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**Master's Thesis**

**A Study of Strategy Implementation as Express  
through Sun Tzu's Principles of War**



**Student: Chih-hsiung Chou**

**Advisor: Dr. Wann-Yih Wu**

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碩士論文

**A Study of Strategy Implementation As Expressed  
through Sun Tzu's Principles of War**

研究生：周志雄

本論文業經審查及口試合格特此證明

論文考試委員：

吳萬益 林凱可 李奇勳 溫頓  
指導教授：吳萬益  
系(所)主管：康信鴻

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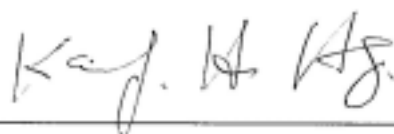
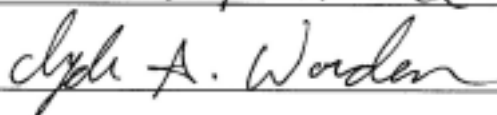
Thesis Approved:



Thesis Adviser



Chi Hsun Lee



Head of the Institute

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## Abstract

**Keywords:** Sun Tzu, The Art of War, Situational Appraisal, Strategy Implementation, Strategic Control

Business managers are facing the dynamic environment nowadays, and encountering more and more difficulties in decision-making. In order to formulate suitable strategies, they must consider all aspects of dynamic environments and situations which they meet. Sun Tzu's *The Art of War* is probably the oldest military book in Chinese and the principles which Sun Tzu advocated are still valuable in many business operations. When business managers can apply Sun Tzu's principles into consideration in strategic decision-making, they will create more and more strategies and methods in solving the countless problems.

This investigation will be focused on the top 200 largest corporations in Taiwan and the purposes of this study are as follows: (1) To evaluate which principles of Sun Tzu's *The Art of War* could be applied in the real business enterprises when business managers formulate their competitive strategies, (2) To evaluate whether different kinds of firms adopt different Sun Tzu's principles, (3) To investigate how the levels of adoptions on Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control impact on a firm's acquiring its key success factors and achieving its business performances.

Results of this study are as follows.

1. Sun Tzu's principles of war can be used in strategic management and business operations. It has been shown that there are significant interrelationships between Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control.
2. If firms' adoptions of Sun Tzu's principles of situation appraisal, strategy implementation and strategic control are higher, it will be easier for them to acquire their key success factors, and their business performances will be great.
3. Firm in high-tech industries most adopt Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control in business operation, and they easily acquire their key success factors. Therefore, their business performances are usually better.
4. The higher firms adopt Sun Tzu' principles of internal environment appraisal in situation appraisal, adaptability in strategy implementation, security in strategic control, the easier do they get the marketing ability as their key success factors. Also their business performances will be better.

## 摘要

**關鍵字：**孫子兵法、環境評估、策略執行、策略控制

在現今快速變動的環境下，經理人在制定策略時，面臨到許許多多的困難。為了要制定適合公司的競爭策略，就必須考慮內外部環境的變化及公司所擁有的各項資源。雖然「孫子兵法」是中國最古老的兵法典籍，但其中所提到的多項原則仍然能被應用於策略思考中，尤其也能被應用於企業的經營上。現代的經理人，若能將孫子兵法的原則與企業經營融合在一起思考，則便能併發出更多變而有彈性的策略及方法來解決企業經營所面臨的問題。

本研究的研究範圍界定在國內之主要大型企業，將以中華徵信所出版之「2001年版台灣地區 TOP5000 大型企業排名」，前 200 大型企業為母體，本研究之目的如下所示：(1) 探討孫子兵法所提列的各項原則中，那些原則是現今的企業經理人在策略制定時，所引以為參考的要點；(2) 探討不同的產業的企業是否採取不同的孫子兵法所提列的原則於企業經營上；和(3) 探討企業在環境評估、策略執行及策略控制方面，採用孫子兵法原則的程度對其企業獲得關鍵成功因素及經營績效的影響程度。

本研究之主要結論如下：

1. 孫子兵法中所提列之作戰原則的確可以應用於企業運作上，且孫子兵法中關於環境評估、策略執行與策略控制的原則彼此間有相互影響之關係。
2. 企業採取孫子兵法中關於環境分析、策略執行與策略控制之原則的程度越高者，越容易獲致他們的關鍵成功因素，且經營績效會表現地較好。
3. 高科技的廠商採取孫子兵法的原則於企業活動的運作上其程度通常比在其他領域的廠商來得高，因此，也越易獲致他們的關鍵成功因素，且經營績效通常較好。
4. 企業若採取孫子兵法中關於內部環境分析原則、適應原則及機密原則的程度越高者，越易獲致行銷能力方面的關鍵成功因素，且整體績效表現會較好。

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# Chapter

## Introduction

### 1.1 Research Background

Business managers are facing the dynamic environments nowadays, and encountering more and more difficulties in decision-making. In order to formulate suitable strategies, they must consider all aspects of dynamic environments and situations which they meet. Generally speaking, there are two approaches to make competitive decision-making - the science and the art. It seems easier to apply the scientific thought in strategic decision-making. But the research literature tends to indicate that to make the strategies more effectively, to apply the art of thought may be essential. Sun Tzu's *The Art of War* is probably the oldest military book in Chinese and the principles which Sun Tzu advocated are still valuable in many business operations nowadays. When business managers can take the principles of *The Art of War* into consideration in strategic decision-making, they will create more and more strategies and methods in solving the countless problems.

The Chinese saying "the marketplace is a battlefield" (Tung, 1994) reflects that it is really hard for business managers to operate their corporates in the marketplaces. Sun Tzu advocated that when countries prepare to involve in the war, they must consider lots of things, such as the weapons, the armies, the terrain, the logistic supports, and so on. In the business world, we must also check lots of factors in competition, such as the culture, the stakeholders, the resource owned, the policies, and so on. It is well known that Sun Tzu's principles of war have great influences in today's military thought, although it was written around 2,500 years ago. The wide acceptance of Sun Tzu's thought can be noted

by his book - *The Art of War*, which has translated into many languages and many military schools take it as the “must read” book around the world (Wee, Lee and Hidajat, 1991). Many scholars have advocated that Sun Tzu’s principles can also be applied to business practices (Wee et al., 1991; Ames, 1993; Chen, 1994; Wong, Maher and Lee, 1998). Therefore, it is believed that Sun Tzu’s *The Art of War* is valuable for business management especially for firms competing in the serious marketplaces (Wee, 1994).

As the Mainland China has aggressively open its marketplaces to the world, the thought of ancient Chinese scholars may be viewed as valuable when firms intend to enter the Chinese markets and to take a good position. Among the thought of ancient Chinese philosophers such as Confucius, Lao Tzu, Mencius, Sun Tzu’s thought seems to be more appropriate in strategic decision-making. The famous maxim “To subdue the enemy’s army without fighting at all” strengthens the core of Sun Tzu’s strategic thinking. It emphasizes that we must always get the relative competitive positions and the enemies will be defeated even without waging war at all.

Although we know that it is useful to adopt Sun Tzu’s principles in competing, what we are interested in is which Sun Tzu’s principles are exactly implemented in the true world. “Do the firms really get the key success factors just because they follow Sun Tzu’s principles?” is also the focus of this study. Therefore, this research is to collect the principles extracted from *The Art of War* and to make it more distinct.

