→	SORE2	0.732	0.128	1.936
STCO	→	STCO1	0.781	-	-
	→	STCO2	0.910	0.044	13.501
	→	STCO3	0.808	0.048	18.316
SSVI	→	SSVI1	0.907	-	-
	→	SSVI2	0.782	0.09	12.828
	→	SSVI3	0.706	0.099	9.311
	→	SSVI4	0.866	0.104	9.58
DEDE	→	DEDE1	0.878	-	-
	→	DEDE2	0.681	0.157	8.424
SEMA	→	SEMA1	0.737	-	-
	→	SEMA2	0.799	0.184	5.778
TEOR	→	TEOR1	0.898	-	-
	→	TEOR2	0.720	0.115	10.455
ENCU	→	ENCU1	0.779	-	-
	→	ENCU2	0.714	0.105	8.329
KSRE	→	KSRE1	0.979	-	-
	→	KSRE2	0.722	0.167	7.279
	→	KSRE3	1.007	0.118	6.153
	→	KSRE4	1.343	0.108	5.387
TRUS	→	TRUS1	0.750	-	-
	→	TRUS2	0.714	0.153	5.94
SSIN	→	SSIN1	0.812	-	-
	→	SSIN2	0.937	0.095	10.458
STEN	→	STEN1	0.755	-	-
	→	STEN2	0.727	0.115	7.233

Table 4.9 Summary of path coefficient, standard errors and t-values (cont.)

Path diagram			Path coefficient	Standard errors	t-values
QUAL	→	QUAL1	0.706	-	-
	→	QUAL2	0.709	0.046	13.33
	→	QUAL3	1.324	0.084	12.778
	→	QUAL4	1.836	0.044	12.549
SPO	→	SPOBR	0.972	-	-
	→	SPOCU	0.995	0.017	58.957
	→	SPOFI	0.730	0.057	13.727
	→	SPOSH	0.657	0.057	17.756
	→	SPOSU	0.778	0.063	11.683
	→	SPODI	0.712	0.066	10.211
EMS	→	EMWO	0.779	-	-
	→	EMOR	0.977	0.038	18.699
	→	EMCO	0.773	0.033	13.598

Table 4.10 Summary of direct effect in path analysis illustrating effect of sustainable leadership factors on Sustainability Performance Outcomes (SPO) and employee satisfaction (EMS)

Dependent variable\	Direct Effect	
Independent variable	SPO	EMS
DEPE	0.113*	0.457**
LARE	0.208*	0.356**
STRE	0.161*	0.148*
SUPL	0.173*	0.261**
VAST	0.318**	0.211**
CEOL	0.128*	0.201*
ETHI	0.567**	0.375**
LTPE	0.297**	0.275**
COCH	0.183*	0.401**
FMIN	0.207*	0.177*

Table 4.10 Summary of direct effect in path analysis illustrating effect of sustainable leadership factors on Sustainability Performance Outcomes (SPO) and employee satisfaction (EMS) (cont.)

Dependent variable\ Independent variable	Direct Effect	
	SPO	EMS
NRE	0.225*	0.059
SORE	0.025	0.069
STCO	0.181*	0.206*
SSVI	0.149*	0.141*
DEDE	0.208*	0.413**
SEMA	0.284**	0.222**
TEOR	0.182*	0.152*
ENCU	0.229**	0.246**
KSRE	0.457**	0.529**
TRUS	0.174*	0.132*
SSIN	0.245**	0.248**
STEN	0.245**	0.208**
QUAL	0.516**	0.465**
R² (squared multiple correlations)	0.523	0.477

*Statistical significant at 0.05 (1.960≤t-values≤2.576)

**Statistical significant at 0.01 (t-values≥2.576)

4.6.1 Structural Equation Model Analysis (SEM) for Sustainability Performance Outcomes (SPO) as a dependent variable

Structural Equation Modeling (SEM) was analyzed separately for each dependent variable. In this section, the measurement model and structural model for the first dependent variable, which is Sustainability Performance Outcomes (SPO), will be explained. The structural model demonstrated the inter-relationships between constructs in the research, which are assembled into the research model based on the hypothesis that was stated in the theoretical framework. Confirmatory Factor Analysis (CFA) was processed to address the issues of construct validity and reliability as same as the full

Structural Equation Modeling (SEM) of two dependent variables (Schumacker and Lomax, 2004). For Confirmatory Factor Analysis (CFA), the fitness indexes were met acceptance criteria, which employed the same threshold with the full Structural Equation Modeling (SEM). For other assessment for each element in a measurement model, for example the factor loading or Modification Indices (MI), was proceeded similarly to the main SEM. For this thesis, recommended cut-offs that indicate a good fit are listed in the Table 4.7. After all adjustment for model fitness, the structural equation model is proposed in Figure 4.2.1 and the fitness indexes are demonstrated in Table 4.11. Ratio of χ^2 (Chi-Square) to df (degrees of freedom) was 1.981. Goodness of Fit and Adjusted Goodness of Fit were 0.907 and 0.891 respectively. Root Mean Square Error of Approximation was 0.051. All fitness indexes were met the acceptance criteria for SEM.

Table 4.11 The Fitness Indexes Assessment for the Structural Model (Sustainability Performance Outcomes (SPO) as a dependent variable)

Name of index	Index value	Comments
X2/df	1.981	The required level is achieved
GFI	0.907	The required level is achieved
AGFI	0.891	The required level is achieved
RMSEA	0.051	The required level is achieved
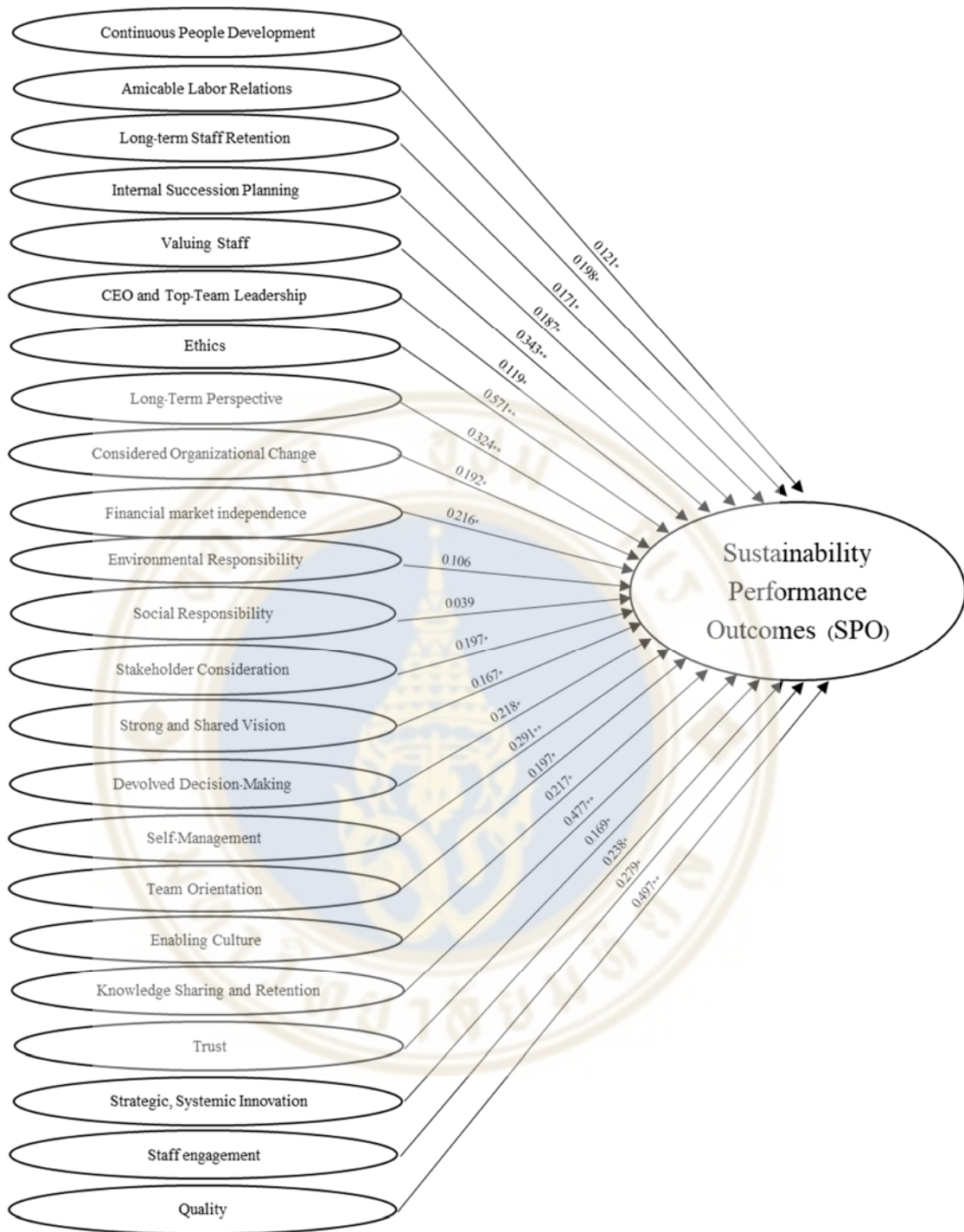
*Statistical significant at 0.05, **Statistical significant at 0.01

Figure 4.27 The structural equation model of sustainable leadership in healthcare organizations in Thailand (Sustainability Performance Outcomes (SPO) as a dependent variable)

4.6.2 Structural Equation Model Analysis (SEM) for employee satisfaction (EMS) as a dependent variable

Structural Equation Modeling (SEM) was analyzed separately for each dependent variable. In this section, the measurement model and structural model for the first dependent variable, which is employee satisfaction (EMS), will be explained. The structural model demonstrated the inter-relationships between constructs in the research, which are assembled into the research model based on the hypothesis that was stated in the theoretical framework. Confirmatory Factor Analysis (CFA) was processed to address the issues of construct validity and reliability as same as the full Structural Equation Modeling (SEM) of two dependent variables (Schumacker and Lomax, 2004). For Confirmatory Factor Analysis (CFA), the fitness indexes were met acceptance criteria, which employed the same threshold with the full Structural Equation Modeling (SEM). For other assessment for each element in a measurement model, for example the factor loading or Modification Indices (MI), was proceeded similarly to the main SEM. For this thesis, recommended cut-offs that indicate a good fit are listed in the Table 4.7. After all adjustment for model fitness, the structural equation model is proposed in Figure 4.2.2 and the fitness indexes are demonstrated in Table 4.12. Ratio of $\chi2$ (Chi-Square) to df (degrees of freedom) was 1.988. Goodness of Fit and Adjusted Goodness of Fit were 0.903 and 0.889 respectively. Root Mean Square Error of Approximation was 0.062. All fitness indexes were met the acceptance criteria for SEM.

Table 4.12   The Fitness Indexes Assessment for the Structural Model (employee satisfaction (EMS) as a dependent variable)

Name of index	Index value	Comments
X2/df	1.988	The required level is achieved
GFI	0.903	The required level is achieved
AGFI	0.889	The required level is achieved
RMSEA	0.062	The required level is achieved
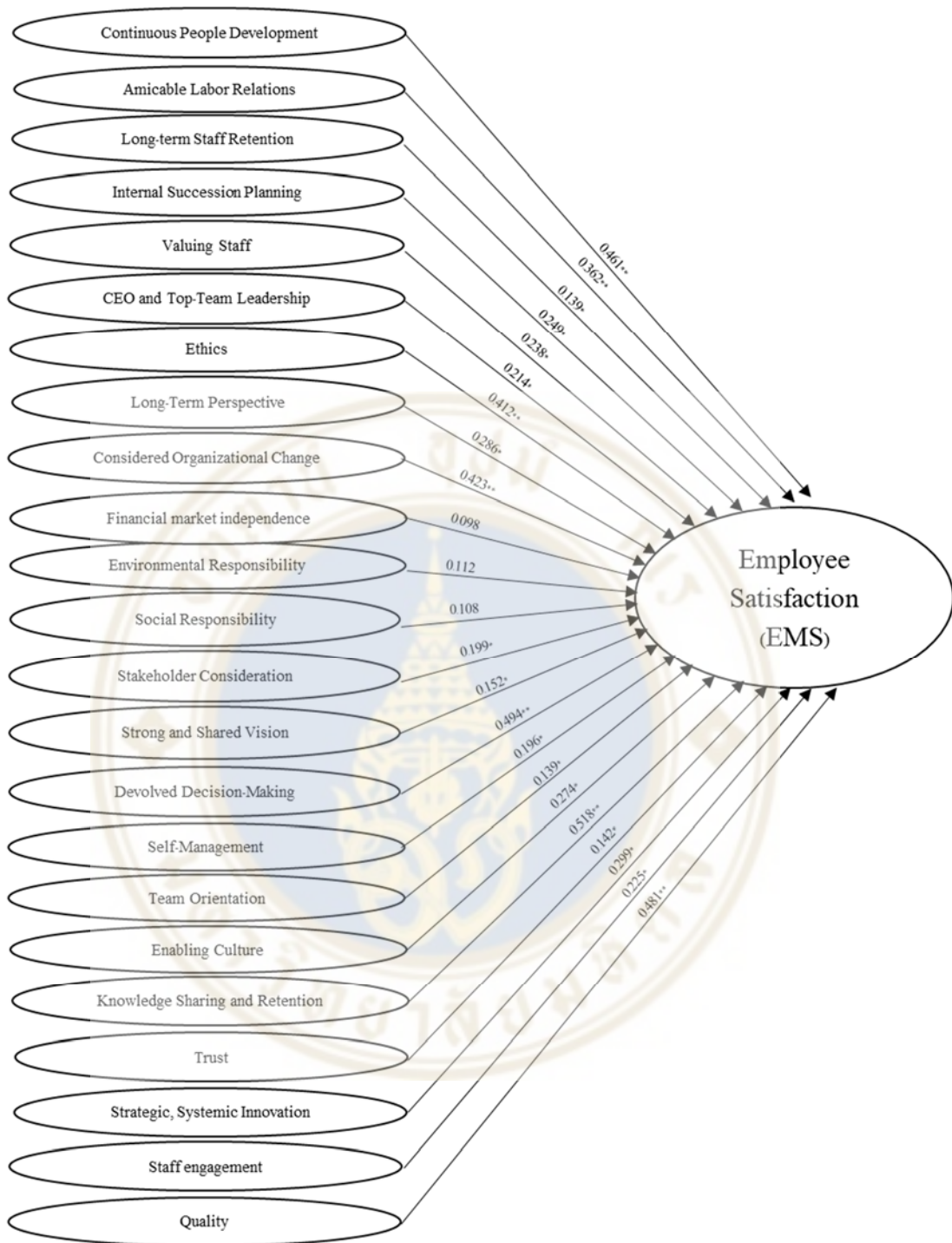
*Statistical significant at 0.05, **Statistical significant at 0.01

Figure 4.28 The structural equation model of sustainable leadership in healthcare organizations in Thailand (employee satisfaction (EMS) as a dependent variable)

4.7 Testing Research Model and Hypotheses

This section discusses an emerging research model derived from the Structural Equation Model Analysis (SEM) and Confirmatory Factor Analysis (CFA). Additional new hypotheses are also developed the research model.

4.7.1 Proposed Structural Equation Model

After all adjustment for model fitness, the structural equation model is proposed in Figure 4.2. In the research model, there was direct effect in path analysis which effect on 23 sustainable leadership factors on Sustainability Performance Outcomes (SPO) and employee satisfaction (EMS). The independent variables includes 23 sustainable leadership factors and dependent variables are Sustainability Performance Outcomes (SPO) and employee satisfaction (EMS).

4.7.2 Hypothesis Testing

Regarding the results of the Structural Equation Model Analysis (SEM) and Confirmatory Factor Analysis (CFA), two sets of new hypotheses supplementing the H1 and H2 emerged. In addition to the main hypothesis, it is presumed that there is a positive predictive relationship between 23 SL factors and perceived Sustainability Performance Outcomes (SPO) and employee satisfaction in in Thai pharmaceutical organizations. The set of H1 and H2 is linked to all independent variables as follows:

H1: There is a positive predictive relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in the context of Thai pharmaceutical industry.

H1.1: There is a positive predictive relationship between Continuous People Development and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Continuous People Development was coded as DEPE. The result showed that DEPE has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between DEPE and SPO (path coefficient = 0.113). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.1) was supported by the empirical evidence in Thai pharmaceutical

organizations. These results indicate that developing people continuously promotes sustainability performance outcomes.

H1.2: There is a positive predictive relationship between Amicable Labor Relations and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Amicable Labor Relations was coded as LARE. The result showed that LARE has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between LARE and SPO (path coefficient = 0.208). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.2) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that amicable labor relations promotes sustainability performance outcomes.

H1.3: There is a positive predictive relationship between Long-term Staff Retention and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Long-term Staff Retention was coded as STRE. The result showed that STRE has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between STRE and SPO (path coefficient = 0.161). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.3) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that long-term staff retention promotes sustainability performance outcomes.

H1.4: There is a positive predictive relationship between Internal Succession Planning and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Internal Succession Planning was coded as SUPL. The result showed that SUPL has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between SUPL and SPO (path coefficient = 0.073). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.4) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that internal succession planning promotes sustainability performance outcomes.

H1.5: There is a positive predictive relationship between Valuing Staff and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Valuing Staff was coded as VAST. The result showed that VAST has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between VAST and SPO (path coefficient = 0.318). The relationship was statistically significant at 0.01. Hence, the hypothesis (H1.5) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that valuing staff promotes sustainability performance outcomes.

H1.6: There is a positive predictive relationship between CEO and Top-Team Leadership and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The CEO and Top-Team Leadership was coded as CEOL. The result showed that CEOL has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between CEOL and SPO (path coefficient = 0.128). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.6) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that CEO and Top-Team Leadership promotes sustainability performance outcomes.

H1.7: There is a positive predictive relationship between Ethics and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Ethics was coded as ETHI. The result showed that ETHI has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between ETHI and SPO (path coefficient = 0.567). The relationship was statistically significant at 0.01. Hence, the hypothesis (H1.7) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Ethics promotes sustainability performance outcomes.

H1.8: There is a positive predictive relationship between Long-Term Perspective and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Long-Term Perspective was coded as LTPE. The result showed that LTPE has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between LTPE and SPO (path

coefficient = 0.297). The relationship was statistically significant at 0.01. Hence, the hypothesis (H1.8) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Long-Term Perspective promotes sustainability performance outcomes.

H1.9: There is a positive predictive relationship between Considered Organizational Change and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Considered Organizational Change was coded as COCH. The result showed that COCH has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between COCH and SPO (path coefficient = 0.183). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.9) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Considered Organizational Change promotes sustainability performance outcomes.

H1.10: There is a positive predictive relationship between Financial Market Independence and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Financial Market Independence was coded as FMIN. The result showed that FMIN has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between FMIN and SPO (path coefficient = 0.207). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.10) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Financial Market Independence promotes sustainability performance outcomes.

H1.11: There is a positive predictive relationship between Environmental Responsibility and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Environmental Responsibility was coded as ENRE. The result showed that ENRE has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between ENRE and SPO (path coefficient = 0.225). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.11) was supported by the empirical evidence in Thai pharmaceutical

organizations. These results indicate that Environmental Responsibility promotes sustainability performance outcomes.

H1.12: There is a positive predictive relationship between Social Responsibility and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Social Responsibility was coded as SORE. The result showed that SORE has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between SORE and SPO (path coefficient = 0.025). The relationship was not statistically significant. Hence, the hypothesis (H1.12) was not supported by the empirical evidence in Thai pharmaceutical organizations. Social Responsibility relationship with sustainability performance outcomes might need more investigation.

H1.13: There is a positive predictive relationship between Stakeholder Approach and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Stakeholder Approach was coded as STCO. The result showed that STCO has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between STCO and SPO (path coefficient = 0.181). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.13) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Stakeholder Approach promotes sustainability performance outcomes.

H1.14: There is a positive predictive relationship between Strong and Shared Vision and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Strong and Shared Vision was coded as SSVI. The result showed that SSVI has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between SSVI and SPO (path coefficient = 0.149). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.14) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Strong and Shared Vision promotes sustainability performance outcomes.

H1.15: There is a positive predictive relationship between Devolved and Consensual Decision-Making and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Devolved and Consensual Decision-Making was coded as DEDE. The result showed that DEDE has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between DEDE and SPO (path coefficient = 0.208). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.15) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Devolved and Consensual Decision-Making promotes sustainability performance outcomes.

H1.16: There is a positive predictive relationship between Self-Management and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Self-Management was coded as SEMA. The result showed that SEMA has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between SEMA and SPO (path coefficient = 0.284). The relationship was statistically significant at 0.01. Hence, the hypothesis (H1.16) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Self-Management promotes sustainability performance outcomes.

H1.17: There is a positive predictive relationship between Team Orientation and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Team Orientation was coded as TEOR. The result showed that TEOR has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between TEOR and SPO (path coefficient = 0.182). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.17) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Team Orientation promotes sustainability performance outcomes.

H1.18: There is a positive predictive relationship between Enabling Culture and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Enabling Culture was coded as ENCU. The result showed that ENCU has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between ENCU and SPO (path coefficient = 0.229). The relationship was statistically significant at 0.01. Hence, the hypothesis (H1.18) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Enabling Culture promotes sustainability performance outcomes.

H1.19: There is a positive predictive relationship between Knowledge Retention and Sharing and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Knowledge Retention was coded as KSRE. The result showed that KSRE has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between KSRE and SPO (path coefficient = 0.457). The relationship was statistically significant at 0.01. Hence, the hypothesis (H1.19) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Knowledge Retention promotes sustainability performance outcomes.

H1.20: There is a positive predictive relationship between Trust and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Trust was coded as TRUS. The result showed that TRUS has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between TRUS and SPO (path coefficient = 0.174). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.20) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Trust promotes sustainability performance outcomes.

H1.21: There is a positive predictive relationship between Strategic, Systemic Innovation and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Strategic, Systemic Innovation was coded as SSIN. The result showed that SSIN has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between SSIN and SPO (path coefficient = 0.245). The relationship was statistically significant at 0.01. Hence, the hypothesis (H1.21) was supported by the empirical evidence in Thai pharmaceutical

organizations. These results indicate that Strategic, Systemic Innovation promotes sustainability performance outcomes.

H1.22: There is a positive predictive relationship between Staff Engagement and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Staff Engagement was coded as STEN. The result showed that STEN has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between STEN and SPO (path coefficient = 0.245). The relationship was statistically significant at 0.01. Hence, the hypothesis (H1.22) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Staff Engagement promotes sustainability performance outcomes.

H1.23: There is a positive predictive relationship between Quality and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.

The Quality was coded as QUAL. The result showed that QUAL has a direct effect on perceived Sustainability Performance Outcomes (SPO). The path coefficient indicates a positive relationship between QUAL and SPO (path coefficient = 0.516). The relationship was statistically significant at 0.01. Hence, the hypothesis (H1.23) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Quality promotes sustainability performance outcomes.

H2: There is a positive predictive relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organizations.

H2.1: There is a positive predictive relationship between Continuous People Development and perceived employee satisfaction in Thai pharmaceutical organizations.

The Continuous People Development was coded as DEPE. The result showed that DEPE has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between DEPE and EMS (path coefficient = 0.457). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.1) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that developing people continuously promotes employee satisfaction (EMS).

H2.2: There is a positive predictive relationship between Amicable Labor Relations and perceived employee satisfaction in Thai pharmaceutical organizations.

The Amicable Labor Relations was coded as LARE. The result showed that LARE has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between LARE and EMS (path coefficient = 0.356). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.2) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that amicable labor relations promotes employee satisfaction (EMS).

H2.3: There is a positive predictive relationship between Long-term Staff Retention and perceived employee satisfaction in Thai pharmaceutical organizations.

The Long-term Staff Retention was coded as STRE. The result showed that STRE has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between STRE and EMS (path coefficient = 0.048). The relationship was statistically significant at 0.05. Hence, the hypothesis (H2.3) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that long-term staff retention promotes employee satisfaction (EMS).

H2.4: There is a positive predictive relationship between Internal Succession Planning and perceived employee satisfaction in Thai pharmaceutical organizations.

The Internal Succession Planning was coded as SUPL. The result showed that SUPL has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between SUPL and EMS (path coefficient = 0.261). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.4) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that internal succession planning promotes employee satisfaction (EMS).

H2.5: There is a positive predictive relationship between Valuing staff and perceived employee satisfaction in Thai pharmaceutical organizations.

The Valuing Staff was coded as VAST. The result showed that VAST has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between VAST and EMS (path coefficient = 0211). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.5) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that valuing staff promotes employee satisfaction (EMS).

H2.6: There is a positive predictive relationship between CEO and Top-Team Leadership and perceived employee satisfaction in Thai pharmaceutical organizations.

The CEO and Top-Team Leadership was coded as CEOL. The result showed that CEOL has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between CEOL and EMS (path coefficient = 0.201). The relationship was statistically significant at 0.05. Hence, the hypothesis (H2.6) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that CEO and Top-Team Leadership promotes employee satisfaction (EMS).

H2.7: There is a positive predictive relationship between Ethics and perceived employee satisfaction in Thai pharmaceutical organizations.

The Ethics was coded as ETHI. The result showed that ETHI has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between ETHI and EMS (path coefficient = 0.375). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.7) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Ethics promotes employee satisfaction (EMS).

H2.8: There is a positive predictive relationship between Long-Term Perspective and perceived employee satisfaction in Thai pharmaceutical organizations.

The Long-Term Perspective was coded as LTPE. The result showed that LTPE has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between LTPE and EMS (path coefficient = 0.275). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.8) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Long-Term Perspective promotes employee satisfaction (EMS).

H2.9: There is a positive predictive relationship between Considered Organizational Change and perceived employee satisfaction in Thai pharmaceutical organizations.

The Considered Organizational Change was coded as COCH. The result showed that COCH has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between COCH and EMS (path coefficient = 0.401). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.9) was supported by the empirical evidence in Thai pharmaceutical

organizations. These results indicate that Considered Organizational Change promotes employee satisfaction (EMS).

H2.10: There is a positive predictive relationship between Financial Market Independence and perceived employee satisfaction in Thai pharmaceutical organizations.

The Financial Market Independence was coded as FMIN. The result showed that FMIN has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between FMIN and EMS (path coefficient = 0.077). The relationship was statistically significant at 0.05. Hence, the hypothesis (H2.10) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Financial Market Independence promotes employee satisfaction (EMS).

H2.11: There is a positive predictive relationship between Environmental Responsibility and perceived employee satisfaction in Thai pharmaceutical organizations.

The Environmental Responsibility was coded as ENRE. The result showed that ENRE has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between ENRE and EMS (path coefficient = 0.059). The relationship was not statistically significant. Hence, the hypothesis (H2.11) was not supported by the empirical evidence in Thai pharmaceutical organizations. Environmental Responsibility relationship with employee satisfaction (EMS) might need more investigation.

H2.12: There is a positive predictive relationship between Social Responsibility and perceived employee satisfaction in Thai pharmaceutical organizations.

The Social Responsibility was coded as SORE. The result showed that SORE has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between SORE and EMS (path coefficient = 0.069). The relationship was not statistically significant. Hence, the hypothesis (H2.12) was not supported by the empirical evidence in Thai pharmaceutical organizations. Social Responsibility relationship with employee satisfaction (EMS) might need more investigation.

H2.13: There is a positive predictive relationship between Stakeholder Approach and perceived employee satisfaction in Thai pharmaceutical organizations.

The Stakeholder Approach was coded as STCO. The result showed that STCO has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between STCO and EMS (path coefficient = 0.206).

The relationship was statistically significant at 0.05. Hence, the hypothesis (H2.13) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Stakeholder Approach promotes employee satisfaction (EMS).

H2.14: There is a positive predictive relationship between Strong and Shared Vision and perceived employee satisfaction in Thai pharmaceutical organizations.

The Strong and Shared Vision was coded as SSVI. The result showed that SSVI has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between SSVI and EMS (path coefficient = 0.141). The relationship was statistically significant at 0.05. Hence, the hypothesis (H2.14) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Strong and Shared Vision promotes employee satisfaction (EMS).

H2.15: There is a positive predictive relationship between Devolved and Consensual Decision-Making and perceived employee satisfaction in Thai pharmaceutical organizations.

The Devolved and Consensual Decision-Making was coded as DEDE. The result showed that DEDE has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between DEDE and EMS (path coefficient = 0.413). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.15) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Devolved and Consensual Decision-Making promotes employee satisfaction (EMS).

H2.16: There is a positive predictive relationship between Self-Management and perceived employee satisfaction in Thai pharmaceutical organizations.

The Self-Management was coded as SEMA. The result showed that SEMA has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between SEMA and EMS (path coefficient = 0.222). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.16) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Self-Management promotes employee satisfaction (EMS).

H2.17: There is a positive predictive relationship between Team Orientation and perceived employee satisfaction in Thai pharmaceutical organizations.

The Team Orientation was coded as TEOR. The result showed that TEOR has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between TEOR and EMS (path coefficient = 0.152). The relationship was statistically significant at 0.05. Hence, the hypothesis (H2.17) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Team Orientation promotes employee satisfaction (EMS).

H2.18: There is a positive predictive relationship between Enabling Culture and perceived employee satisfaction in Thai pharmaceutical organizations.

The Enabling Culture was coded as ENCU. The result showed that ENCU has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between ENCU and EMS (path coefficient = 0.246). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.18) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Enabling Culture promotes employee satisfaction (EMS).

H2.19: There is a positive predictive relationship between Knowledge Retention and Sharing and perceived employee satisfaction in Thai pharmaceutical organizations.

The Knowledge Retention was coded as KSRE. The result showed that KSRE has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between KSRE and EMS (path coefficient = 0.529). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.19) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Knowledge Retention promotes employee satisfaction (EMS).

H2.20: There is a positive predictive relationship between Trust and perceived employee satisfaction in Thai pharmaceutical organizations.

The Trust was coded as TRUS. The result showed that TRUS has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between TRUS and EMS (path coefficient = 0.132). The relationship was statistically significant at 0.05. Hence, the hypothesis (H1.20) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Trust promotes employee satisfaction (EMS).

H2.21: There is a positive predictive relationship between Strategic, Systemic Innovation and perceived employee satisfaction in Thai pharmaceutical organizations.

The Strategic, Systemic Innovation was coded as SSIN. The result showed that SSIN has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between SSIN and EMS (path coefficient = 0.248). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.21) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Strategic, Systemic Innovation promotes employee satisfaction (EMS).

H2.22: There is a positive predictive relationship between Staff Engagement and perceived employee satisfaction in Thai pharmaceutical organizations.

The Staff Engagement was coded as STEN. The result showed that STEN has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between STEN and EMS (path coefficient = 0.208). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.22) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Staff Engagement promotes employee satisfaction (EMS).

H2.23: There is a positive predictive relationship between Quality and perceived employee satisfaction in Thai pharmaceutical organizations.