To evaluate these issues, we have to critically review the existing literature and verify whether Sun Tzu’s principles of war really help a firm to acquire its key success factors and to achieve expected performance. Among others, Wee et al. had proposed a strategic management model, called Sun Tzu’s Art of War model to examine in a systematic way to understand which business practices are capable of being described and understood in the language of war.

According to Wee et al., some principles of Sun Tzu's are found more relevant to management. First, before fighting, one must make detailed planning. Nowadays, there are lots of planning tools, but SWOT (strengths, weaknesses, opportunities, and threats) approach is usually conducted by business managers before constructing their corporate strategies. The essential of SWOT analysis is to determine the firm's strengths and weaknesses relative to those of its competitors and to find out possible opportunities and threats of the environment which a firm may encounter in the competition. The purpose of SWOT analysis is to make the firm get more power to compete with others. At the first of the classic, Sun Tzu emphasized that:

War is a vital matter of state. It is the field on which life or death is determined and the road that leads to either survival or ruin, and must be examined with the greatest care\*.

Thus we must measure the differences between the competitors and us:

Therefore, to gauge the outcome of war we must appraise the situation on the basis of the following five criteria, and compare the two sides by assessing their relative strengths. The first of the five criteria is the way (tao), the second is climate, the third is terrain, the fourth is command, and the fifth is regulation.

Hence, if we can gauge carefully, we can make the victory complete:

Know the other, know yourself, and the victory will not be at risk; Know the ground, know the natural conditions, and the victory can be total.

Second, when we have made the corporate strategy, we must make it work. As Sun Tzu's opinions, we would prefer that fighting be avoided. If the campaign is unavoidable, it is important that one should make sure to get one's invulnerability. Therefore, if we want to get the best performance of the combat mission, we must follow the principles such as swiftness, adaptability, deceptiveness, and so on. In the implementation of strategy, Sun Tzu commented that:

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\* All the sentences of Sun Tzu's *The Art of War* in this study are abstracted from Roger Ames (1993).

For this reason, the victorious army only enters battle after having first won the victory, while the defeated army only seeks victory after having first entered the fray.

Speed in execution will make the enemies having no time to prepare his defenses against one's attacking:

War is such that the supreme consideration is speed. This is to take advantage of what is beyond the reach of the enemy, to go by way of routes where he least expects you, and to attack where he has made no preparations.

Through the deception, we may get the strategic advantages:

The place we have chosen to give the enemy battle must be kept from him. If he cannot anticipate us, the positions the enemy must prepare to defend will be many. And if the positions he must prepare to defend are many, then any unit we engage in battle will be few in number.

Third, when the strategy is made and implemented, there will be many changes. No matter in war or in business competition, we all face the dynamic environments and the extent of changes will be large. Thus, we sometimes have to correct the strategy to fit into the situation. If we want to react to the changing situations, we must make great control. By seeking, collecting, and analyzing the information from the enemies, inside of our firm and the environments, we can make the qualities of decision-making best. In the strategic control, Sun Tzu mentioned that:

Unless you know the intentions of the rulers of the neighboring states, you cannot enter into preparatory alliances with them; unless you know the lay of the land (hsing) - its mountains and forests, its passes and natural hazards, its wetlands and swamps - you cannot deploy the army on it.

Thus the reason the farsighted ruler and his superior commander conquer the enemy at every move, and achieve successes far beyond the reach of the common crowd, is foreknowledge.

From what has been said, we would know that the principles of Sun Tzu's *The Art of War* could be applied in today's business operation. What Sun Tzu advocated in the conditions of war could also be essential in acquiring competitive advantages in business competition. Wee et al. (1991) had made a comprehensive evaluation on the consensus

between the principles of war and the principles of business operation. It is suggested by Wee et al. (1991) that Sun Tzu's principles of war could be divided into the following categories

- (1) Situation appraisal
- (2) Formulation of goals and strategies
- (3) Evaluation of strategies
- (4) Implementation of strategies
- (5) Strategic controls

Although Wee et al. have proposed a conceptual framework to identify the Sun Tzu's principles of war applying in nowadays business operation, their work still in lack of the following components: First, Sun Tzu's principles of war have been conceptualized without further empirical validation. The conceptual constructs as illustrated by Wee et al. should be further operationalized. Second, upon explaining the concepts and principles of Sun Tzu, Wee et al. only use specific case studies and case examples, more large scale statistical validations are absent. Third, as the conceptual "war mode" has elaborated many examples to explain how the principles of war could be in consistent to the principles of business operations, the model did not illustrate whether the adoptions of Sun Tzu's principles of war could result in acquiring a firm key success factors (KSFs), and eventually achieving business performances.

## 1.2 Research Objectives

Based on the above research motivation and background, the research objectives of this study are as follows:

- (1) To evaluate which principles of Sun Tzu's *The Art of War* could be applied in the real business enterprises when business managers formulate their competitive strategies.
- (2) To evaluate whether different kinds of firms adopt different Sun Tzu's principles.
- (3) To investigate how the levels of adoption on the Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control impact on a firm's acquiring its key success factors and achieving its business performances.

Specifically the basic concepts of this study are shown in Figure 1-1.

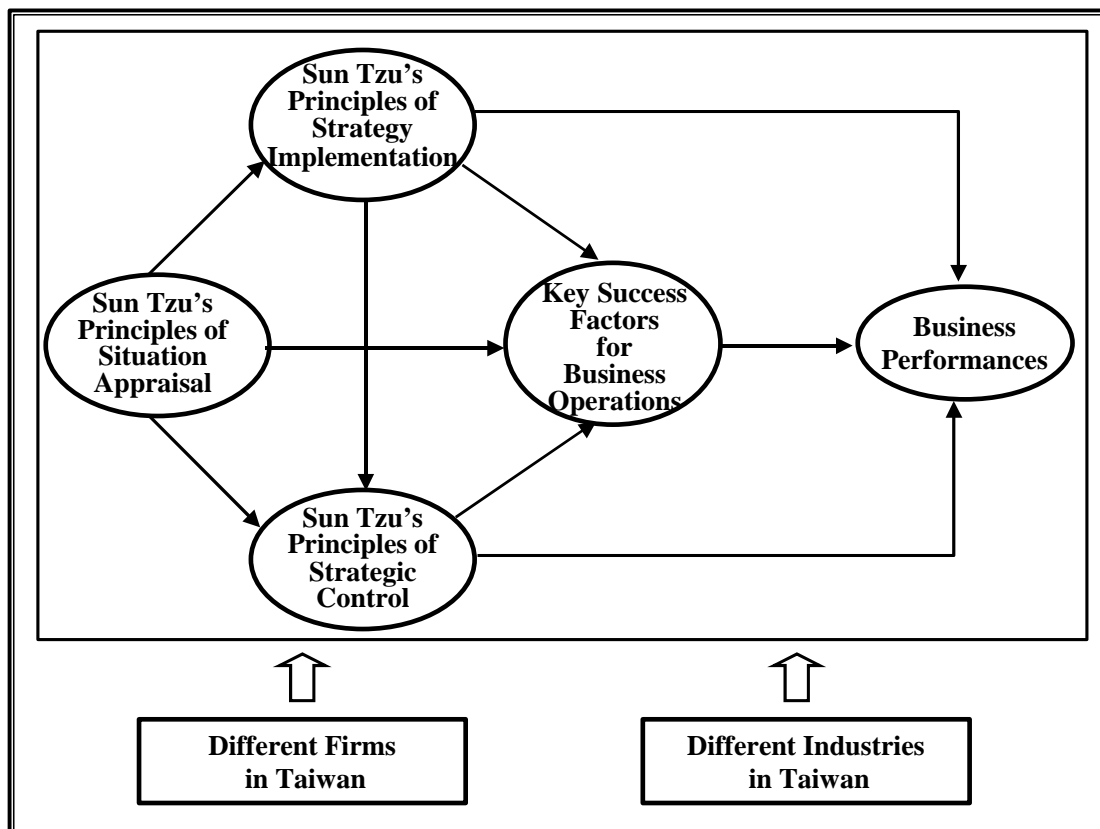


Figure 1-1 The Conceptual Framework of this Study

### 1.3 The Research Project

At first, the relevant literatures will be collected and reviewed for understanding the relevance between Sun Tzu's *The Art of War*, strategic management, key success factors, and business performances. By interviewing the managers of different firms in Taiwan, we could understand their opinions about correlations between the principles of *The Art of War*, strategy management, key success factors, and business performances. This will be taken into consideration when designing the questionnaire. Then, the conceptual framework, the scope, and hypothesizes of this study will be made up. The survey of this study will be conducted in Taiwan. After collecting the response questionnaires, they will be analyzed by the following techniques:

- (1) Descriptive statistic analysis
- (2) Reliability test
- (3) Multivariate Analysis of variance (MANOVA)
- (4) Canonical analysis
- (5) Multiple Regression
- (6) Structural equation modeling: LISREL analysis

A detailed description of research methods and data analysis is shown in Chapter .

To sum up, the flow chart of this research project is shown in Figure 1-2.

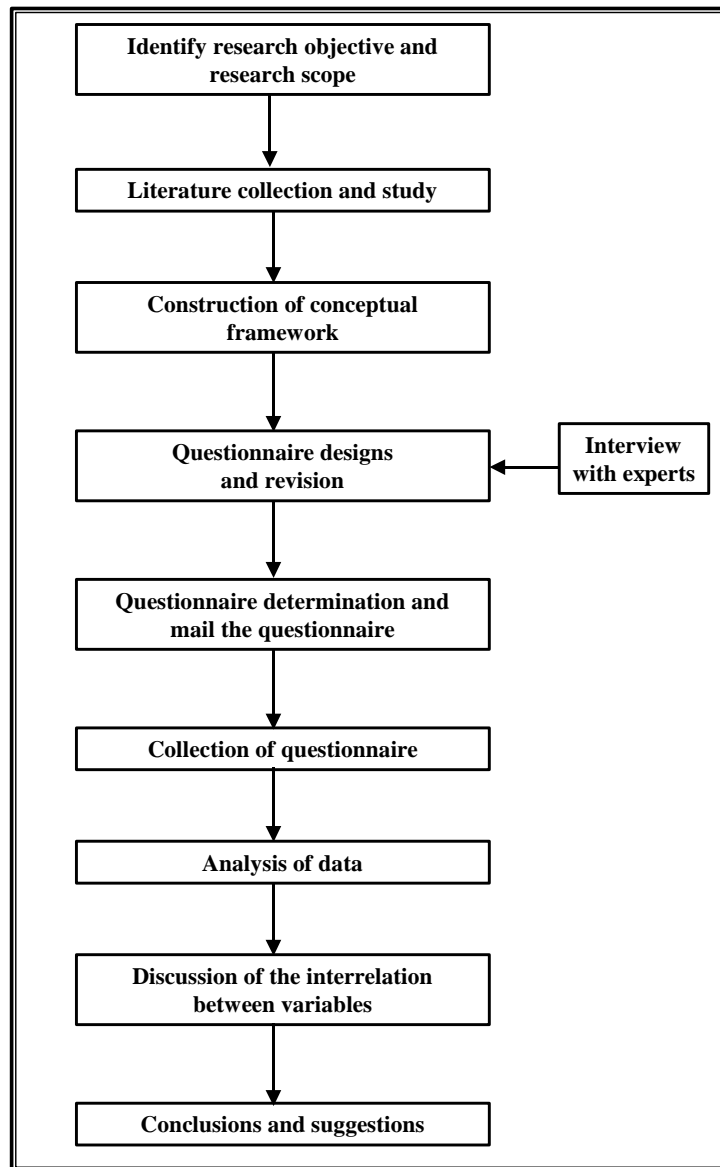


Figure 1-2 The Flow Chart of this Research Project



#### **1.4 The Structure of this Study**

This study contains five chapters, and the summary for each is as follows:

Chapter     outlines the research motives, purposes, and the structure of this study. Major variables are explored and a conceptual framework is presented. The research project is also discussed.

Chapter     introduces the Sun Tzu's *The Art of War* and reviews the previous literatures relevant to this study. This chapter is organized around five major constructs of interest: Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factor, and business performances. Key variables and their respective relationships are identified. Finally, the hypothesized relationships are proposed to integrate the results of previous studies.

Chapter     presents the construct measure and research design for this study. A research model that suggests the general relationships between Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors, and business performances are identified. Meanwhile, the research design, including the sampling plan, data collection procedures, and data analysis techniques are discussed.

Chapter     presents the empirical results of this study. It includes the comparisons of the characteristics of different firms and industries; the interrelationships among the adoptions of Sun Tuz's principles of situation appraisal, strategy implementation, and strategic control, key success factors, and business performances. These discussions and comparisons lead to the conclusions of this study in the following chapter.

Chapter     is a summary of the significant findings and conclusions of this study. Suggestions and practical implications of the results are presented for future research.



# Chapter

## Literature Review

In this chapter, there will be a brief introduction of Sun Tzu and *The Art of War*. Then, it will discuss the association between Sun Tzu's *The Art of War* and strategic management. It will also introduce the importance of key success factor of firms. In the final, the hypothesized relationships will be proposed.

### 2.1 Definition of Research Variable

#### 2.1.1 Introduction of Sun Tzu and *The Art of War*

Sun Tzu (named Sun Wu) was born in the state of Ch'i at the end of the Chinese Spring and Autumn period (551-479 B.C.). He is as contemporary as Confucius and Lao Tzu. When he came to Wu country, Wu Zi-Xu recommended him to the King Ho-lu of Wu (512 B.C.). When Sun Tzu interviewed with King Ho-lu, he introduced his thirteen chapters of *The Art of War* to the King. After reading it, the King put Sun Tzu to demonstrate the military skills by conducting a drill using the women of his court. After the test, Ho-lu knew Sun Tzu's ability at military affairs, and made him as his Commander. As Sun Tzu being a Commander, he led the troop of Wu to occupy the state of Ch'u and to intimidate Ch'i and Chih to the north and rose to prominence among the various states. It is said that Sun Tzu was not only a military tactician, but also capable of strategy-making.

Although the details of Sun Tzu's life are nearly lost, the Sun Tzu's work - *The Art of War* is still the fundamental one in the classical military literature. Sun Tzu's *The Art of War* is the oldest military classic in Chinese literature. Outside China, it seems to be one of the most revered and well known military texts. The first western translation appeared

in French and was published in Paris around 1772. Until 1905, the first English translation appeared. The Thirteen chapters of *The Art of War* are: On Assessments, On Waging Battle, Planning the Attack, Strategic Positions (Hsing), Strategic Advantage (Shih), Weak Points and Strong Points, Armed Contest, Adapting to the Nine Contingencies (Pien), Deploying the Army, The Terrain, The Nine Kinds of Terrain, Incendiary Attack, Using Spies (Ames, 1993). The book amounts to approximately 6,000 characters.