The Quality was coded as QUAL. The result showed that QUAL has a direct effect on perceived employee satisfaction (EMS). The path coefficient indicates a positive relationship between QUAL and EMS (path coefficient = 0.465). The relationship was statistically significant at 0.01. Hence, the hypothesis (H2.23) was supported by the empirical evidence in Thai pharmaceutical organizations. These results indicate that Quality promotes employee satisfaction (EMS).

The analysis shows the positive direct effects of sustainable leadership factors on sustainability organizational performance (SPO) and employee satisfaction (EMS). For SPO, the significant effects were shown in all sustainable leadership factors excepted for SORE. While the direct effect of all exogenous constructs significantly affected on EMS with the exception for ENRE and SORE.

The value of coefficient of determination R^2 of SPO and EMS is 0.523 and 0.477 respectively. The figure indicates the contribution of exogenous constructs, which

showed significant effect, in estimating the endogenous construct SPO is 52.3%, as well as, in estimating the endogenous construct EMS 47.7%.

CHAPTER V
DISCUSSION AND IMPLICATIONS

In this chapter, the results of this study are interpreted, discussed and concluded from the hypothesis-testing in Chapter 4. Firstly, overall research findings are described and followed by interpretations of detailed research findings. The last part focuses on empirical and managerial implications of the findings.

5.1 Overall Research Findings

This thesis is intent to address these challenges and gaps in previous literatures and attempts to further expand current understanding and empirical evidence for underlying leadership and management practices derived from the Sustainable Leadership (SL) (Avery & Bergsteiner's, 2010, 2012) framework influencing to sustainability performance outcomes (SPO), which include brand and reputation, customer satisfaction, financial performance long-term value for multiple stakeholders and long-term shareholder value, and the employee satisfaction in pharmaceutical organizations among Thai context, as explained in Chapter 2.

According to the previous literature, various SL practices effect differently to organizational performance and sustainability. Nevertheless, an examination of their relationships between various leadership and management factors and SPO is still underdeveloped. Thus, this thesis empirically examines those relationships derived from the SL framework and the SPO which tailored for pharmaceutical industry across Thai healthcare organizations, specifically for pharmaceutical organizations. The objective of this thesis is to empirically examine which SL factors significantly affect perceived Sustainability Performance Outcomes (SPO) and employee satisfaction in Thai pharmaceutical organizations as well as provide confirmation of the general validity of the structural equation model. The specific research questions (RQ) in this thesis are:

RQ1: What SL factors positively predict relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations?

RQ2: What SL factors positively predict relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organizations?

Regarding investigation of the relevant existing literature for answering the research questions which are explained in Chapter 2, this thesis will emphasize on sustainable leadership approach and management paradigms of healthcare industry, specifically in pharmaceutical organizations in Thailand, and impact on organizational performance in the long term. There are two hypotheses examined. The first hypothesis (H1) investigates whether there is a positive predictive relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations. The second hypothesis (H2) investigates whether there is a positive predictive relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organizations.

To conclude, all research questions and hypotheses have been answered in this study as formerly described, thereby meeting its research objectives. This thesis would provide more understanding and empirical evidence for the explication of those challenges mentioned in the research background and problems. Furthermore, the research questions and objectives are designed with the regard of addressing gaps in previous literatures. The study would greatly contribute to the existing literature by helping prioritize leadership approach and management and the association and impact on sustainability of organization, which has been significantly emphasized by global and individual concern.

5.2 Interpretations of Research Findings

This section identifies and interprets research findings, as well as connects them to the research questions and relevant hypotheses. From Chapter 4, which describes several multivariate techniques and SPSS software for assess the data. The research findings from the empirical investigation is analyzed in this part.

The research finding relates to the research questions and hypotheses. Using Structural Equation Modeling (SEM) to investigate the relationship between each construct including SL factors, perceived Sustainability Performance Outcomes (SPO) and employee satisfaction (structural model) as well as the relationships between the constructs and the indicator variables (measurement models) as described in Chapter 4.

5.2.1 Reliability of Measured Variables and Assumption Checks of Statistical Analysis

For measuring the reliability of the measured variables, Cronbach's Alpha and Corrected-Items Total Correlation value was a simple and commonly used measure (Hair et al., 2010). Cronbach's alpha coefficient at a score of over 0.7 was inspected for high internal consistency (Hair et al., 2006). Furthermore, Corrected-Items Total Correlation value was inspected for each item. The Corrected-Items Total Correlation value at over 0.3 is acceptable and should be more than 0.45 for structural equation model analysis (Field, 2009). All measured variables are met criteria and the summary of Reliability Test with Cronbach's Alpha and Corrected-Items Total Correlation illustrates in Table 4.4.

There were several key assumptions for linear regression. In this thesis, the data was examined for normality, linearity, multicollinearity and homoscedasticity. The acceptable range of skewness and kurtosis for normal distribution of data were inspected. The acceptable values for asymmetry and kurtosis are between -2 and +2 for proving normal univariate distribution (George & Mallery, 2010). Furthermore, the values of skewness should be between -1 and +1 as acceptable values (Tabachnick & Fidell, 2012). All measured variables are met criteria and the summary of Normality Test with Skewness and Kurtosis were illustrated in the Table 4.6. The linearity assumption can be examined with scatter plots. The additional assumption the linear regression analysis makes is homoscedasticity. All of the plots comes up with a consistent pattern. From research framework, the regression equation was shown as below,

1. SPO = DEPE + LARE + STRE + SUPL + VAST + CEOL + ETHI + LTPE + COCH + FMIN + ENRE + SORE + STCO + SSVI + DEDE + SEMA + TEOR + ENCU + KSRE + TRUS + SSIN + STEN + QUAL

2. EMS = DEPE + LARE + STRE + SUPL + VAST + CEOL + ETHI + LTPE + COCH + FMIN + ENRE + SORE + STCO + SSVI + DEDE + SEMA + TEOR + ENCU + KSRE + TRUS + SSIN + STEN + QUAL

Furthermore, multicollinearity was tested with 2 central criteria. The first value is tolerance, which values more than 0.3 is recommended for the multicollinearity test. The second assumption for multicollinearity is Variance Inflation Factor (VIF). VIF > 10 there is an indication for multicollinearity to be present (O'brien, 2007). The multicollinearity test for this thesis is acceptable.

5.2.2 Structural Equation Model Analysis (SEM) and Confirmatory Factor Analysis (CFA)

There are two models involved in the analysis namely measurement model and structural model. Firstly, the measurement model illustrates the relationship between response items and their underlying latent construct. Unidimensionality, validity, and reliability are needed to be assessed before the structural model will be created. Therefore, Confirmatory Factor Analysis (CFA) should be processed and this analysis will help to address the issues of construct validity and reliability (Schumacker & Lomax, 2004). After assess the model, there were 4 items deleted due to unacceptable factor loading, include ETHI3, ETHI4, SSIN3 and SSIN4. The factor loading for an item should be 0.6 or higher (Field, 2009). Furthermore, the Modification Indices (MI), indicating the correlation between a pair of items in a measurement model, were obtained. High MI refers to the superfluous items. There were several pair of items showing high MI, they were adjusted by drawing covariance. After model adjustment until it was absolute fit, the drew covariance within the same construct including Knowledge sharing and retention (KSRE), Quality (QUAL), Strategic, systemic innovation (SSIN), Ethics (ETHI), Strong and shared vision (SSVI), Sustainability Performance Outcomes (SPO), as well as across construct comprising of Long-term perspective (LTPE) with Considered organizational change (COCH) and Stakeholder consideration (STCO). After all assessment, the evidence and confirmatory factor analysis (CFA) reveals that unidimensionality, validity, and reliability of the measurement model is acceptable as assessment mentioned in Chapter 4.

Regarding the structural model, it demonstrates the inter-relationships among constructs in the research, which are assembled into the structural model based on the

hypothesis that was stated in the theoretical framework. The fitness indexes assessment of the statistical model describes how well it fits into a set of observations. The fitness indexes are summarized in Table 5.1.

Table 5.1 The Summary of Fitness Indexes Assessment for the Structural Model

Name of index	Cut-off for good fit	Reference	Index value	Comments
X2/df	<3.00	Marsh and Hocevar (1985)	1.872	The required level is achieved
GFI	>0.90	Schumacker and Lomax, 2004	0.942	The required level is achieved
AGFI	>0.85	Schumacker and Lomax, 2004	0.903	The required level is achieved
RMSEA	<0.08	Browne and Cudeck (1993)	0.040	The required level is achieved

5.2.3 Hypothesis testing results

The structural equation model presenting the results of the analyses on the causal relationships among three key constructs is proposed in Figure 4.2 and summary of direct effect in path analysis illustrating effect of sustainable leadership factors on Sustainability Performance Outcomes (SPO) and employee satisfaction (EMS) is explained in Table 4.10. The summary of hypothesis testing results was explained in the Table 5.2

Table 5.2   The summary of hypothesis testing results

Hypothesis		Result	Significant Level
H1: There is a positive predictive relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	H1.1: There is a positive predictive relationship between Continuous People Development and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
	H1.2: There is a positive predictive relationship between Amicable Labor Relations and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
	H1.3: There is a positive predictive relationship between Long-term Staff Retention and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
	H1.4: There is a positive predictive relationship between Internal Succession Planning and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
	H1.5: There is a positive predictive relationship between Valuing Staff and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
	H1.6: There is a positive predictive relationship between CEO and Top-Team Leadership and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
	H1.7: There is a positive predictive relationship between Ethics and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.01

Table 5.2 The summary of hypothesis testing results (cont.)

Hypothesis	Result	Significant Level
H1.8: There is a positive predictive relationship between Long-Term Perspective and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H1.9: There is a positive predictive relationship between Considered Organizational Change and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations	Supported the hypothesis	0.05
H1.10: There is a positive predictive relationship between Financial Market Independence and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
H1.11: There is a positive predictive relationship between Environmental Responsibility and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H1.12: There is a positive predictive relationship between Social Responsibility and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Rejected the hypothesis	Not significant
H1.13: There is a positive predictive relationship between Stakeholder Approach and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
H1.14: There is a positive predictive relationship between Strong and Shared Vision and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.05

Table 5.2 The summary of hypothesis testing results (cont.)

Hypothesis	Result	Significant Level
H1.15: There is a positive predictive relationship between Devolved and Consensual Decision-Making and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
H1.16: There is a positive predictive relationship between Self-Management and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H1.17: There is a positive predictive relationship between Team Orientation and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
H1.18: There is a positive predictive relationship between Enabling Culture and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H1.19: There is a positive predictive relationship between Knowledge Retention and Sharing and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H1.20: There is a positive predictive relationship between Trust and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
H1.21: There is a positive predictive relationship between Strategic, Systemic Innovation and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.01

Table 5.2 The summary of hypothesis testing results (cont.)

Hypothesis		Result	Significant Level
	H1.22: There is a positive predictive relationship between Staff Engagement and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
	H1.23: There is a positive predictive relationship between Quality and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H2: There is a positive predictive relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organizations.	H2.1: There is a positive predictive relationship between Continuous People Development and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
	H2.2: There is a positive predictive relationship between Amicable Labor Relations and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
	H2.3: There is a positive predictive relationship between Long-term Staff Retention and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
	H2.4: There is a positive predictive relationship between Internal Succession Planning and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
	H2.5: There is a positive predictive relationship between Valuing staff and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
	H2.6: There is a positive predictive relationship between CEO and Top-Team Leadership and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.05

Table 5.2 The summary of hypothesis testing results (cont.)

Hypothesis	Result	Significant Level
H2.7: There is a positive predictive relationship between Ethics and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H2.8: There is a positive predictive relationship between Long-Term Perspective and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H2.9: There is a positive predictive relationship between Considered Organizational Change and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H2.10: There is a positive predictive relationship between Financial Market Independence and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
H2.11: There is a positive predictive relationship between Environmental Responsibility and perceived employee satisfaction in Thai pharmaceutical organizations.	Rejected the hypothesis	Not significant
H2.12: There is a positive predictive relationship between Social Responsibility and perceived employee satisfaction in Thai pharmaceutical organizations.	Rejected the hypothesis	Not significant
H2.13: There is a positive predictive relationship between Stakeholder Approach and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
H2.14: There is a positive predictive relationship between Strong and Shared Vision and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.05

Table 5.2 The summary of hypothesis testing results (cont.)

Hypothesis	Result	Significant Level
H2.15: There is a positive predictive relationship between Devolved and Consensual Decision-Making and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H2.16: There is a positive predictive relationship between Self-Management and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H2.17: There is a positive predictive relationship between Team Orientation and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
H2.18: There is a positive predictive relationship between Enabling Culture and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H2.19: There is a positive predictive relationship between Knowledge Retention and Sharing and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H2.20: There is a positive predictive relationship between Trust and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.05
H2.21: There is a positive predictive relationship between Strategic, Systemic Innovation and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01
H2.22: There is a positive predictive relationship between Staff Engagement and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01

Table 5.2 The summary of hypothesis testing results (cont.)

Hypothesis		Result	Significant Level
	H2.23: There is a positive predictive relationship between Quality and perceived employee satisfaction in Thai pharmaceutical organizations.	Supported the hypothesis	0.01

5.2.3.1 Research finding relates to the first set of hypothesis (H1)

The first research finding relates to the first RQ and H1, which is "There is a positive predictive relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations".

The analysis shows the positive direct effects of sustainable leadership factors on sustainability organizational performance (SPO). The significant effects were shown in all sustainable leadership factors excepted for SORE. These results provide support for the association between sustainable leadership factors and sustainability organizational performance (SPO), excepted for Social responsibility.

Regarding this research, sustainable leadership factors were investigated on how they influence to perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations derived from Avery and Bergsteiner's (2010, 2012) sustainable leadership framework and supported by the literature. Hence, this finding uncovers the presence of unidimensionality of each sustainable leadership factor for organizational sustainability in Thai pharmaceutical organizations, which answers the first research question (RQ1) and hypothesis (H1) in this study.

The three sustainable leadership factors which showed most strong direct effect is Ethics (ETHI), Quality (QUAL) and Knowledge sharing and retention (KSRE) with the standardized regression weight at 0.567, 0.516 and 0.457 respectively. Summary of top three sustainable leadership factors showed positive predictive relationship with sustainability performance outcomes (SPO) was shown in Table 5.3. The value of coefficient of determination R^2 of SPO is 0.523. The figure indicates the contribution of exogenous constructs, which showed significant effect, in estimating the endogenous construct SPO is 52.3%. Consequently, this research finding

fills gaps in the current literature and contributes to expand limited knowledge of leadership and management application in Thai pharmaceutical organizations.