Although it was completed about 2,500 years ago, the book remains a compulsory text in major military schools around the world, and its influence on today's military thinking is undisputed. During the Gulf War in 1991, every American soldier got a copy of Sun Tzu's *The Art of War*, and many people said that the victory of the campaign was due to the influence of Sun Tzu's military thinking (Wee, 1994). As Sun Tzu's saying "The highest excellence is to subdue the enemy's army without fighting at all," and "The best military policy is to attack strategies; the next to attack alliances; the next to attack soldiers; and the worst to assault walled cities," we would know that the goal of war is "peace". If we get victory not even through fighting, it is the real victory.

### **2.1.2 The Thirteen Chapters of *The Art of War***

The purposes of each chapter in Sun Tzu's *The Art of War* and some key sentences extracted from the thirteen chapters are as follows:

#### **1. On Assessments**

Before setting up the war, we must estimate the situations first. The strategy will lead to the victory or failure of the warfare. Hence, making the thorough strategy is the essential of success. The five criteria and seven appraisals will provide the primary principles to the warfare plans. In the first chapter, it also

provides more than ten principles of taking tricks on the enemies.

Sun Tzu said: War is a vital matter of state. It is the field on which life or death is determined and the road that leads to either survival or ruin, and must be examined with the greatest care.

Therefore, to gauge the outcome of war we must appraise the situation on the basis of the following five criteria, and compare the two sides by assessing their relative strengths.

The way (tao) is what brings the thinking of the people in line with their superiors. Hence, you can send them to their deaths or let them live, and they will have no misgivings one way or the other.

Climate is light and shadow, heat and cold, and the rotation of the seasons.

Terrain refers to the fall of the land, proximate distances, difficulty of passage, the degree of openness, and the viability of the land for deploying troops.

Command is a matter of wisdom, integrity, humanity, courage, and discipline.

And regulation entails organizational effectiveness, a chain of command, and a structure for logistical support.

Therefore, to gauge the outcome of war we must compare the two sides by assessing their relative strengths. This is to ask the following questions:

Which ruler has the way (tao)?

Which commander has the greater ability?

Which side has the advantages of climate and terrain?

Which army follows regulations and obeys orders more strictly?

Which army has superior strength?

Whose officers and men are better trained?

Which side is more strict and impartial in meting out rewards and punishments?"

Having heard what can be gained from my assessment, shape a strategic advantage (shih) from them to strengthen our position. By "strategic advantage" I mean making the most of favorable conditions (yin) and tilting the scales in our favor.

Warfare is the art (tao) of deceit. Therefore, when able, seem to be unable; when far away, seem near. If the enemy seeks some advantage, entice him with it. If he is in disorder, attack him and take him. If he is formidable, prepare against him. If he is string, evade him. If he is incensed, provoke him. If he is humble, encourage his arrogance. If he is rested, wear him down. If he is

internally harmonious, sow divisiveness in his ranks. Attack where never occur to him you would go. These are the military strategist's calculations for victory - they cannot be settled in advance.

The side that scores many points will win; the side that scores few points will not win, let alone the side that scores no points at all.

## **2. On Waging Battle**

In this chapter, it addresses that military operations should aim at speed victory and not prolonged campaign. A wise commander should get provisions in the enemy state, and treat the captives well and arrange them in the right positions. Finally, it implies the importance of generals or commanders.

Only when you have in hand one thousand pieces of gold for each day can the hundred thousand troops be mobilized.

In joining battle, seek the quick victory. If battle is protracted, your weapons will be blunted and your troops demoralized. If you lay siege to a walled city, you exhaust your strength.

Thus in war, I have heard tell of a foolish haste, but I have yet to see a case of cleverly dragging on the hostilities. There has never been a state that has benefited from an extended war.

The expert in using the military does not conscript soldiers more than once or transport his provisions repeatedly from home. He carries his military equipment with him, and commandeers (yin) his provisions from the enemy. Thus he has what he needs to feed his army.

This is called increasing our own strength in the process of defeating the enemy.

Hence, in war prize the quick victory, not the protracted engagement.

## **3. Planning the Attack**

It advocates that winning a victory and subduing the enemy without fighting is the most important principle of war. It is better to adopt means of diplomacy in military operations than to destroy or storm cities and seize territory. It also emphasizes the independence of commander's authority and stresses to know the enemy and oneself.

So to win a hundred victories in a hundred battles is not the highest excellence; the highest excellence is to subdue the enemy's army without fighting at all.

Therefore, the best military policy is to attack strategies; the next to attack alliances; the next to attack soldiers; and the worst to assault walled cities.

He must use the principle of keeping himself intact to compete in the world. Thus, his weapons will not be blunted and he can keep his edge intact. This then is the art of planning the attack.

There are three ways in which the ruler can bring grief to his army:

To order an advance, not realizing the army is in no position to do so, or to order a retreat, not realizing the army is in no position to withdraw - this is called "hobbling the army".

To interfere in the administration of the army while being ignorant of its internal affairs will confuse officers and soldiers alike.

To interfere in military assignments while being ignorant of exigencies will lose him the confidence of his men.

Therefore there are five factors in anticipating which side will win:

The side that knows when to fight and when not to will take the victory.

The side that understands how to deal with numerical superiority and inferiority in the deployment of troops will take the victory.

The side that has superiors and subordinates united in purpose will take the victory.

The side that fields a fully prepared army against one that is not will take the victory.

The side on which the commander is able and the ruler does not interfere will take the victory.

#### **4. Strategic Positions (Hsing)**

In warfare, one must make his armies invincible. In order to make it real, one should understand the principles of war and adopt the correct policies. One should keep the secret of movement and soon defeat the enemies with whole the army's power when discovering the weak points of them.

Of old the expert in battle would first make himself invincible and then wait for the enemy to expose his vulnerability. Invincibility depends on oneself; vulnerability lies with the enemy.

The expert at defense conceals himself in the deepest recesses of the

earth; the expert on the attack strikes from out of the highest reaches of the heavens. Thus he is able to both protect himself and to take the complete victory.

Therefore, the expert in battle takes his stand on ground that is unassailable, and does not miss his chance to defeat the enemy. For this reason, the victorious army only enters battle after having first won the victory, while the defeated army only seeks victory after having first entered the fray.

The expert in using the military builds upon the way (tao) and holds fast to military regulations, and thus is able to be the arbiter of victory and defeat.

It is a matter of strategic positioning (hsing) that the army that has this weight of victory on its side, in launching its men into battle, can be likened to the cascading of pent-up waters thundering through a steep gorge.

## **5. Strategic Advantage (Shih)**

It is suggested that flexibly adopt the normal way (cheng) and special tactics (ch'i) in war will lead to the final victory. The commanders must take actions swiftly and take the strong momentum in the war.

Sun Tzu said: in general, it is organization that makes managing many soldiers the same as fighting with a few. It is communication with flags and pennants that makes fighting with many soldiers the same as fighting with a few. It is "surprise" (ch'i) and "straightforward" (cheng) operations that enable one's army to withstand the full assault of the enemy force and remain undefeated. It is the distinction between "weak points" and "strong points" that makes one's army falling upon the enemy a whetstone being hurled at eggs.