For effect of each top three sustainable leadership factor, it was investigated through additional set of hypothesis as described in Chapter 4 and summarized in Table 5.2. In this thesis, the result indicated that Ethics promotes sustainability performance outcomes. This finding was aligned with the literature in healthcare, which stated that Ethics and compassion of healthcare person is linked to patients' health outcomes and organization performance. It is universally valued as a social and moral practice, which should be upheld and sustained (Decety & Fotopoulou, 2015; de Zulueta, 2015, 2016). This study implies and further recommends that pharmaceutical organization owners or senior executives who wish to ensure long-term performance outcomes and organizational sustainability should put their effort to ensure ethics and regulation throughout the entire organization. Moreover, in Thai context, there is well-known non-profit organization representing members who are research based pharmaceutical companies innovating medicines to combat the previously incurable and to improve on existing treatments. The association name is Pharmaceutical Research and Manufacturers Association (PReMA) which all members will respect the rule and regulation declared by PReMA. In addition, manufacturers of medicine in Thailand have to register with Thai Food and Drug Administration (FDA) as manufacturers for modern drugs (medicine) who are certified by good manufacture practice (GMP). Therefore, GMP is one of the regulation that manufacturers have to respect the most (PreMa official website on 9 July 2018; FDA official website on 9 July 2018). For the second influence factor, the result indicated that Quality promotes sustainability performance outcomes. This finding was aligned with the literature in healthcare, which stated that Quality care could enhance trusts with high levels of engagement, which is very crucial for medical professionals. It influences point-of-care innovation and improvement in both individual care practices and organizational performance. Moreover, there are various researches show that quality management has a significant and positive effect on organizational performance (Spurgeon et al., 2017; Joseph & Huber, 2015; Valmohammadi & Roshanzamir, 2015; Mehralian, Nazari, Zarei, & Rasekh, 2016). This study implies and further recommends that pharmaceutical organization owners or senior executives who wish to ensure long-term performance outcomes and organizational sustainability should put their effort and

resources into developing and nurturing quality throughout the entire products and enterprise. Regarding the third influence factor, the result indicated that Knowledge Retention and Sharing promotes sustainability performance outcomes. This finding was aligned with the literature in healthcare, which stated that human capital investment and development, for example, training, education, knowledge management and skills development, is essential for enhancing organizational performance in term of both financial and non-financial outcomes. Noruzy and team developed a confirmatory factor analysis to validate knowledge management by using the scales developed by Gold et al. This scale consists of four interrelated processes: knowledge acquisition, knowledge transfer, knowledge integration and knowledge conversion. The scale showed high validity and reliability. Structural equation modeling was conducted to assess the fit of the hypothesized model and the knowledge management was found to positively correlate to performance (Odhon'g & Omolo, 2015; Zumitzavan & Michie, 2015; Noruzy, 2013). This thesis result implies and further recommends that pharmaceutical organization owners or senior executives who wish to ensure long-term performance outcomes and organizational sustainability should put their focus on knowledge retention and sharing, e.g. training, for their employees in all levels.

5.2.3.2 Research finding relates to the second set of hypothesis (H2)

The second research finding relates to the second RQ and H2, which is "There is a positive predictive relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organizations".

The analysis shows the positive direct effects of sustainable leadership factors on employee satisfaction (EMS). For EMS, the significant effects were shown in all sustainable leadership factors excepted for ENRE and SORE. These results provide support for the association between sustainable leadership factors and sustainability organizational performance (SPO), excepted for Environmental responsibility and Social responsibility.

Regarding this research, sustainable leadership factors were investigated on how they influence to employee satisfaction (EMS) in Thai pharmaceutical organizations derived from Avery & Bergsteiner's (2010, 2012) sustainable leadership framework and supported by the literature. Hence, this finding uncovers the presence

of unidimensionality of each sustainable leadership factor for organizational sustainability in Thai pharmaceutical organizations, which answers the first research question (RQ2) and hypothesis (H2) in this study.

The three sustainable leadership factors which showed most strong direct effect is Knowledge sharing and retention (KSRE), Quality (QUAL) and continuously developing people (DEPE) with the standardized regression weight at 0.529, 0.465 and 0.457 respectively. Summary of top three sustainable leadership factors showed positive predictive relationship with sustainability performance outcomes (SPO) was shown in Table 5.3. The value of coefficient of determination R2 of EMS is 0.477. The figure indicates the contribution of exogenous constructs, which showed significant effect, in estimating the endogenous construct EMS 47.7%.

For effect of each sustainable leadership factor, it was investigated through additional set of hypothesis as described in Chapter 4 and summarized in Table 5.2. In this thesis, the result indicated that Knowledge Retention and Sharing promotes sustainability performance outcomes. This finding was aligned with the literature in healthcare, which stated that knowledge management and skills development is essential for enhancing organizational performance in term of both financial and non-financial outcomes including satisfaction of stakeholders (Odhon'g & Omolo, 2015). They have claimed that the personal knowledge management could help individuals learn and understand how to learn effectively which lead to utilization of the knowledge and skill for enhancing leadership and management in the organization under any circumstances. (Zumitzavan & Michie, 2015). Hence, the thesis result implies and further recommends that pharmaceutical organization owners or senior executives who wish to ensure long-term performance outcomes and organizational sustainability should put their focus on knowledge retention and sharing, e.g. training, for their employees in all levels. Four interrelated processes which recommended by the literature are knowledge acquisition, knowledge transfer, knowledge integration and knowledge conversion. The scale showed high validity and reliability. Structural equation modeling was conducted to assess the fit of the hypothesized model and the knowledge management was found to positively correlate to performance (Noruzy, 2013). For the second influence factor, the result indicated that Quality promotes employee satisfaction. This finding was aligned with the literature in healthcare, which stated that the healthcare

organization emphasizes quality as one of pivotal culture and core values. The evidence from study of Spurgeon, Clark and Ham (2017) provides confirmatory support for the medical leadership policy on improvements in quality, safety and productivity. Quality care could enhance trusts with high levels of engagement, which is very crucial for medical professionals. Consequently, those effects account for satisfaction of employees and customers (Spurgeon et al., 2017). Therefore, this thesis result implies and further recommends that pharmaceutical organization owners or senior executives who wish to ensure employee satisfaction and organizational sustainability should put their focus on quality of organization processes which would affect consequently to safety, productivity and trust among healthcare people. The factors could lead to improve satisfaction of employees and customers Regarding the third influence factor, the result indicated that developing people continuously promotes employee satisfaction in context of Thai pharmaceutical industry. This finding was aligned with the literature in healthcare, which stated that the development for healthcare people is needed in order to improve quality and satisfaction of care. The improvement could lead to employee satisfaction and organizational performance (Thompson, Wolf, & Spear., 2003; Young, T. et al. 2004; Spear, 2005; Niemeijer, 2012; D'Andreamatteo et al., 2015; Akerjordet et al., 2018; Mortier, Vlerick, & Clays, 2016). This thesis result implies and further recommends that pharmaceutical organization owners or senior executives who wish to ensure employee satisfaction and organizational sustainability should put their focus on development for healthcare people, which would be factors to improve quality and satisfaction of care.

Lastly, this research finding identifies the sustainable leadership factors that positively effect to organizational sustainability, as well as should be widely applicable in the Thai context and possibly other Asian contexts. Furthermore, the finding responds to calls for further leadership studies in pharmaceutical organizations. In addition, these thesis findings fulfill gaps in the current literature and contributes to expand limited knowledge of leadership and management application in Thai pharmaceutical organizations.

Table 5.3   Summary of top three sustainable leadership factors showed positive predictive relationship with sustainability performance outcomes (SPO) and employee satisfaction (EMS)

Sustainable leadership factors ranking	Sustainability performance outcomes (SPO)	Employee satisfaction (EMS)
1	Ethics (ETHI)	Knowledge sharing and retention (KSRE)
2	Quality (QUAL)	Quality (QUAL)
3	Knowledge sharing and retention (KSRE)	Continuously developing people (DEPE)

5.3 Empirical and Practical Importance

Findings and implications from this study provide empirical and practical importance to both academics and practitioners.

This thesis provides more understanding and empirical evidence for the explication of those challenges mentioned in the research background and problems. Furthermore, the research questions and objectives are designed with the regard of addressing gaps in previous literatures. The study would greatly contribute to the existing literature by helping prioritize leadership approach, management, the association and impact on sustainability of organization, which has been significantly emphasized by global and individual concern mentioned in Chapter 2. The research findings support that there is a positive relationship between SL factors and Sustainability Performance Outcomes (SPO) as well as employee satisfaction in Thai pharmaceutical organizations, although, there are some factors show positive direct effect but not statistically significant.

These results indicate that all 23 SL factors have positive effect on sustainable organization performance (SPO) and employee satisfaction (EMS). The three sustainable leadership factors which showed most strong direct effect is Ethics (ETHI), Quality (QUAL) and Knowledge sharing and retention (KSRE). This finding aligned with literature reviewed in Chapter 2. There are some sustainable leadership practices, which

were frequently investigated in the healthcare context including ethics, knowledge retention and sharing, innovation and quality. Three out of four elements show strongly positive effect to SPO in this thesis findings (Decet & Fotopoulou, 2015; de Zulueta, 2015, 2016; PreMa official website on 9 July 2018; FDA official website on 9 July 2018; Odhon'g & Omolo, 2015; Zumitzavan & Michie, 2015; Noruzy, 2013; Spurgeon et al., 2017; Joseph & Huber, 2015).

Regarding the significant effects shown in all sustainable leadership factors, the exception is for some elements, the same for both endogenous constructs, SPO and EMS, is Social responsibility (SORE). The findings are consistent with the previous research that does not show any direct relationship between corporate social responsibility (CSR) and organization performance (Mehralian, Nazari., Zarei, & Rasekh., 2016; Luo & Bhattacharya, 2006; McWilliams et al., 2006). The scholars discussed that the socially irresponsible practices, for example pollution, might result in costs that was not outweigh the short-term benefits, which can be received from investment in corporate social responsibility. While some literatures stated that the quality working environment and preserving environment for community enhance organizational excellence and high quality of service, which linked to organization performance and sustainability in healthcare (D'Andreamatteo, Ianni, Lega, & Sargiacomo, 2015; Crema & Verbano, 2015; Marimuthu & Paulose, 2016). Therefore, the further investigation should be identify for this factors, for example, the indirect or mediating effect among the constructs.

Another sustainable leadership factor which showed direct effect to the endogenous construct but the significant level was not met as well is Environmental Responsibility (ENRE). The significant level was not met only for employee satisfaction. From literature review, researchers who studied on sustainability based approached in healthcare have claimed that the sustainability practices could be divided into four categories, including environment, customer, employee and community. All dimensions are necessary for achieving sustainability goals (Marimuthu & Paulose, 2016). A lot of studies have been focused on environmental sustainability and the impact to community which reflected to patient care. The findings were aligned with literature review indicated that most of pharmaceutical companies in this study do not have environmental responsibility in their core values. However, they include patient focus or patient care in their core values instead. Furthermore, there are various researches showed that environmental

sustainability has impact on healthcare activity. Operation on the environment and organizational stability could lead to a decrease in cost and enhancement affordability for both the providers and the consumers (Chandra, Rinkoo, Verma, Kapoor, & Sharma, 2013; Price, Sergelen & Unursaikhan, 2013; Sagha, Xuan, & Shepley, 2016). Regarding consideration of affordability for both the providers and the consumers, the researches emphasized on the customer or patient care aligned with previous review. Therefore, implementation or further investigation might include variable reflected on patient care for more applicable as recommendation from this study. Furthermore, the pharmaceutical organizations in Thailand should focus more on these aspects for both social responsibility and environment responsibility in order to drive organizational sustainability.

Furthermore, this research supplies the increasing demand for leadership and strategy researchers for further studies related to organizational sustainability in healthcare organization, focusing on pharmaceutical companies, as an empirical investigation in Thailand. Regarding significance of Thailand towards Asia and global context, the research therefore provides support and more understanding upon the empirical evidence from developing country. Elsewhere, the investigation on pharmaceutical companies could proclaim for the major contribution of healthcare organization and impact for healthcare system (Avery & Bergsteiner, 2010, 2011a, b, 2012; Kantabutra, 2011, 2012a, b; Kantabutra & Avery, 2013; Kantabutra & Suriyankietkaew, 2013, 2016; Himathongkam, 2016; Avery, 2016).

As a matter of fact, this study narrows the gap in the literature, which separately investigated each dimension of sustainable leadership. The multi-dimensional aspects of leadership and management are also under consideration to engender more effective corporate performance for organizational sustainability via sustainable leadership framework (Avery & Bergsteiner, 2010, 2011a, b, 2012). Based on this research both financial and non-financial measures are employed to evaluate organizational sustainability. Moreover, this thesis strengthens the knowledge of the emergent multi-disciplinary through the investigation of key factors stem from the sustainable leadership framework which leads to success in healthcare organization performance.

Also, this thesis improves the emergent conceptual model and management of leadership of pharmaceutical organizations. This thesis examines the relationships between multi-leadership and management factors depending on sustainable performance

outcomes and through this study, the gap in knowledge is to be fulfilled by this study will indicate any relevant differences between organizational members to extend the current knowledge. As a consequence, the results could be served as the tools for producing awareness of differences and how it impacts the performance of those workers who perform for their common goal with the aims to boost the corporate performance as well as retaining organizational sustainability.

Ultimately, the structural equation model presenting relationship between sustainable leadership factors and sustainable organization performance (SPO) as well as employee satisfaction from this thesis can provide more understanding towards the leadership and management factors. Therefore, this thesis contributes significantly to the existing literature and prepares explanation of the sustainable leadership phenomenon within organization.
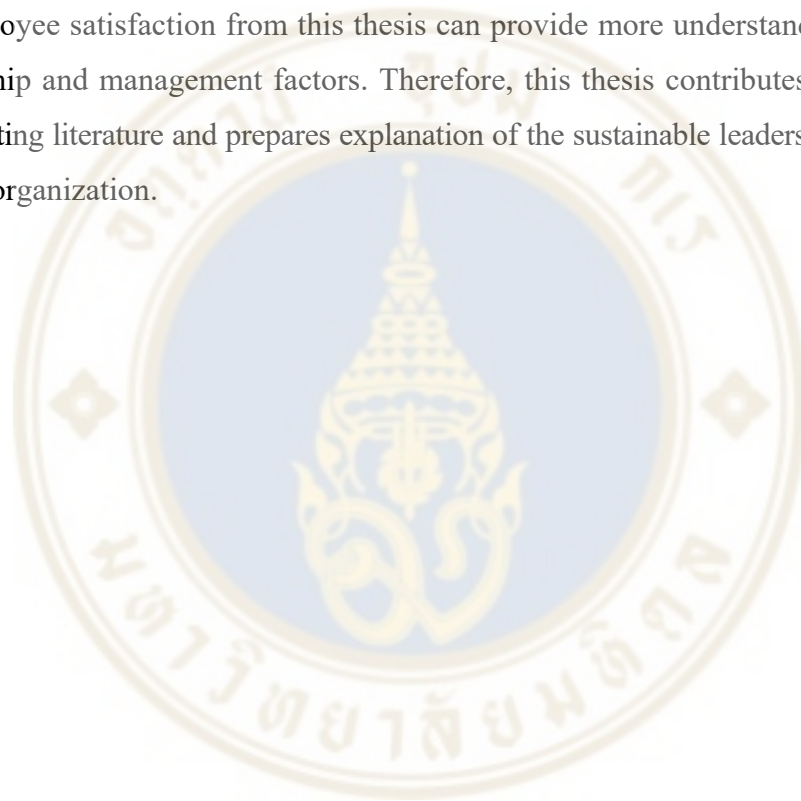
CHAPTER VI
CONCLUSION

In this chapter, the conclusion of thesis overview is conducted. It comprises of overall research findings and contributions to knowledge. Moreover, limitations of the study and directions for future research are described in this chapter.

6.1 Overall Summary of the Research Study

The aim of this thesis is to address these challenges and gaps in previous literatures and attempts to further expand current understanding and empirical evidence for underlying leadership and management practices derived from the Sustainable Leadership (SL) (Avery & Bergsteiner's, 2010, 2012) framework influencing to sustainability performance outcomes (SPO), which include brand and reputation, customer satisfaction, financial performance long-term value for multiple stakeholders and long-term shareholder value, and the employee satisfaction in pharmaceutical organizations among Thai context, as explained in Chapter 2.

The thesis is divided into six chapters. Chapter 1 explains the research background, objectives and questions, and provides a research framework for this research. Chapter 2 reviews, and discusses current gaps and problems in the current literature, as well as explaining the SL theoretical framework and developing hypotheses for the thesis. Chapter 3 identifies the research methodology employed for this study. Data analysis methods, hypothesis-testing and data interpretation are examined in Chapter 4. Chapter 5 covers research findings, final discussion and managerial implications. Lastly, contributions to knowledge, limitations and future research are provided in Chapter 6.

According to the previous literature, various SL practices effect differently to organizational performance and sustainability. Nevertheless, an examination of their relationships between various leadership and management factors and SPO is still underdeveloped. Thus, this thesis empirically examines those relationships derived from

the SL framework and the SPO which tailored for pharmaceutical industry across Thai healthcare organization, specifically for pharmaceutical organizations. The objective of this thesis is to empirically examine which SL factors significantly affect perceived Sustainability Performance Outcomes (SPO) and employee satisfaction in Thai pharmaceutical organizations as well as provide confirmation of the general validity of the structural equation model. The specific research questions (RQ) in this thesis are:

RQ1: What SL factors positively predict relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations?

RQ2: What SL factors positively predict relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organizations?

Regarding investigation of the relevant existing literature for answering the research questions which are explained in Chapter 2, this thesis will emphasize on sustainable leadership approach and management paradigms of healthcare industry, specifically in pharmaceutical organizations in Thailand, and impact on organization performance in the long term. There are two hypotheses examined. The first hypothesis (H1) investigates whether there is a positive predictive relationship between SL factors and perceived Sustainability Performance Outcomes (SPO) in Thai pharmaceutical organizations. The second hypothesis (H2) investigates whether there is a positive predictive relationship between SL factors and perceived employee satisfaction in Thai pharmaceutical organizations.

Regarding RQ1 and 2, Structural Equation Modeling (SEM) would be employed to investigate the relationship between each construct including extracted structures of leadership and management factor derived from SL, perceived Sustainability Performance Outcomes (SPO) and employee satisfaction (structural model) as well as the relationships between the constructs and the indicator variables (measurement models)

The questionnaire was adopted from organizational leadership and management adapted from Avery and Bergsteiner's (2010, 2012) SLQ and the sustainable leadership research from Suriyankietkaew and Avery (2016). According to the blueprint questionnaires were not applied specifically for pharmaceutical industry, there would be some questions that were improved to be more suitable with pharmaceutical context. From 556 responses that were used for data analysis, there were 13 respondents who answered as don't know. Therefore, there were 543 responses analyzed in this thesis.

The results indicate that all 23 SL factors have positive effect on sustainable organization performance (SPO) and employee satisfaction (EMS). The three sustainable leadership factors which showed most strong direct effect for SPO are Ethics (ETHI), Quality (QUAL) and Knowledge sharing and retention (KSRE). For EMS, the top three factors are Ethics (ETHI), Quality (QUAL) and Continuously developing people (DEPE). This finding aligned with literature reviewed in Chapter 2. There are some sustainable leadership practices, which were frequently investigated in the healthcare context including ethics, knowledge retention and sharing, innovation and quality. Three out of four elements show strongly positive effect to SPO in this thesis findings (Decety & Fotopoulou, 2015; de Zulueta, 2015, 2016; PreMa official website on 9 July 2018; FDA official website on 9 July 2018; Odhon'g & Omolo, 2015; Zumitzavan & Michie, 2015; Noruzy, 2013; Spurgeon et al., 2017; Joseph & Huber, 2015).

To conclude, all research questions and hypotheses have been answered in this study as formerly described, thereby meeting its research objectives. This thesis would provide more understanding and empirical evidence for the explication of those challenges mentioned in the research background and problems. Furthermore, the research questions and objectives are designed with the regard of addressing gaps in previous literatures. The study would greatly contribute to the existing literature by helping prioritize leadership approach and management and the association and impact on sustainability of organization, which has been significantly emphasized by global and individual concern.

6.2 Limitations of this Thesis and Recommendations for Future Research

This thesis provides more understanding and empirical evidence for the explication of those challenges mentioned in the research background and problems. Furthermore, the research questions and objectives are designed with the regard of addressing gaps in previous literatures. Although the researcher attempt for high quality in this thesis, some limitations need to be acknowledged.

The first limitation relates to the specific Thai pharmaceutical company. Therefore, any interpretation or application of the research findings should allow for the cultural bias of the specific Thai pharmaceutical organizations. Generalization of the research results to other kinds of businesses needs to be verified and further investigated.

As discussed in Chapter 1, the pharmaceutical business is unique and has special characteristics. For the recommendations for future research, it should be conducted in other cultures or countries for validating and maximizing the result of this thesis to broader settings, for example in Asia.

The second limitation relates to the data collection which was based on convenience sampling in one emerging country. Convenience sampling method has various benefit that would maximize the effectiveness of this study such as easy accessibility, geographical proximity, availability at a given time, or the willingness to participate are included for the purpose of the study (Etikan, Musa, & Alkassim, 2016; Hall et al., 2015; Shires & Jaffee, 2015; Zumitzavan & Michie, 2015). Although, in order to minimize the drawbacks of convenience sampling method, this thesis employed pre-defined criteria as previously described for the sampling frame. The thesis approached the pharmaceutical organizations, for both global and local enterprises, which mainly sell their products within Thailand. There are also some criticism on convenience sampling method which could provide various bias to the data sampling. For further research, the sampling might include various method in order to mitigate the consequence effect.

The third limitation concerns, after assess the model through statistical processes, 4 items deleted due to unacceptable factor loading, include ETHI3, ETHI4, SSIN3 and SSIN4. Furthermore, there were several pair of items showing high MI, they were adjusted by drawing covariance. Although, after all assessment, the evidence and confirmatory factor analysis (CFA) reveals that unidimensionality, validity, and reliability of the measurement model is acceptable, the application of this model needs to be concerned of this limitation. For the recommendations for future research, it might conduct more complex model for relationship between sustainable leadership factors and sustainable organizational performance as well as employee satisfaction, for example investigation of the mediating effect among those constructs.

Lastly, regarding the significant effects shown in all sustainable leadership factors, the exception is for some elements, the same for both endogenous constructs, SPO and EMS, is Social responsibility (SORE). The findings are consistent with the previous research that does not show any direct relationship between corporate social responsibility (CSR) and organization performance (Mehralian., Nazari, Zarei, & Rasekh, 2016; Luo & Bhattacharya, 2006; McWilliams et al., 2006). Therefore, the further

investigation should be identify for this factor, for example, the indirect or mediating effect among the constructs. Another sustainable leadership factor which showed direct effect to the endogenous construct but the significant level was not met as well is Environmental Responsibility (ENRE). The significant level was not met only for employee satisfaction. From literature review, researchers who studied on sustainability based approached in healthcare have claimed that the sustainability practices could be divided into four categories, including environment, customer, employee and community. All dimensions are necessary for achieving sustainability goals (Marimuthu & Paulose, 2016). A lot of studies have been focused on environmental sustainability and the impact to community which reflected to patient care. The findings were aligned with literature review indicated that most of pharmaceutical companies in this study do not have environmental responsibility in their core values. However, they include patient focus or patient care in their core values instead. Therefore, implementation or further investigation might include variable reflected on patient care for more applicable as recommendation from this study.

Although there were various limitations raised, this thesis makes a valuable contribution to leadership and management theory and practices, corporate performance and organizational sustainability.

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APPENDICES

Appendix A: Ethics Approval

IPSR-Institutional Review Board (IPSR-IRB)

Established 1985

COA. No. 2018/08-234

Certificate of Ethical Approval

Title of Project: *An Empirical Investigation of Sustainable Leadership and*
                    Performance Outcomes in Thai Healthcare Organizations

Duration of Project: *3 years (January 2018 - December 2020)*

Principal Investigator (PI): *Ms. Pavinee Kungwanpongpun*

PI's Institutional Affiliation: *College of Management, Mahidol University*

Approval includes: *1) Submission form*
                        2) Research proposal
                        3) Questionnaire
                        4) Participant information sheet
                        5) Informed consent document

IPSR-Institutional Review Board (IPSR-IRB) met on 30th August 2018 and decided to issue the COA to the above project.

Signature

(Professor Emeritus Pramote Prasartkul)
Chairman, IPSR-IRB
Valid from August 30, 2018 to August 29, 2019

Remarks
1) Upon the completion of this project, the PI should inform the IPSR-IRB of such progress.
2) The PI is obliged to notify any modification of the research project to the IPSR-IRB.

IORG Number: IORG0002101;   FWA Number: FWA00002882;   IRB Number: IRB0001007

Office of the IPSR- IRB, Institute for Population and Social Research, Mahidol University, Phuttamonthon 4 Rd., Salaya, Phuttamonthon district, Nakhon Pathom 73170. Tel (662) 441-0201-4 ext. 223

Appendix B: Questionnaire (English)

Questionnaire

An Empirical Investigation of Sustainable Leadership and Performance

Outcomes in Thai Healthcare Organizations

Introduction

Thank you for participating in this survey about leadership in your organization. Please read the instruction and answer each question by putting a check mark (✓) on your chosen response. If you make a mistake or wrong choice, please cross it out and put a new check mark (✓) on your new chosen response. Remark: This survey has been adapted from the Sustainable Leadership Questionnaire © Harry Bergsteiner 2010 and the sustainable leadership research from Suriyankietkaew S. and Avery G. (2016).

Part 1 General Information

Please read each question and put a check mark (✓) on your response.

1. Are you male or female?	Male ☐		Female ☐		
2. What is your age range?*(years old)*	Below 20 ☐ 20-34 ☐ 35-44 ☐ 45-55 ☐ Above 55 ☐				
3. What is your highest educational level?	Below Diploma ☐	Diploma ☐	Bachelor Degree ☐	Master Degree ☐	Doctoral Degree ☐
4. How long have you worked for the organization? *(years)*	Below 6 ☐ 6-10 ☐ 11-15 ☐ 16-20 ☐ Above20 ☐				
5. Are you a manager?	Yes ☐	No ☐			

Part 2 Organization Information

Please read each question and put a check mark (✓) on your response

1. What is your organization's ownership type?	Thai ownership ☐ (More than half of owners are Thais) Foreign Ownership ☐ (More than half of owners are Foreigners)
2. How many employees do you have in your organization? (employees)	Under 21 ☐ 21-50 ☐ 51-80 ☐ 81-100 ☐ Above 100 ☐

Part 3 Attitude about Organizational Leadership and Management

Please read each statement and put a check mark (✓) on a scaled number that corresponds most closely to your response (1 = Strongly disagree - 5 = Strongly agree; and 6 = Don't know).

	Strongly disagree	disagree	Neutral	agree	Strongly agree	Don't know
1. Everyone has good ongoing access to training and development in this organization.	1	2	3	4	5	6
2. Training and development are some of the first things cut in difficult times.	1	2	3	4	5	6
3. Employee representatives are involved in key strategic decisions.	1	2	3	4	5	6
4. Disputes between leaders and employees are typically settled through external processes such as arbitration or the courts.	1	2	3	4	5	6
5. If this organization had to lay people off, our leaders would support those affected in any way they could.	1	2	3	4	5	6

	Strongly disagree	disagree	Neutral	agree	Strongly agree	Don't know
6. Our leaders lay off people if it is necessary to achieve short term financial results.	1	2	3	4	5	6
7. Our organization has a formal succession planning policy in place.	1	2	3	4	5	6
8. Our organization fills many management positions with outsiders.	1	2	3	4	5	6
9. Our leaders treat people with respect, consideration and integrity.	1	2	3	4	5	6
10. Our leaders are not involved in people's personal lives.	1	2	3	4	5	6
11. Key strategic decisions are made by the top management team, not just the most senior person - the General Manager.	1	2	3	4	5	6
12. In this organization the General Manager resolves difficult situations, not the top management team.	1	2	3	4	5	6
13. As far as I can see, our organization consistently behaves ethically	1	2	3	4	5	6
14. I am aware that our organization has an ethical code of conduct that explains what is expected of all employees.	1	2	3	4	5	6
15. The consensus in this organization is that we must always act ethically no matter how tough things get.	1	2	3	4	5	6
16. As far as I am concerned, the ethical code of conduct of this organization is equally or more strict than PreMa (for global company) or GMP (for local company).	1	2	3	4	5	6

	Strongly disagree	disagree	Neutral	agree	Strongly agree	Don't know
17. Our decisions in this organization, are made with the long-term in mind.	1	2	3	4	5	6
18. Our leaders usually focus on long-term planning and strategies (e.g. long-term investment in technologies and /or long-term resource management)	1	2	3	4	5	6
19. People in this organization thinks and act for long-term success.	1	2	3	4	5	6
20. When major change is planned, the affected people are consulted and involved.	1	2	3	4	5	6
21. Our leaders carefully plan change to ensure new processes and behaviors suit the existing culture.	1	2	3	4	5	6
22. When major change is necessary, our leaders handle it very carefully to minimize harm.	1	2	3	4	5	6
23. Our leaders make business decisions that are right for the organization, even if financial analysts disagree.	1	2	3	4	5	6
24. Our leaders believe that our organization must grow, whatever the cost.	1	2	3	4	5	6
25. Environmental protection is a core value of this organization that influences behavior of employees, suppliers and even customers	1	2	3	4	5	6
26. This organization's environmental policies meet, but do not exceed what the law requires.	1	2	3	4	5	6
27. Our leaders encourage employees to engage in social or community activities in work time.	1	2	3	4	5	6
28. In this organization, generating profits and providing jobs is considered sufficient contribution to the community.	1	2	3	4	5	6

	Strongly disagree	disagree	Neutral	agree	Strongly agree	Don't know
29. Our leaders value others' interests, in addition to investors' needs.	1	2	3	4	5	6
30. Our leaders show respect for, and work closely with, employees, customers, suppliers and other stakeholders.	1	2	3	4	5	6
31. Other things being equal, this organization chooses suppliers based on price rather than long-standing relationships.	1	2	3	4	5	6
32. Our leaders have a vision that goes beyond just making as much money as possible.	1	2	3	4	5	6
33. Our organizational vision energizes and guides people's work.	1	2	3	4	5	6
34. This organization has a strong vision that everyone knows, shares and works towards.	1	2	3	4	5	6
35. I'm unsure what this organization's vision for the future is.	1	2	3	4	5	6
36. Employees are encouraged to challenge decisions made by our leaders.	1	2	3	4	5	6
37. Our leaders look for consensus when making decisions.	1	2	3	4	5	6
38. As employees in this organization, we have high discretion over our working lives provided we deliver the required outcomes.	1	2	3	4	5	6
39. Our leaders and managers set detailed work objectives, specify the way work will be done, and monitor progress closely.	1	2	3	4	5	6
40. Our organization has a strong team culture.	1	2	3	4	5	6

	Strongly disagree	disagree	Neutral	agree	Strongly agree	Don't know
41. People work well in teams at all levels of this organization.	1	2	3	4	5	6
42. Our leaders treat employees as the organization's most valuable asset.	1	2	3	4	5	6
43. The way things are done in this organization really engages people's hearts and minds.	1	2	3	4	5	6
44. This organization likes people to get together informally during work hours, to exchange information and ideas about their work.	1	2	3	4	5	6
45. Our organization offers many formal and informal opportunities to share information and ideas.	1	2	3	4	5	6
46. Our organization has processes for integrating different sources and types of knowledge	1	2	3	4	5	6
47. Our organization has processes for converting shared knowledge into plans of action	1	2	3	4	5	6
48. In this organization, we can rely on our people to keep to their word.	1	2	3	4	5	6
49. In this organization, people deal with each other based on an understanding that we will look after each other's best interests.	1	2	3	4	5	6
50. Everyone here can be innovative, even if they are not employed in a research capacity.	1	2	3	4	5	6
51. We have systems to encourage, evaluate, track, reward and celebrate innovative ideas.	1	2	3	4	5	6
52. Our leaders accept that innovation contains the risk of failure.	1	2	3	4	5	6

	Strongly disagree	disagree	Neutral	agree	Strongly agree	Don't know
53. In comparison with its competitors, this organization has become much more innovative.	1	2	3	4	5	6
54. I am proud to tell people that I work for this organization.	1	2	3	4	5	6
55. People give their personal best for this organization because of the excellent way in which it treats them.	1	2	3	4	5	6
56. Supplying products and services of the highest quality is a matter of pride to our organization.	1	2	3	4	5	6
57. The view around here is that increasing quality, increases productivity and profits.	1	2	3	4	5	6
58. This organization has clear and strict standard of procedure (SOP) for quality assessment.	1	2	3	4	5	6
59. This organization has clear and strict standard of procedure (SOP) for ensuring product quality and management of under qualified products.	1	2	3	4	5	6

Part 4 Perceived Organizational

Performance Please read each statement and select your answer by putting a check mark (✓) on a scaled number (1 = Much worse - 5 = Much better; 6 = Don't know).