Generally in battle use the "straightforward" to engage the enemy and the "surprise" to win the victory.

So it is with the expert at battle that his strategic advantage (shih) is channeled and his timing is precise.

The line between disorder and order lies in logistics (shu); between cowardice and courage, in strategic advantage (shih); and between weakness and strength, in strategic positioning (hsing).

The expert at battle seeks his victory from strategic advantage (shih) and does not demand it from his men. He is thus able to select the right men and exploit the strategic advantage (shih).

## **6. Weak Points and Strong Points**

One must take the proactive position during the war. One also has to avoid



the enemy's strong points and attack the enemy's weak points in fighting. If one can vary his strategy according to different situations of the army, then he will get the ultimate victory. Therefore, one should make himself flexible and changeable.

Thus the expert in battle moves the enemy, and is not moved by him.

If we are able to use many to strike few, anyone we take the battle to will be in desperate circumstances.

The place we have chosen to give the enemy battle must be kept from him. If he cannot anticipate us, the positions the enemy must prepare to defend will be many. And if the positions he must prepare to defend are many, then any unit we engage in battle will be few in number.

One is weak because he makes preparations against others; he has strength because he makes others prepare against him.

Thus if one can anticipate the place and the day of battle, he can march a thousand li to join the battle. But if one cannot anticipate either the place or the day of battle, his left flank cannot even rescue his right, or his right his left; or his right his left; his front cannot even rescue his rear, or his rear his front. How much more is this so when your reinforcements are separated by at least a few li, or even tens of lis.

So on the path to victory avoid the enemy's strong points and strike where his weak.

An army varies its method of gaining victory according to (yin) the enemy.

Thus an army does not have fixed strategic advantages (shih) or an invariable position (hsing). To be able to take the victory by varying one's position according to (yin) the enemy's is called being inscrutable (shen).

## **7. Armed Contest**

In warfare, each army will fight for military advantage and victory. It points out that the maneuver of the army is the key factor to victory. Such as "to turn the long and tortuous route into the direct" is one significant principle of maneuver. Besides, "manage moral", "manage heart-and-mind", "manage strength", "manage changing conditions", and the eight methods of employing troops should not be neglected.

What is difficult in the armed contest is to turn the long and tortuous route into the direct, and to turn adversity into advantage.

If you mobilize your entire force to contend for some advantage, you arrive too late; if you abandon your base camp to contend for advantage, your equipment and stores will be lost.

For this reason, if an army is without its equipment and stores, it will perish; if it is without provisions, it will perish; if it is without its material support, it will perish.

Therefore, unless you know the intentions of the rulers of the neighboring states, you cannot enter into preparatory alliances with them; unless you know the lay of the land - its mountains and forests, its passes and natural hazards, its wetlands and swamps - you cannot deploy the army on it; unless you can employ local scouts, you cannot turn the terrain to your advantage.

Therefore, in warfare rely on deceptive maneuvers to establish your ground, calculate advantages in deciding your movements, and divide up and consolidate your forces to make your strategic changes.

Thus, advancing at a pace, such an army is like the wind; slow and majestic, it is like a forest; invading and plundering, it is like fire; sedentary, it is like a mountain; unpredictable, it is like a shadow; moving, it is like lightning and thunder.

In plundering the countryside, divide up your numbers; in extending your territory, divide up and hold the strategic positions; weigh the pros and cons before moving into action.

He who first understands the tactic of converting the tortuous and the direct will take the victory. This is the art of armed contest.

Thus the expert in using the military avoids the enemy when his morals is high, and strikes when his morale has flagged and has drained away. This is the way to manage morale.

Use your proper order to await the enemy's disorder; use your calmness to await his clamor. This is the way to manage the heart-and-mind.

Use your closeness to the battlefield to await the far-off enemy; use your well-rested troops to await his fatigued; use your well-fed troops to await his hungry. This is the way to manage strength.

Do not intercept an enemy that is perfectly uniform in its array of banners; do not launch the attack on an enemy that is full and disciplined in its formations. This is the way to manage changing conditions.

Therefore, the art of using troops is this:

Do not attack an enemy who has the high ground; do not go against an enemy that has his back to a hill; do not follow an enemy that feigns retreat; do not attack the enemy's finest; do not swallow the

enemy's bait; do not obstruct an enemy returning home; in surrounding the enemy, leave him a way out; do not press and enemy that is cornered. This is the art of using troops.

## **8. Adapting to the Nine Contingencies (Pien)**

The figure “nine” here means plenty. Hence, “the nine contingencies” means many kinds of varieties. Both favorable and unfavorable factors are related to the war. In this chapter, it points out that the commanders must become flexible according to the favorable and unfavorable factors. Also the commanders must be on preparation to fight with the enemies and make themselves invincible. At last, it reminds the generals to examine the five fatal weaknesses.

The art of using troops is this: When the commander receives his orders from the ruler, assembles his armies, and mobilizes the population for war, He should not make camp on difficult terrain; he should join with his allies on strategically vital intersections; he should not linger on cutoff terrain; he should have contingency plans on terrain vulnerable to ambush; and he should take the fight to the enemy on terrain from which there is no way out. There are roadways not to be traveled, armies not to be attacked, walled cities not to be assaulted, territory not to be contested, and commands from the ruler not to be obeyed.

Thus, a commander fully conversant with the advantages to be gained in adapting to these nine contingencies will know how to employ troops.

For this reason, the deliberations of the wise commander are sure to assess jointly both advantages and disadvantages.

For this reason, to subjugate neighboring states, use the threat of injury; to keep them in service, drive them on; to lure them out, use the prospect of gain.

Do not depend on the enemy not coming; depend rather on being ready for him. Do not depend on the enemy not attacking; depend rather on having a position that cannot be attacked.

There are five traits that are dangerous in a commander. If he has a reckless disregard for life, he can be killed; if he is determined to live at all costs, he can be captured; if he has a volatile temper, he can be provoked; if he is a man of uncompromising honor, he is open to insult; if he loves his people, he can be easily troubled and upset.

## 9. Deploying the Army

The two outlines in this chapter are “positioning your armies” and “assessing the enemy”. “Positioning your armies” means that the commanders must deploy troops according to different terrains; “assessing the enemy” means that to determine the enemy’s situation by observing the appeared symptoms.

In positioning your armies and assessing the enemy:

Pass through the mountains keeping to the valleys; pitch camp on high ground facing the sunny side; and joining battle in the hills, do not ascend to engage the enemy. This is positioning an army when in the mountains.

Crossing water, you must move to distance yourself from it. When the invading army crosses water in his advance, do not meet him in the water. It is to your advantage to let him get halfway across and then attack him. Wanting to join the enemy in battle, do not meet his invading force near water. Take up a position on high ground facing the sunny side that is not downstream from the enemy. This is positioning an army when near water.

Crossing salt marshes, simply get through them in all haste and without delay. Of you engage the enemy’s force on the salt marshes, you must take your position near grass and water and with your back to the woods. This is positioning an army when on salt marshes.

On the flatlands, position yourself on open ground, with your right flank backing on high ground, and with dangerous ground in front and safe ground behind. This is positioning an army when on flatlands.

In war it is not numbers that give the advantage. If you do not advance recklessly, and are able to consolidate your own strength, get a clear picture of the enemy’s situation, and secure the full support of your men, it is enough.