	Much worse	Worse	About the same	Better	Much better	Don't know
1. How would you rate your organization's brand/ image reputation relative to its competitors?	1	2	3	4	5	6
2. How would you rate the satisfaction level of your organization's customers when compared to your competitors?	1	2	3	4	5	6
3. How would you rate the financial performance / profitability of your organization compared to your competitors?	1	2	3	4	5	6
4. How would you rate the satisfaction level of your organization's shareholders when compared to your competitors?	1	2	3	4	5	6
5. How would you rate the satisfaction level of your organization's suppliers when compared to your competitors?	1	2	3	4	5	6
6. How would you rate the satisfaction level of your organization's distributors when compared to your competitors?	1	2	3	4	5	6

Part 5 Past Organizational Performance

Please read each statement and select your answer by putting a check mark (✓) on a scaled number (1 =Strongly disagree - 5 = Strongly agree; 6 = Don't know).

	Strongly disagree	disagree	Neutral	agree	Strongly agree	Don't know
1. In the last three years, the net profits in my organization have increased.	1	2	3	4	5	6
2. In the last three years, the sales revenue in my organization has increased.	1	2	3	4	5	6
3. In the last three years, the controllable costs in my organization have decreased.	1	2	3	4	5	6

Part 6 Employee Satisfaction

Please read the statement and select your answer by putting a check mark (✓) on a scaled number

(1 = Extremely dissatisfied - 5 = Extremely satisfied; 6 = Don't know)

	Extremely dissatisfied	Dissatisfied	Neutral	Satisfied	Extremely satisfied	Don't know
1. How satisfied are you with your work?	1	2	3	4	5	6
2. Overall, how satisfied are you with your organization?	1	2	3	4	5	6
3. How satisfied are you with your colleagues?	1	2	3	4	5	6

Do you have any other comments? (If yes, please write down here.)

_____

_____

To request a summary report of research results, please provide an e-mail for your convenience:

_____

Thank you for your time and participation.

Appendix C: Questionnaire (Thai)

แบบสอบถามงานวิจัย

การศึกษาภาวะผู้นำอย่างยั่งยืนและผลการปฏิบัติงานขององค์กรทางสุขภาพในประเทศไทย

คำนำ

ขอขอบคุณสำหรับความร่วมมือในการตอบแบบสอบถามงานวิจัยเกี่ยวกับภาวะผู้นำองค์กร
และการบริหารองค์กร กรุณาอ่านข้อชี้แนะ และตอบคำถามในแต่ละข้อโดยทำเครื่องหมายถูก (✓)
ในช่องที่ตรงกับคำตอบของท่านมากที่สุด หากท่านเลือกข้อผิดให้ขีดฆ่าและกรุณาใส่เครื่องหมายถูก
(✓) ที่ตัวเลือกใหม่ (หมายเหตุ: แบบสอบถามนี้ได้มีการดัดแปลงมาจากแบบสอบถามเกี่ยวกับภาวะ
ผู้นำองค์กรอย่างยั่งยืนภายใต้ลิขสิทธิ์ ©แฮร์รี่เบอร์กสไตเนอร์ 2010 และแบบสอบถามเกี่ยวกับภาวะ
ผู้นำองค์กรอย่างยั่งยืนของดร.สุภรักษ์ สุริยันเกียรติแก้ว)

ส่วนที่ 1 ข้อมูลบุคคลทั่วไป

กรุณาอ่านแต่ละข้อความและโปรดทำเครื่องหมายถูก (✓) ในช่องที่ตรงกับคำตอบของท่านมากที่สุด

1. กรุณาระบุเพศของท่าน	ชาย	หญิง		
2. อายุของท่านอยู่ในช่วงอายุใด (ปี)	ต่ำกว่า 20 45-55	20-34 55 ขึ้นไป	35-44	
3. การศึกษาสูงสุดของท่านคือ	ต่ำกว่าอนุปริญญา	อนุปริญญา	ปริญญาตรี	ปริญญาโท	ปริญญาเอก
4. ท่านทำงานที่องค์กรนี้มานานเท่าไร (ปี)	ต่ำกว่า 6 16-20	6-10 20 ขึ้นไป	11-15	
5. ท่านเป็นพนักงานระดับใดขององค์กร	หัวหน้างาน	พนักงานทั่วไป		

ส่วนที่ 2 ข้อมูลองค์กรทั่วไป

กรุณาอ่านแต่ละข้อความและ โปรดทำเครื่องหมายถูก (✔) ในช่องที่ตรงกับคำตอบของท่านมากที่สุด

1 .องค์กรของท่านมีลักษณะการเป็นเจ้าของแบบใด	บริษัทสัญชาติไทย (เจ้าของเป็นคนสัญชาติไทยมากกว่าครึ่ง)	บริษัทข้ามชาติ (เจ้าของเป็นคนต่างชาติมากกว่าครึ่ง)
2. องค์กรของท่านมีจำนวนพนักงานกี่คน	ต่ำกว่า 21 21-50 51-80 81-100 มากกว่า 100	

ส่วนที่ 3 ความคิดเห็นเกี่ยวกับภาวะผู้นำองค์กรนี้และการบริหารองค์กร

กรุณาอ่านแต่ละข้อความและ โปรดทำเครื่องหมายถูก (✔) ในช่องที่ตรงกับคำตอบของท่านมากที่สุด
(1 = ไม่เห็นด้วยอย่างยิ่ง ถึง 5 = เห็นด้วยอย่างยิ่ง; และ 6 = ไม่ทราบ)

	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	เฉยๆ	เห็นด้วย	เห็นด้วยอย่างยิ่ง	ไม่ทราบ
1. พนักงานทุกคนในองค์กรนี้ได้รับการฝึกอบรมและพัฒนาตนเองอย่างต่อเนื่อง	1	2	3	4	5	6
2. ในช่วงเวลาที่ธุรกิจประสบปัญหา งบประมาณสำหรับการฝึกอบรมและการพัฒนาบุคลากรจะเป็นสิ่งแรกที่ถูกตัด	1	2	3	4	5	6
3. ตัวแทนพนักงานสามารถเข้าไปมีส่วนร่วมในการตัดสินใจเกี่ยวกับกลยุทธ์ที่สำคัญ ๆ ของบริษัท	1	2	3	4	5	6
4. เมื่อมีข้อพิพาทระหว่างผู้นำองค์กรกับพนักงาน การเจรจาหรือตกลงกันมักจะเกิดขึ้นผ่านกระบวนการภายนอก เช่น ศาลแรงงาน	1	2	3	4	5	6
5. หากมีการเลิกจ้างพนักงานขึ้นภายในองค์กร ผู้นำองค์กรนี้มักสนับสนุนให้มีมาตรการต่าง ๆ เท่าที่ทำได้ เพื่อช่วยเหลือผู้ที่ถูกเลิกจ้าง	1	2	3	4	5	6

	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	เฉยๆ	เห็นด้วย	เห็นด้วยอย่างยิ่ง	ไม่ทราบ
6. ผู้นำองค์กรนี้เลือกที่จะทำการปลดพนักงานเมื่อมีความจำเป็น เพื่อรักษาสถานะทางการเงินขององค์กรในระยะสั้น	1	2	3	4	5	6
7. องค์กรนี้มีนโยบายการสรรหาและวางแผนสืบทอดตำแหน่ง เพื่อให้พร้อมต่อการปฏิบัติงานในตำแหน่งสำคัญ ๆ ของหน่วยงาน	1	2	3	4	5	6
8. ตำแหน่งบริหารหลายๆตำแหน่งในองค์กรนี้มักจะถูกสรรหาจากบุคคลภายนอก	1	2	3	4	5	6
9. ผู้นำองค์กรนี้ปฏิบัติต่อพนักงานด้วยความเคารพ เห็นอกเห็นใจ และมีศีลธรรมจรรยา	1	2	3	4	5	6
10. ผู้นำองค์กรนี้ไม่ใส่ใจชีวิตความเป็นอยู่ของผู้อื่น	1	2	3	4	5	6
11. การตัดสินใจเกี่ยวกับกลยุทธ์ที่สำคัญจะตัดสินโดยคณะผู้บริหารระดับสูง มิใช่โดยผู้บริหารตำแหน่งสูงสุดเพียงคนเดียว	1	2	3	4	5	6
12. ในองค์กรนี้ ผู้นำสูงสุดเพียงคนเดียวเป็นผู้แก้ไขปัญหาสถานการณ์ยุ่งยากต่างๆมิใช่คณะผู้บริหาร	1	2	3	4	5	6
13. เท่าที่ฉันเห็น องค์กรนี้ดำเนินงานอย่างมีจริยธรรมสม่ำเสมอ (จริยธรรม หมายถึงการประพฤติปฏิบัติอย่างถูกต้อง ซื่อสัตย์ และมีคุณธรรม)	1	2	3	4	5	6
14. องค์กรนี้มีแนวทางการดำเนินงานอย่างมีจริยธรรม ซึ่งพนักงานทุกคนสามารถประพฤติปฏิบัติตามได้ (จริยธรรม หมายถึงการประพฤติปฏิบัติอย่างถูกต้อง ซื่อสัตย์ และมีคุณธรรม)	1	2	3	4	5	6
15. สมาชิกทุกคนในองค์กรนี้เห็นพ้องต้องกันว่าเราต้องดำเนินงานอย่างมีจริยธรรมเสมอไม่ว่าสถานการณ์จะยากเย็นเพียงใด (จริยธรรม หมายถึงการประพฤติปฏิบัติอย่างถูกต้อง ซื่อสัตย์ และมีคุณธรรม)	1	2	3	4	5	6

	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	เฉยๆ	เห็นด้วย	เห็นด้วยอย่างยิ่ง	ไม่ทราบ
16. ฉันคิดว่าองค์กรนี้มีข้อปฏิบัติทางจริยธรรมที่เคร่งครัดเท่ากับหรือมากกว่ากฎของ PReMA (สำหรับ Global Company) หรือการปฏิบัติที่ดีในการผลิต; GMP (สำหรับ Local company)	1	2	3	4	5	6
17. การตัดสินใจเรื่องต่าง ๆ ในองค์กรนี้จะคำนึงถึงผลลัพธ์ระยะยาวเป็นที่ตั้ง	1	2	3	4	5	6
18. โดยปกติผู้นำองค์กรนี้จะมุ่งเน้นการวางแผนและกลยุทธ์ระยะยาว เช่น การลงทุนเกี่ยวกับเทคโนโลยีในระยะยาว และ/หรือ การบริหารจัดการทรัพยากรต่าง ๆ ในระยะยาว	1	2	3	4	5	6
19. บุคลากรในองค์กรนี้คิดและทำงานเพื่อความสำเร็จในระยะยาว	1	2	3	4	5	6
20. เมื่อจะมีการวางแผนเกี่ยวกับการเปลี่ยนแปลงครั้งใหญ่ในองค์กร ผู้ที่ได้รับผลกระทบสามารถมีส่วนร่วมในการพูดคุยและแสดงความคิดเห็นก่อนที่จะเกิดการเปลี่ยนแปลง	1	2	3	4	5	6
21. ผู้นำองค์กรนี้วางแผนการเปลี่ยนแปลงต่าง ๆ ในองค์กรอย่างรอบคอบ เพื่อให้แน่ใจว่าวิธีการทำงานและพฤติกรรมใหม่ต่างๆที่จะเกิดขึ้นนั้นเหมาะสมกับวัฒนธรรมในองค์กรที่เป็นอยู่ (วัฒนธรรมในองค์กร หมายถึง พฤติกรรมและประเพณีที่คนในองค์กรประพฤติปฏิบัติสืบต่อกันมา)	1	2	3	4	5	6
22. เมื่อมีความจำเป็นที่จะต้องมีการเปลี่ยนแปลงครั้งใหญ่ ผู้นำองค์กรจัดการกับการเปลี่ยนแปลงด้วยความระมัดระวัง เพื่อให้เกิดความเสียหายน้อยที่สุด	1	2	3	4	5	6
23. ผู้นำองค์กรนี้ตัดสินใจทางธุรกิจอย่างถูกต้องสำหรับองค์กร แม้ว่านักวิเคราะห์ทางการเงินหรือฝ่ายการเงินจะไม่เห็นด้วย	1	2	3	4	5	6
24. ผู้นำองค์กรนี้เชื่อว่าองค์กรจะต้องเติบโตขึ้น ไม่ว่าจะต้องแลกมาด้วยอะไรก็ตาม	1	2	3	4	5	6

	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	เฉยๆ	เห็นด้วย	เห็นด้วยอย่างยิ่ง	ไม่ทราบ
25. การรักษาสิ่งแวดล้อมเป็นสิ่งที่องค์กรให้ความสำคัญ หรือเป็นค่านิยมหลักขององค์กรที่มีอิทธิพลต่อพฤติกรรม ของพนักงาน คู่ค้า/ซัพพลายเออร์และคู่ค้า	1	2	3	4	5	6
26. องค์กรนี้ปฏิบัติตามกฎหมายสิ่งแวดล้อม แต่ไม่ได้ ปฏิบัติครบตามที่กฎหมายกำหนด	1	2	3	4	5	6
27. ผู้นำองค์กรนี้ส่งเสริมให้พนักงานมีส่วนร่วมในกิจกรรม ทางสังคมหรือกิจกรรมของชุมชนภายในเวลาทำงาน	1	2	3	4	5	6
28. สำหรับองค์กรนี้ การที่สร้างผลกำไรและอาชีพให้ พนักงานถือว่าเพียงพอแล้วต่อการอุทิศเพื่อสังคม	1	2	3	4	5	6
29. นอกเหนือจากนักลงทุน ผู้นำองค์กรนี้ให้ความสำคัญกับ ความต้องการของกลุ่มคนอื่นๆด้วย เช่น พนักงาน ลูกค้า คู่ค้า/ซัพพลายเออร์และผู้มีส่วนได้เสียทางธุรกิจ	1	2	3	4	5	6
30. ผู้นำองค์กรนี้ให้ความเคารพและทำงานอย่างใกล้ชิดกับ พนักงาน ลูกค้า คู่ค้า/ซัพพลายเออร์และผู้มีส่วนได้เสียทา ธุรกิจคนอื่นๆ	1	2	3	4	5	6
31. องค์กรนี้เลือกคู่ค้า/ซัพพลายเออร์ จากราคามากกว่า ความสัมพันธ์อันยาวนานที่มีกับบริษัท	1	2	3	4	5	6
32. ผู้นำองค์กรนี้มีวิสัยทัศน์ที่มากไปกว่าการทำผลกำไร ให้ได้มากที่สุดเท่าที่จะทำได้	1	2	3	4	5	6
33. วิสัยทัศน์ขององค์กรนี้เป็นเสมือนสิ่งกระตุ้นและเป็น แนวทางในการทำงานของสมาชิกทุกคน	1	2	3	4	5	6
34. องค์กรนี้มีวิสัยทัศน์ที่ชัดเจนที่สมาชิกทุกคนรับทราบ ร่วมกัน แบ่งปันกัน และพร้อมที่จะทำงานไปสู่วิสัยทัศน์นั้น	1	2	3	4	5	6
35. ฉันไม่แน่ใจว่าวิสัยทัศน์เพื่ออนาคตขององค์กรนี้เป็น อย่างไร	1	2	3	4	5	6

	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	เฉยๆ	เห็นด้วย	เห็นด้วยอย่างยิ่ง	ไม่ทราบ
36. องค์กรนี้สนับสนุนให้พนักงานท้าทายหรือโต้แย้งการตัดสินใจต่าง ๆ ของผู้นำได้	1	2	3	4	5	6
37. เมื่อต้องตัดสินใจเรื่องต่าง ๆ ผู้นำองค์กรมักจะตัดสินใจโดยใช้มติจากเสียงส่วนใหญ่	1	2	3	4	5	6
38. พนักงานในองค์กรนี้มีอิสระสูงในการตัดสินใจว่าควรทำงานอย่างไร ตราบที่เขาสามารถทำงานได้ผลลัพท์ตามที่องค์กรต้องการ	1	2	3	4	5	6
39. ผู้นำและผู้จัดการของเรากำหนดวัตถุประสงค์ในการทำงาน รวมทั้งวิธีการทำงานอย่างละเอียด และคอยตรวจดูความคืบหน้าในการทำงานอย่างใกล้ชิด	1	2	3	4	5	6
40. องค์กรนี้มีการทำงานร่วมกันเป็นทีมอย่างเข้มแข็ง	1	2	3	4	5	6
41. ทุกคนทำงานร่วมกันเป็นทีมได้อย่างดีในทุกระดับชั้นขององค์กร	1	2	3	4	5	6
42. ผู้นำองค์กรนี้ดูแลพนักงานราวกับว่าพนักงานเป็นทรัพยากรที่มีค่าที่สุดขององค์กร	1	2	3	4	5	6
43. แนวทางในการทำงานร่วมกันในองค์กรนั้นสามารถผูกมัดจิตใจของพนักงานทุกคนไว้ด้วยกัน	1	2	3	4	5	6
44. องค์กรนี้ชอบให้พนักงานพบปะพูดคุยอย่างไม่เป็นทางการระหว่างเวลาทำงาน เพื่อเปิดโอกาสให้แลกเปลี่ยนข้อมูลหรือความคิดเห็นต่าง ๆ ในการทำงาน	1	2	3	4	5	6
45. องค์กรนี้เปิดโอกาสให้มีการแบ่งปันข้อมูลและความคิดเห็นต่าง ๆ ทั้งในแบบที่เป็นทางการและไม่เป็นทางการ	1	2	3	4	5	6
46. องค์กรนี้มีกระบวนการที่สนับสนุนการรวบรวมข้อมูลจากแหล่งความรู้ต่าง ๆ	1	2	3	4	5	6

	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	เฉยๆ	เห็นด้วย	เห็นด้วยอย่างยิ่ง	ไม่ทราบ
47. องค์กรนี้มีกระบวนการที่สนับสนุนการพัฒนาแผนงานจากความรู้ของทุกๆคน	1	2	3	4	5	6
48. ในองค์กรนี้เราสามารถไว้วางใจว่าสมาชิกทุกคนจะรักษาคำพูด	1	2	3	4	5	6
49. สมาชิกทุกคนในองค์กรนี้ปฏิบัติตัวต่อกันด้วยความเข้าใจว่าเราจะดูแลซึ่งกันและกันให้ดีที่สุด	1	2	3	4	5	6
50. สมาชิกทุกคนในองค์กรนี้สามารถทำงานอย่างมีความคิดริเริ่มสร้างสรรค์หรือสร้างนวัตกรรมใหม่ๆได้แม้ว่าพวกเขาจะไม่ได้ถูกจ้างมาทำงานในส่วนที่เกี่ยวข้องกับฝ่ายงานวิจัยและพัฒนา	1	2	3	4	5	6
51. องค์กรนี้มีระบบที่คอยส่งเสริม ประเมิน ติดตามผลและให้รางวัลกับนวัตกรรมความคิดสร้างสรรค์	1	2	3	4	5	6
52. ผู้นำองค์กรนี้ยอมรับได้ว่านวัตกรรมใหม่ ๆ มีความเสี่ยงที่จะเกิดความผิดพลาดและล้มเหลว	1	2	3	4	5	6
53. องค์กรของท่านมีความก้าวหน้าทางนวัตกรรมมากกว่าเมื่อเปรียบเทียบกับคู่แข่ง	1	2	3	4	5	6
54. ฉันภูมิใจที่จะบอกคนอื่น ๆ ว่าฉันทำงานให้กับองค์กรนี้	1	2	3	4	5	6
55. สมาชิกทุกคนในองค์กรตั้งใจทำงานอย่างดีที่สุดเพื่อองค์กรนี้เพราะว่าองค์กรให้การดูแลทุกคนอย่างดีเยี่ยม	1	2	3	4	5	6
56. การจัดหา/ผลิตสินค้าและบริการที่มีคุณภาพที่ดีที่สุดเป็นสิ่งที่องค์กรนี้ภูมิใจ	1	2	3	4	5	6
57. การพัฒนาคุณภาพให้สูงขึ้นเป็นการเพิ่มขีดความสามารถในการผลิตสินค้าและบริการ เพื่อกำไรที่มากขึ้น	1	2	3	4	5	6
58. องค์กรนี้มีข้อปฏิบัติสำหรับการควบคุมคุณภาพที่ชัดเจนและเคร่งครัด	1	2	3	4	5	6

	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	เฉยๆ	เห็นด้วย	เห็นด้วยอย่างยิ่ง	ไม่ทราบ
59. องค์กรนี้มีข้อปฏิบัติที่ชัดเจนและเคร่งครัดสำหรับการจัดการกับสินค้าที่ไม่ผ่านการประเมินคุณภาพ	1	2	3	4	5	6

ส่วนที่ 4 ผลสำเร็จขององค์กรที่รับรู้ได้

กรุณาอ่านแต่ละข้อความและ โปรดทำเครื่องหมายถูก (✔) ในช่องที่ตรงกับคำตอบของท่านมากที่สุด

(1 = แย่กว่ามาก ถึง 5 = ดีกว่ามาก และ 6 = ไม่ทราบ)

	แย่กว่ามาก	แย่กว่า	พอๆกัน	ดีกว่า	ดีกว่ามาก	ไม่ทราบ
1. ท่านจะเปรียบเทียบตรายี่ห้อและภาพลักษณ์ (แบรนด์) บริษัทของท่านกับบริษัทคู่แข่งอย่างไร	1	2	3	4	5	6
2. ท่านจะเปรียบเทียบระดับพึงพอใจของลูกค้าต่อบริษัทของท่านกับบริษัทคู่แข่งอย่างไร	1	2	3	4	5	6
3. ท่านจะเปรียบเทียบความสามารถในการทำกำไรของบริษัทของท่านกับคู่แข่งอย่างไร	1	2	3	4	5	6
4. ท่านจะเปรียบเทียบระดับความพึงพอใจของผู้ลงทุนในบริษัทของท่านกับคู่แข่งอย่างไร	1	2	3	4	5	6
5. ท่านจะเปรียบเทียบระดับความพึงพอใจของคู่ค้า/ ซัพพลายเออร์ต่อบริษัทของท่านกับบริษัทคู่แข่งอย่างไร	1	2	3	4	5	6
6. ท่านจะเปรียบเทียบระดับความพึงพอใจของผู้กระจายสินค้า/ ดิสทริบิวเตอร์ต่อบริษัทของท่านกับบริษัทคู่แข่งอย่างไร	1	2	3	4	5	6

ส่วนที่ 5 ผลสำเร็จขององค์กรในอดีต

กรุณาอ่านแต่ละข้อความและโปรดทำเครื่องหมายถูก (✔) ในช่องที่ตรงกับคำตอบของท่านมากที่สุด
(1 = ไม่เห็นด้วยอย่างยิ่ง ถึง 5 = เห็นด้วยอย่างยิ่ง และ 6 = ไม่ทราบ)

	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	เฉยๆ	เห็นด้วย	เห็นด้วยอย่างยิ่ง	ไม่ทราบ
1. ในช่วง 3 ปีที่ผ่านมา กำไรสุทธิของบริษัทท่านเพิ่มมากขึ้น	1	2	3	4	5	6
2. ในช่วง 3 ปีที่ผ่านมา ยอดขายของบริษัทท่านเพิ่มมากขึ้น	1	2	3	4	5	6
3. ในช่วง 3 ปีที่ผ่านมา ต้นทุนของบริษัทท่านได้ลดน้อยลง	1	2	3	4	5	6

ส่วนที่ 6 ความพึงพอใจของพนักงาน

กรุณาอ่านแต่ละข้อความและโปรดทำเครื่องหมายถูก (✔) ในช่องที่ตรงกับคำตอบของท่านมากที่สุด
(1 = ไม่เห็นด้วยอย่างยิ่ง ถึง 5 = เห็นด้วยอย่างยิ่ง และ 6 = ไม่ทราบ)

	ไม่เห็นด้วยอย่างยิ่ง	ไม่เห็นด้วย	เฉยๆ	เห็นด้วย	เห็นด้วยอย่างยิ่ง	ไม่ทราบ
1. ท่านมีความพึงพอใจกับงานของท่านในบริษัท/องค์กรนี้ในระดับใด	1	2	3	4	5	6
2. โดยรวม ๆ ท่านมีความพึงพอใจกับบริษัท/องค์กรนี้มากน้อยเพียงใด	1	2	3	4	5	6
3. ท่านมีความพึงพอใจกับเพื่อนร่วมงานของท่านในบริษัท/องค์กรนี้ในระดับใด	1	2	3	4	5	6

ท่านมีความคิดเห็นอย่างอื่นหรือไม่ (ถ้ามี โปรดระบุ)

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ท่านสามารถขอรายงานผลสรุปของงานวิจัยนี้ได้ เพื่อความสะดวกของท่านกรุณาระบุอีเมล์ที่ท่าน
ต้องการให้มีการจัดส่ง:

_____

ขอบคุณสำหรับเวลาและความร่วมมือในการกรอกแบบสอบถามนี้

Appendix D: T-test Statistic for Independent Samples

T-test Statistic for Independent Samples of Manager and Employee

The t-test analysis was employed for investigating statistically significant differences in perceptions between managers and employees with regard to which underlying SL factors predict enhanced SPO and EMS in Thai pharmaceutical organizations.

The hypothesis for this analysis were

H.D1 There is a difference in perceptions between managers and employees about which underlying SL factors predict enhanced SPO in Thai pharmaceutical organizations

H.D2 There is a difference in perceptions between managers and employees about which underlying SL factors predict enhanced EMS in Thai pharmaceutical organizations

For the analysis, the researcher classified two job levels by using 1 = managers and 2 = employees accordingly to the questionnaire below,

5. Are you a manager?	Yes ☐	No ☐	

The descriptive statistics were described in the Table D1. There were 208 valid manager responses and 335 valid employee responses. The means were within the expected ranges base on the five-point Likert scale for all dependent variables, based on the t-test statistic. Mean of SPO for managers is 4.1851, while mean of SPO for employees is 3.9478. Furthermore, means of EMS are 3.7179 and 3.7572 for managers and employees respectively.

Table D1: Descriptive Information for T-test Statistic

Group Statistics					
LEVEL		N	Mean	Std. Deviation	Std. Error Mean
SPO	1	208	4.1851	0.59480	0.04124
	2	335	3.9478	0.42950	0.02347
EMS	1	208	3.7179	0.76177	0.05282
	2	335	3.7572	0.68495	0.03742

T-test for equality of means between the independent samples of managers and employees and the dependent variables of SPO and EMS was summarized in the Table D2.

For SPO, Levene's test for equality of variances between the independent samples and SPO indicates equal variances not assumed (F = 22.126, p = 0.000). The equal variances t-test values are significant at the 1% level (t = 5.002, df = 340.601, p = 0.000), the result thus indicates that there is a difference in perceptions between the groups in terms of SPO. The sign of the mean difference corresponds to the sign of the t value. The positive t value indicates that the mean response scale for manager group is significantly greater than employee group. The result supports hypothesis that indicates there is a difference in perceptions between managers and employees about which underlying SL factors predict enhanced SPO in Thai pharmaceutical organizations.

For EMS, Levene's test for equality of variances between the independent samples and SPO indicates equal variances not assumed (F = 3.944, p = 0.048). The equal variances t-test values are not significant (t = -0.607, df = 403.905, p = 0.544), the result thus indicates that a difference in perceptions between the groups in terms of EMS is not statistically significant. The sign of the mean difference corresponds to the sign of the t value. The negative t value indicates that the mean response scale for manager group is lower than employee group. The result do not support hypothesis that indicates there is a difference in perceptions between managers and employees about which underlying SL factors predict enhanced EMS in Thai pharmaceutical organizations.

Table D2: T-test Result

| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | | |
| | | F | Sig. | t | df | Sig. (2-tailed) | Mean Difference | Std. Error Difference | 95% Confidence Interval of the Difference | |
									Lower	Upper
SPO	Equal variances assumed	22.126	0.000	5.385	541	0.000	0.23733	0.04407	0.15076	0.32391
	Equal variances not assumed			5.002	340.601	0.000	0.23733	0.04745	0.14400	0.33067
EMS	Equal variances assumed	3.944	0.048	-0.622	541	0.534	-0.03927	0.06315	-0.16331	0.08478
	Equal variances not assumed			-0.607	403.905	0.544	-0.03927	0.06473	-0.16652	0.08799

Independent Samples Test

For the hypothesis on SPO, which is below.

H.D1 There is a difference in perceptions between managers and employees about which underlying SL factors predict enhanced SPO in Thai pharmaceutical organizations

The result supports hypothesis that indicates there is a difference in perceptions between managers and employees about which underlying SL factors predict enhanced SPO in Thai pharmaceutical organizations. Based on the t-test results, the researcher further investigated the different patterns of the two samples.

The researcher further investigated the differences between the manager and employee subgroups, and perceived sustainability performance outcomes (SPO), to test H.D1.1, H.D1.2 for H.D1 (described below) by multiple regression. The objective was to gain further insights into the different perceptions between managers and employees

about which underlying SL factors positively predict SPO in Thai pharmaceutical organizations.

H.D1.1 Managers perceive that underlying SL factors significantly predict enhanced perceived sustainability performance outcomes (SPO) for Thai pharmaceutical organizations.

H.D1.2 Employees perceive that underlying SL factors significantly predict enhanced perceived sustainability performance outcomes (SPO) for Thai pharmaceutical organizations.

A summary of the regression results for the differences between the manager and employee perspective, and perceived sustainability performance outcomes (SPO) to test H.D1.1, H.D1.2 was summarized in the table D3 and D4 respectively. The summary of the differences between 2 subgroups results was illusted in the Table D5.