Therefore, bring them together by treating them humanely and keep them in line with strict military discipline.

The consistent enforcement of commands promotes a complementary relationship between the commander and his men.

## 10. The Terrain

In this chapter, the terrains are classified. It emphasize that the commander must adopt suitable strategies to defeat the enemy according to different terrains.

Then it points out the six situations which cause the defeat of an army. The responsibility of the commanders is to escape the six situations from happening. Finally, if one knows the enemy, oneself, weather and terrains well, he will make his victory complete.

Kinds of terrain include the accessible, that which entangles, that which leads to a stand-off, the narrow pass, the precipitous defile and the distant.

These are the six guidelines (tao) governing the use of terrain. They are the commander's utmost responsibility, and must be thoroughly investigated.

In warfare there is flight, insubordination, deterioration, ruin, chaos, and rout. These six situations are not natural catastrophes but the fault of the commander.

These are six ways (tao) to certain defeat. They are the commander's utmost responsibility, and must be thoroughly investigated.

Strategic position (hsing) is an ally in battle. To assess the enemy's situation and create conditions that lead to victory, to analyze natural hazards and proximate distances - this is the way (tao) of the superior commander.

Thus, if the way (tao) of battle guarantees you victory, it is right for you to insist on fighting even if the ruler has said not to; where the way (tao) of battle does not allow victory, it is right for you to refuse to fight even if the ruler has said you must.

Hence a commander who advances without any thought of winning personal fame and withdraws in spite of certain punishment, whose only concern is to protect his people and promote the interests of this ruler, is the nation's treasure.

Because he fusses over his men as if they were infants, they will accompany him into the deepest valleys; because he fusses over his men as if they were his own beloved sons, they will die by his side. If he is generous with them and yet they do not do as he tells them, if he loves them and yet they do not obey his commands, if he is so undisciplined with them that he cannot bring them into proper order, they will be like spoiled children who can be put to no good use at all.

Know the other, know yourself, and the victory will not be at risk; know the ground, know the natural conditions, and the victory can be total.

## 11. The Nine Kinds of Terrain

One must investigate the various grounds in war, especially the grounds in the enemy's state. It also mentions that the commanders must pay attention to the political and economic factors and the army's mental and physical situations. "Only if you throw them into life-and-death situations will they survive" can be regarded as the focus of this chapter.

In the art of employing troops, the kinds of terrain include scattering terrain, marginal terrain, contested terrain, intermediate terrain, the strategically vital intersection, critical terrain, difficult terrain, terrain vulnerable to ambush, and terrain from which there is no way out.

This being the case, do not fight on scattering terrain; do not stay on marginal terrain; do not attack the enemy on contested terrain; do not get cut off on intermediate terrain; form alliances with the neighboring states at strategically vital intersections; plunder the enemy's resources on critical terrain; press ahead on difficult terrain; devise contingency plans on terrain vulnerable to ambush; and on terrain from which there is no way out, take the battle to the enemy.

The general methods of operation (tao) for an invading army are:

The deeper you penetrate into enemy territory, the greater the cohesion of your troops, and the less likely the host army will prevail over you.

Plunder the enemy's most fertile fields, and your army will have ample provisions.

Attend to the nourishment of your troops and do not let them get worn down; lift their morale and build up their strength.

Deploy your troops and plan out your strategies in such a way that the enemy cannot fathom your movements.

Throw your troops into situations from which there is no way out, and they will choose death over desertion. Once they are ready to die, how could you get less than maximum exertion from your officers and men?

Even where your troops are in the most desperate straits, they will have no fear, and with nowhere else to turn, they will stand firm. Having penetrated deep into enemy territory, they are linked together, and if need be, they will fight.

As for the urgent business of the commander:

He is calm and remote, correct and disciplined. He is able to

blinker the ears and eyes of his officers and men, and to keep people ignorant.

He assembles the rank and file of his armies, and throws them into danger. This then is the urgent business of the commander.

The measures needed to cope with the nine kinds of terrain, the advantages that can be gained by flexibility in maneuvering the army, and the basic patterns of the human character must all be thoroughly investigated.

Unless you know the intentions of the rulers of the neighboring states, you cannot enter into preparatory alliances with them; unless you know the lay of the land (hsing) - its mountains and forests, its passes and natural hazards, its wetlands and swamps - you cannot deploy the army on it; unless you can employ scouts, you cannot turn the terrain to your advantage.

## **12. Incendiary Attack**

In this chapter, Sun Tzu demonstrated how to attack the enemy by fire. The fire attack is the subsidiary means when attacking the enemy. Although the means is ruthless, it may be the useful way to submit the enemy in the shortest time. This chapter also mentions the primary thought of war - to keep the state in peace and security and the army intact.

There are five kinds of incendiary attack: The first is called setting fire to personnel; the second, to stores; the third, to transport vehicles and equipment; the fourth, to munitions; the fifth, to supply installations.

With the incendiary attack, you must vary your response to the enemy according to (yin) the different changes in his situation induced by each of the five kinds of attack.

Thus it is said:

The farsighted ruler thinks the situation through carefully;

The good commander exploits it fully.

If there is no advantage, do not move into action;

If there is no gain, do not deploy the troops;

If it is not critical, do not send them into battle.

A ruler cannot mobilize his armies in a rage; a commander cannot incite a battle in the heat of the moment. Move if it is to your advantage; bide your time if it is not.

### 13. Using Spies

In the last chapter, Sun Tzu addressed that it is exactly important to acquire the information through espionage. There are five kinds of spies, “local spies”, “inside agents”, “double agents”, “expendable spies”, and “unexpendable spies”, and the most intelligent people should be employed as the spies. Sun Tzu also emphasized that it is important to obtain the fore-knowledge which must be obtained from the people who clearly know the enemy’s situations rather than from ghosts and spirits.

Thus the reason the farsighted ruler and his superior commander conquer the enemy at every move, and achieve successes far beyond the reach of the common crowd, is foreknowledge.

There are five kinds of spies that can be employed: local (yin) spies, inside agents, double agents, expendable spies, and unexpendable spies.

Local spies are the enemy’s own countrymen in our employ. Inside agents are enemy officials we employ. Double agents are enemy spies who report to our side. Expendable spies are our own agents who obtain false information we have deliberately leaked to them, and who then pass it on to the enemy spies.

Thus, of those close to the army command, no one should have more direct access than spies, no one should be more liberally rewarded than spies, and on matters should be held in greater secrecy than those concerning spies.

So delicate! So secretive! There is nowhere that you cannot put spies to good use. Where a matter of espionage has been divulged prematurely, both the spy and all those he told should be put to death.

Thus only those farsighted rulers and their superior commanders who can get the most intelligent people as their spies are destined to accomplish great things. Intelligence is of the essence in warfare - it is what the armies depend upon in their every move.

#### 2.1.3 Strategic Management and *The Art of War*

Nowadays, the world has become more dynamic and fast-moving, therefore firms want to operate well must understand how to acquire the relative advantages. In this intense situation, managers have to evaluate the resources which they have and integrate



them throughout the organization. For the sake of competing with other, managers must make the whole members in the firms to “do things right” (efficiency) and “do right things” (effectiveness). Then, managers should propose, design and formulate the strategies to fulfill the intended purposes. Managers who want the strategy to work well should pay more efforts on strategic management.