Table D3: Regression Result for Perceived SPO for Managers

	Coefficients^a								
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**95.0% Confidence Interval for B**		**Collinearity Statistics**	
	B	**Std. Error**	**Beta**			**Lower Bound**	**Upper Bound**	**Tolerance**	**VIF**
1 (Constant)	-1.240	0.438		-2.831	0.005	-2.104	-0.376		
DEPE	0.038	0.040	0.046	0.959	0.339	-0.040	0.116	0.870	1.150
LARE	0.007	0.051	0.006	0.128	0.898	-0.094	0.107	0.827	1.209
STRE	0.139	0.051	0.144	2.702	0.008	0.037	0.240	0.701	1.427
SUPL	0.033	0.049	0.037	0.669	0.504	-0.063	0.128	0.653	1.531
VAST	0.125	0.043	0.145	2.906	0.004	0.040	0.210	0.801	1.248
CEOL	0.270	0.049	0.269	5.475	0.000	0.173	0.367	0.824	1.214
ETHI	0.028	0.044	0.031	0.632	0.528	-0.058	0.113	0.809	1.237
LTPE	0.085	0.043	0.105	1.986	0.049	0.001	0.170	0.714	1.400
COCH	0.038	0.046	0.046	0.822	0.412	-0.053	0.129	0.629	1.589
FMIN	0.086	0.035	0.124	2.455	0.015	0.017	0.155	0.784	1.276
ENRE	0.100	0.038	0.130	2.602	0.010	0.024	0.176	0.798	1.254
SORE	0.117	0.033	0.179	3.552	0.000	0.052	0.183	0.786	1.272
STCO	-0.055	0.039	-0.073	-1.419	0.158	-0.132	0.022	0.745	1.342
SSVI	0.054	0.041	0.071	1.330	0.185	-0.026	0.135	0.703	1.423
DEDE	0.060	0.036	0.081	1.676	0.095	-0.011	0.132	0.863	1.159
SEMA	0.236	0.054	0.222	4.395	0.000	0.130	0.341	0.781	1.280

Coefficients^a									
Model	**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**95.0% Confidence Interval for B**		**Collinearity Statistics**	
	B	**Std. Error**	**Beta**			**Lower Bound**	**Upper Bound**	**Tolerance**	**VIF**
TEOR	0.229	0.065	0.198	3.527	0.001	0.101	0.357	0.634	1.578
ENCU	-0.070	0.038	-0.094	-1.844	0.067	-0.144	0.005	0.759	1.317
KSRE	-0.016	0.038	-0.021	-0.420	0.675	-0.092	0.060	0.815	1.227
TRUS	0.013	0.049	0.013	0.267	0.790	-0.084	0.110	0.783	1.277
SSIN	-0.003	0.045	-0.003	-0.067	0.947	-0.093	0.087	0.738	1.354
STEN	0.039	0.049	0.041	0.782	0.435	-0.059	0.136	0.738	1.356
QUAL	-0.122	0.044	-0.138	-2.780	0.006	-0.209	-0.035	0.806	1.241

a. Dependent Variable: SPO

Table D4: Regression Result for Perceived SPO for Employees

Coefficients^a										
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**95.0% Confidence Interval for B**		**Collinearity Statistics**	
		B	**Std. Error**	**Beta**			**Lower Bound**	**Upper Bound**	**Tolerance**	**VIF**
1	(Constant)	2.045	0.448		4.570	0.000	1.165	2.926		
	DEPE	-0.015	0.029	-0.027	-0.520	0.603	-0.072	0.042	0.907	1.102
	LARE	-0.009	0.039	-0.014	-0.239	0.811	-0.086	0.067	0.709	1.410
	STRE	0.171	0.050	0.185	3.455	0.001	0.074	0.269	0.837	1.194
	SUPL	0.072	0.039	0.094	1.845	0.066	-0.005	0.150	0.916	1.091
	VAST	-0.003	0.042	-0.004	-0.070	0.944	-0.086	0.081	0.866	1.154
	CEOL	-0.048	0.047	-0.060	-1.019	0.309	-0.140	0.044	0.684	1.462
	ETHI	0.035	0.035	0.054	1.008	0.314	-0.034	0.104	0.825	1.213
	LTPE	-0.004	0.041	-0.005	-0.095	0.924	-0.084	0.076	0.776	1.288
	COCH	0.012	0.033	0.019	0.350	0.727	-0.054	0.077	0.813	1.230
	FMIN	0.131	0.028	0.252	4.622	0.000	0.075	0.186	0.805	1.242
	ENRE	0.086	0.033	0.144	2.597	0.010	0.021	0.151	0.781	1.281
	SORE	0.051	0.032	0.084	1.606	0.109	-0.011	0.113	0.869	1.150
	STCO	0.082	0.035	0.135	2.339	0.020	0.013	0.151	0.721	1.387
	SSVI	0.021	0.034	0.033	0.612	0.541	-0.046	0.087	0.814	1.228
	DEDE	0.011	0.034	0.017	0.315	0.753	-0.056	0.077	0.797	1.255
	SEMA	-0.068	0.041	-0.089	-1.653	0.099	-0.149	0.013	0.818	1.223
	TEOR	0.054	0.057	0.050	0.953	0.341	-0.058	0.167	0.871	1.148

Coefficientsᵃ										
Model		**Unstandardized Coefficients**		**Standardized Coefficients**	**t**	**Sig.**	**95.0% Confidence Interval for B**		**Collinearity Statistics**	
		B	**Std. Error**	**Beta**			**Lower Bound**	**Upper Bound**	**Tolerance**	**VIF**
	ENCU	-0.047	0.034	-0.077	-1.387	0.166	-0.115	0.020	0.778	1.285
	KSRE	-0.123	0.044	-0.154	-2.803	0.005	-0.209	-0.037	0.791	1.263
	TRUS	-0.019	0.041	-0.026	-0.465	0.642	-0.099	0.061	0.789	1.267
	SSIN	-0.017	0.034	-0.026	-0.496	0.620	-0.084	0.050	0.852	1.174
	STEN	0.056	0.043	0.073	1.322	0.187	-0.028	0.140	0.789	1.268
	QUAL	0.089	0.041	0.125	2.193	0.029	0.009	0.169	0.742	1.347

a. Dependent Variable: SPO

Table D5: Summary of Regression Result and Model Fit for Managers and Employees

Unstandardised Coefficients (B)

Variables	Managers	Employees
(Constant)	-1.240	2.045
DEPE	0.038	-0.015
LARE	0.007	0.009
STRE	0.139**	0.171**
SUPL	0.033	0.072
VAST	0.125**	-0.003
CEOL	0.270**	-0.048
ETHI	0.028	0.035
LTPE	0.085*	-0.004
COCH	0.038	0.012
FMIN	0.086*	0.131**
ENRE	0.100**	0.086*
SORE	0.117**	0.051
STCO	-0.055	0.082*
SSVI	0.054	0.021
DEDE	0.060	0.011

Variables	Managers	Employees
SEMA	0.236**	-0.068
TEOR	0.229**	0.054
ENCU	-0.070	-0.047
KSRE	0.016	0.123**
TRUS	0.013	-0.019
SSIN	-0.003	-0.017
STEN	0.039	0.056
QUAL	0.122**	0.089*

Model Fit:

N	208	335
R square (R2)	0.633	0.255
Adjusted R square (R^2)	0.587	0.200
F-Value	13.791**	4.623**

Regarding the regression model for managers (see Table D5), the result showed R2 of 63.3%, adjusted R^2 of 58.7%, F-statistics of 13.791 with $p<0.01$. It reports that the underlying SL factors based on the independent sample of managers can explain 58.7% of the variation in perceived SPO of Thai pharmaceutical organizations. Overall, the model is significant at the 1% level, indicating that at least one independent variable that has a significant relationship with perceived SPO.

As shown in Table D3, the unstandardised coefficients (B) of the regression model provided evidence that managers perceive that Long-term Staff Retention (B=0.139**), Valuing Staff (B=0.125**), CEO and Top-Team Leadership (B=0.270**), Long-Term Perspective (B=0.085*), Financial market independence (B=0.086*), Environmental responsibility (B=0.100**), Social responsibility (B=0.117**), Self-management (B=0.236**), Team orientation (B=0.229**) and Quality (B=0.122**) positively predict enhanced SPO at 1% (**) and 5% (*) significance level. Therefore, H.D1.1 is supported, showing positive predictive relationships between these essential SL factors and perceived SPO.

Regarding the regression model for employees (see Table D5), the result showed R^2 of 25.5%, adjusted R^2 of 20.0%, F-statistics of 4.623 with $p<0.01$. It reports that the underlying SL factors based on the independent sample of managers can explain 20.0% of the variation in perceived SPO of Thai pharmaceutical organizations. Overall, the model is significant at the 1% level, indicating that at least one independent variable that has a significant relationship with perceived SPO.

As shown in Table D4, the unstandardised coefficients (B) of the regression model provided evidence that employees perceive that Long-term Staff Retention (B=0.171**), Financial market independence (B=0.131**), Environmental responsibility (B=0.086*), Stakeholder consideration (B=0.082*), Knowledge sharing and retention (B=0.123**) and Quality (B=0.089*) positively predict enhanced SPO at 1% (**) and 5% (*) significance level. Therefore, H.D1.2 is supported, showing positive predictive relationships between these essential SL factors and perceived SPO.

T-test Statistic for Independent Samples of Male and Female

The t-test analysis was employed for investigating statistically significant differences in perceptions between male and female with regard to which underlying SL factors predict enhanced SPO and EMS in Thai pharmaceutical organizations.

The hypothesis for this analysis were

H.D3 There is a difference in perceptions between male and female about which underlying SL factors predict enhanced SPO in Thai pharmaceutical organizations

H.D4 There is a difference in perceptions between male and female about which underlying SL factors predict enhanced EMS in Thai pharmaceutical organizations

For the analysis, the researcher classified two job levels by using 1=male and 2=female accordingly to the questionnaire below,

1. Are you male or female?	□ Male □ Female

The descriptive statistics were described in the Table D6. There were 194 valid male responses and 349 valid female responses. The means were within the expected ranges base on the five-point Likert scale for all dependent variables, based on the t-test

statistic. Mean of SPO for male is 4.1057, while mean of SPO for female is 4.0014. Furthermore, means of EMS are 3.7835 and 3.7192 for male and female respectively.

Table D6: Descriptive Information for T-test Statistic

Group Statistics					
LEVEL		N	Mean	Std. Deviation	Std. Error Mean
SPO	1	194	4.1057	0.41507	0.02980
	2	349	4.0014	0.55572	0.02975
EMS	1	194	3.7835	0.77384	0.05556
	2	349	3.7192	0.68002	0.03640

T-test for equality of means between the independent samples of male and female and the dependent variables of SPO and EMS was summarized in the Table D7.

For SPO, Levene's test for equality of variances between the independent samples and SPO indicates equal variances not assumed (F = 4.090, p = 0.044). The equal variances t-test values are significant at the 5% level (t = 2.282, df = 541, p = 0.023), the result thus indicates that there is a difference in perceptions between the groups in terms of SPO. The sign of the mean difference corresponds to the sign of the t value. The positive t value indicates that the mean response scale for male group is significantly greater than female group. The result supports hypothesis that indicates there is a difference in perceptions between male and female about which underlying SL factors predict enhanced SPO in Thai pharmaceutical organizations.

For EMS, Levene's test for equality of variances between the independent samples and SPO indicates equal variances not assumed (F = 7.788, p = 0.005). The equal variances t-test values are not significant (t = 1.004, df = 541, p = 0.316), the result thus indicates that a difference in perceptions between the groups in terms of EMS is not statistically significant. The sign of the mean difference corresponds to the sign of the t value. The positive t value indicates that the mean response scale for male group is lower than female group. The result do not support hypothesis that indicates there is a difference in perceptions between male and female about which underlying SL factors predict enhanced EMS in Thai pharmaceutical organizations.

Table D7: T-test Result

		Levene's Test for Equality of Variances		t-test for Equality of Means							
Independent Samples Test											
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference		
									Lower	Upper	
SPO	Equal variances assumed	4.090	0.044	2.282	541	0.023	0.10424	0.04567	0.01452	0.19396	
	Equal variances not assumed			2.476	496.083	0.014	0.10424	0.04211	0.02151	0.18697	
EMS	Equal variances assumed	7.788	0.005	1.004	541	0.316	0.06431	0.06402	-0.06146	0.19007	
	Equal variances not assumed			0.968	357.703	0.334	0.06431	0.06642	-0.06632	0.19493	

T-test Statistic for Independent Samples of International and Local Company

       The t-test analysis was employed for investigating statistically significant differences in perceptions between international and local company with regard to which underlying SL factors predict enhanced SPO and EMS in Thai pharmaceutical organizations.

       The hypothesis for this analysis were

       H.D3 There is a difference in perceptions between international and local company about which underlying SL factors predict enhanced SPO in Thai pharmaceutical organizations

       H.D4 There is a difference in perceptions between international and local company about which underlying SL factors predict enhanced EMS in Thai pharmaceutical organizations

For the analysis, the researcher classified two job levels by using 1= local and 2= international company accordingly to the questionnaire below,

1. What is your organization's ownership type?	Thai ownership ☐ (More than half of owners are Thais)	Foreign Ownership ☐ (More than half of owners are Foreigners)

The descriptive statistics were described in the Table D8. There were 104 valid local company responses and 439 valid international company responses. The means were within the expected ranges base on the five-point Likert scale for all dependent variables, based on the t-test statistic. Mean of SPO for local is 3.8846, while mean of SPO for international company is 4.0752. Furthermore, means of EMS are 3.7853 and 3.7320 for local and international company respectively.

Table D8: Descriptive Information for T-test Statistic

Group Statistics					
LEVEL		N	Mean	Std. Deviation	Std. Error Mean
SPO	1	104	3.8846	0.72966	0.07155
	2	439	4.0752	0.43841	0.02092
EMS	1	104	3.7853	0.70584	0.06921
	2	439	3.7320	0.71746	0.03424

T-test for equality of means between the independent samples of international and local company and the dependent variables of SPO and EMS was summarized in the Table D9.

For SPO, Levene's test for equality of variances between the independent samples and SPO indicates equal variances not assumed (F = 72.81, p = 0.000). The equal variances t-test values are significant at the 5% level (t = -2.556, df = 121.163, p = 0.012), the result thus indicates that there is a difference in perceptions between the groups in terms of SPO. The result supports hypothesis that indicates there is a difference in perceptions

between international and local company about which underlying SL factors predict enhanced SPO in Thai pharmaceutical organizations.

For EMS, Levene's test for equality of variances between the independent samples and SPO indicates equal variances assumed (F = 1.138, p = 0.287). The equal variances t-test values are not significant (t = 0.683, df = 541, p = 0.495), the result thus indicates that a difference in perceptions between the groups in terms of EMS is not statistically significant. The result do not support hypothesis that indicates there is a difference in perceptions between international and local company about which underlying SL factors predict enhanced EMS in Thai pharmaceutical organizations.

Table D9: T-test Result

		Levene's Test for Equality of Variances		t-test for Equality of Means					95% Confidence Interval of the Difference	
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	Lower	Upper
SPO	Equal variances assumed	72.820	0.000	-3.447	541	0.001	-0.19056	0.05528	-0.29915	-0.08196
	Equal variances not assumed			-2.556	121.163	0.012	-0.19056	0.07455	-0.33814	-0.04297
EMS	Equal variances assumed	1.138	0.287	0.683	541	0.495	0.05329	0.07800	-0.09994	0.20652
	Equal variances not assumed			0.690	157.376	0.491	0.05329	0.07722	-0.09923	0.20581