The strategic management is a process that combines the interrelated activities - strategic analysis, strategy formulation, strategy implementation, and control (Hill and Jones, 2001). Through strategic analysis, managers will know the goals of their firms. Through external analysis they will know opportunities and threats from outside. By analyzing themselves, they will know which strengths and weaknesses they have. After they have done the strategic analysis, they will formulate their competitive strategies. Following the strategies, managers must build action programs to make it actually materialize. In order to make sure that the strategies are operated well, managers have to monitor the outcomes of strategic implementation. This is so called strategic control. If the strategic management is well done, the goals of the firms would be completed and the performances of the firms would be great.

At the beginning of *The Art of War*, Sun Tzu has said that “War is the vital matter of state. It is the field on which life or death is determined and the road that leads to either survival or ruin, and must be examined with the greatest care.” From what he said, we would know that the purpose of war is to get survival. Like war, the business competition is also severe and relative to the survival or death of the firms. The marketplace, in the eyes of many marketers, is a battleground and military strategies that are very useful in guiding business activities. Hence, many business managers have attached great importance to *The Art of War*, and it has proven that many of the principles of the book are even commonly applied to daily life (Chen, 1994).

In the stream of strategic management, Sun Tzu had advocated some principles. In strategic analysis, he addressed that:

It is by scoring many points that one wins the war beforehand in the temple rehearsal of the battle; it is by scoring few points that one loses the war beforehand in the temple rehearsal of the battle. The side that scores many points will win; the side that scores few points will not win, let alone the side that scores no points at all. When I examine it in this way, the outcome of the war becomes apparent.

Sun Tzu thought that before we formulate the strategies, we must consider five factors and seven dimensions. These are the internal and external analysis. After analyzing these criteria, we should know our goals and how to complete them. Next, in the strategic implementation stage, Sun Tzu advocated the importance of “timing” and “momentum”. Sun Tzu argued that when we implement the strategy, we have to act at the suitable moment and achieve the synergy of actions. After strategic analysis, strategy formulation, and strategy implementation, we must do the strategic control. Control is the essential part of strategic management. Sun Tzu addressed the principles of intelligence and security to get the information of enemies and to prevent the enemies from knowing our situations (Wee et al., 1991). Therefore, we will always know the changes of the external and internal environment, and we can redefine that strategy (if necessary) as soon as possible.

To evaluate the concepts of the Sun Tzu’s *The Art of War* comprehensively, we would like to compare them with the concepts of strategic management. There are many principles and essentials derived under the framework that could help us do the fittest strategic management.

#### **2.1.4 Principles of Situation Appraisal**

Strategic analysis is the foundation of the strategic management process. It

concludes two parts: the first one entails exploration of the opportunities and threats from the external; the second is to examine the firm's strengths and weaknesses. The two elements of analysis are usually called SWOT (strengths, weaknesses, opportunities, and threats) analysis.

The external environment consists of the general environment and the competitive environment (Miller and Dess, 1996). The general environment consists of factors external to the industry that could pose a significant impact on the firm's strategies. By analyzing the general environment, we could know the trend of various industry segments. Although there are many opportunities and threats in the general environment, we still have to consider the competitive environment to catch the "true" opportunities and escape the threats.

The competitive environment refers to the specific competitive arena where the firm encounters. Porter (1985) addressed that any industry, no matter it is in domestic or international areas, produces products or services, should deal with the following five competitive forces: the threat of new entrants, the threat of substitute products or services, the bargaining power of buyers, the bargaining power of suppliers, and the rivalry among existing competitors. To collect strengths of these five competitive forces, we have to identify the most appropriate and defensible strategic position within the industry.

The internal analysis provides the means of identifying the strengths and weaknesses in formulating strategies. Through internal analysis, one will know how well his/her firm executes. If a firm executes well, it has completed the efficiency and effectiveness in the operation. If a firm wants to analyze its strengths and weaknesses, there are three frameworks commonly used to guide analysis: key success factors, value chain, and core business process (Miller and Dess, 1996).

In Sun Tzu's viewpoint, he emphasized that war should be avoided:

Therefore, the best military policy is to attack strategies; the next to attack alliances; the next to attack soldiers; and the worst to assault walled cities.

But if the war is unavoidable, Sun Tzu advocated military strategy composed of two components: “know the other and know yourself” (Wong et al., 1998). As Sun Tzu addressed that:

Know the other, know yourself, and the victory will not be at risk; know the ground, know the natural conditions, and the victory can be total.

In the business world, “the other” has a much wider scope of interpretation. “The other” would include any party that the firm has to deal with in business competition. They could be competitors, customers, suppliers, the media, the government, bankers, etc. Besides “know the other and know yourself”, we usually care about the weather and terrain. In the business world, the weather is like the business climate, and the terrain is like the infra-structural factors that affect business operation. Therefore, “know the other and know yourself” and “know the weather and terrain” is typically known as SWOT analysis in strategic management (Wee, 2001).

In SWOT analysis, Sun Tzu advocated one need to consider the five criteria and compare the seven dimensions (Wee et al., 1991; Chen, 1994; Lin, 1994; Wong et al., 1998). The five criteria are “the way (tao), climate, terrain, command, and regulation” and the seven dimensions are “Which ruler has the way (tao)? Which commander has the greater ability? Which side has the advantages of climate and terrain? Which army follows regulations and obeys orders more strictly? Which army has superior strength? Whose officers and men are better trained? Which side is more strict and impartial in meting out rewards and punishments?”

According to Wee’s (1991) coordination, the five criteria and seven dimensions can be reclassified into eight factors. They are: (1) Moral Influence, (2) Generalship (Command), (3) Climate, (4) Terrain, (5) Doctrine (law), (6) Strengths, (7) Training, (8)

Discipline (Rewards and Punishments system). Through the assessment of these factors, we could build a strong organization, and predict the firm's success or failure against competitor's strengths and weaknesses. If we get relative advantages from the situation appraisal, we may formulate the goals and strategies to offense the competitors; if not, we will find the way to defend ourselves invincibly.

### **2.1.5 Principles of Strategy Implementation**

Strategy implementation involves a broad range of efforts aimed at transforming strategic intentions into action. It is the sum total of the activities and choices required for the implementation of a strategic plan (Wheelen and Hunger, 1995). In strategy implementation stage, we must put the strategies and policies into action through programs, budgets, and procedures. It seems easy when we mention about the strategy implementation, but truly it is so difficult to make the strategy into action. Undoubtedly, poor implementation of a strategy may cause the strategy to fail. A successful strategy depends on corporate culture, organization structure, resource allocation, compensation program, information system, etc. Thus we can say that the firm's performance is not so much a result of the firm's strategy but a result of the firm's ability to implement the strategy effectively.

In Sun Tzu's perspective:

For this reason, the victorious army only enters battle after having first won the victory, while the defeated army only seeks victory after having first entered the fray.

It is said that if combat is unavoidable, one should ensure one's invulnerability.

Invulnerability to defeat can be attained through careful and wary prior preparation and planning and by the strategy implementation (Wee et al., 1991).

Lin (1994) said that according to Sun Tzu's *The Art of War*, the general principles of

strategy implementation are “timing” and “strategic advantage (shih)”. The “timing” means “appropriate moment”. It is said that we must carry out the strategy at the appropriate moment. The “strategic advantage (shih)” means the posture and momentum. Basically, the “strategic advantage (shih)” is one kind of well match and its power is just like the integrated marketing (Kotler, 1997). By coordinating all factors, it will make the synergy and it is what the “strategic advantage (shih)” means. In Sun Tzu’s work:

That the velocity of cascading water can send boulders bobbing about is due to its strategic advantage (shih). That a bird of prey when it strikes can smash its victim to pieces is due to its timing. So it is with the expert at battle that his strategic advantage (shih) is channeled and his timing is precise. His strategic advantage (shih) is like a drawn crossbow and his timing is like releasing the trigger.

Wee et al. (1991) addressed that Sun Tzu’s implementation of strategy consists of two parts: the human element and the operational element. The human element involves understanding of various roles and responsibilities of the different parties involved in the competitive mission. It concludes three factors - the sovereign (ruler), the commanders (generals and senior military officers), and the army (soldiers). The operational element is certain principles that required to ensure successful completion of the mission. The principles can be classified into: (1) swiftness in execution, (2) adaptability in maneuvers, (3) deceptiveness in actions and strategies, (4) the need to capitalize on available means, and (5) the anticipation of the enemy’s reactions.

### **2.1.6 Principles of Strategic Control**

When a strategy is developed and implemented, it is also subjected to change. Therefore, control system becomes very important. The control system ensures that the company is completing what is set out to accomplish (Wheelen and Hunger, 1995). Control system deal with the question of whether or not resources the firms has are being

used to move the organization closer to its goals and what actions should be taken if the result doesn't meet what we expected (Miller and Dess, 1996).

As Pearce and Robinson (1994) addressed that control system consists of two fundamental perspectives - strategic control and operational control. Strategic control are intended to steer the firm toward its long-term strategic goals. Implementation control, strategic surveillance, and special alert controls are types of strategic control. Operational control systems, identifies the performance standards associated with allocation of the firm's financial, physical, and human resources in pursuit of its strategy. Budgets, schedules, and key success factors are the primary means of operational control.

Strategic control is an essential and important part of any strategy. In order to affect strategic control, one must collect, arrange and analyze information on oneself, the enemy, and the environment. This is Sun Tzu's principle of intelligence in strategic control (Wee et al., 1991). Sun Tzu said that it is necessary to gather information on various factors:

Unless you know the intentions of the rulers of the neighboring states, you cannot enter into preparatory alliances with them; unless you know the lay of the land (hsing) - its mountains and forests, its passes and natural hazards, its wetlands and swamps - you cannot deploy the army on it.

And Sun Tzu suggested that the most effective means to collect information is espionage. According to him, there are five different types of spies:

There are five kinds of spies that can be employed: local (yin) spies, inside agents, double agents, expendable spies, and unexpendable spies.

Besides to get the necessary and valuable information, Sun Tzu also advocated that one must prevent the leakage of information of our firm to the enemy. This is the principles of security in strategic control (Wee et al., 1991). As you conduct espionage against the enemy, they will do the same to you. Therefore, Sun Tzu suggested five main ways of maintaining secrecy: (1) withholding strategic plans, (2) adopting tight security measures, (3) punitive deterrent, (4) creation of unpredictability, and (5) use of deception.

When any strategy is developed and put to action, we also need to do strategic control. Because the environment will never be static, one need to refined the strategy according to the changes. Therefore, strategic control act as the feedback mechanism in the strategic management (Wee et al, 1991), and Sun Tzu has advocated the principles of intelligence and security for us to adopt in doing the strategic control.

### **2.1.7 Key Success Factors (KSFs)**

In 1961, Daniel addressed that in most industries there are usually three to six factors that lead to success and these key jobs must be done well for a firm to succeed. Rokart (1979) carried this concept further and expressed that KSFs are the limited number of areas in which results, if being satisfactory, will ensure success full competitive performances for the firm. Clarke (2001) addressed that key success factors are those few, key areas that are most important in determining long-run profitability for the company. Therefore, the KSFs are areas of activity that managers must pay constant and careful attention on. According to Rokart (1979), that there are four basic sources of KSFs:

#### **(1) Structure of the particular industry**

Indeed, each industry has a set of KSFs that are determined by the different characteristics of the industry itself.

#### **(2) Competitive strategy, industry position, and geographic location**

Any firm in an industry is different from others by its history and current competitive strategy. Similarly, differences in industry position and geographic location can lead to differing KSFs from one firm to another in an industry.

#### **(3) Environmental factors**

As the gross national product and the economy fluctuate, political situations change, and the population characteristics vary, KSFs would also change for various



institutions.

#### (4) Temporal factors

Temporal KSFs often occur with the changes of internal organizational considerations. These areas of activities would lead a firm to success for a particular period time because they are below the threshold of acceptability at that time.

Jenster (1987) suggested that a strategy planning and strategic control process is tightly integrated with the firm's information system. He proposed that an information-based approach to strategy development and control which can aid top management teams in turning their strategies into action. The method incorporates nine steps: (1) Provide structure for design process; (2) determine general forces influencing strategy; (3) develop a strategic plan or review/modify the current plan; (4) Identify a selected number of KSFs; (5) determine who is responsible for which critical areas; (6) select the strategic performance indicators (SPIs); (7) develop and integrate appropriate reporting procedures; (8) implement and initiate system use by the senior personnel; and (9) establish evaluating process and procedures. As he mentioned that through the KSFs method one could identify "strategically relevant" information. Therefore, the KSFs serve as the primary integrating mechanism between management's goals and the channeling of resources and executive attention. KSFs would provide a planning process/system through which strategy formulation can be done operational and controlled with in the firm.

Vasconcellos (1988) took the research among 30 firms producing six mature industrial products to detect whether or not within approximate product environments one could identify different requirements for success. As the results showed that:

(1) The KSFs are important for firms to make excellent performances. Compared to the

competitors, if a firm performs well in a few KSFs, it will get the better profitability within each product/market.

- (2) The KSFs are different in different types of business. It indicates that different KSFs are important for different kinds of products.
- (3) The more similar two businesses are, the more similar their KSFs will be. Therefore, if one firm extends its product line to a related area, a firm can rely on the same strengths to match KSFs.

He also addressed that a firm should be specialized. A firm should concentrate on money, people and time to achieve excellence in the KSFs and specialization in strategy for the whole firm that its different product/markets share at some KSFs. As Sun Tzu noted in his work, “If our army is united as one and the enemy’s is fragmented, in suing the undivided whole to attack his one, we are many to his few. If we are able to use many to strike few, anyone we take the battle to will be in desperate circumstances”.

As Ketelhohn (1998) said, “there are KSFs for everything”. The KSFs to make profit in an industry are most effective in that industry. If one firm wants to enter an industry to compete, it must bear the minimum capabilities - KSFs. But KSFs are not enough to win. Industry KSFs are merely the primary capabilities, but operational key success factors - OKSFs which are two or three key activities if executed well would put a firm near the efficient frontier - keys to making money with a strategy.

As Mainland China’s attractive market opens to the whole world, one firm must know the KSFs in competing with others in the Chinese market (Abramson and Ai, 1999). Abramson and Ai found out some KSFs from a survey of Canadian firms doing business in China. They identified four KSFs as: (1) building “guanxi” relationship and avoiding transactional relationships; (2) having the experience to understand the uncertainties in China business environment; (3) informal coordinating of interaction patterns with the

relevant Chinese; and (4) local investment in China through value chain activity transfer.

From the above discussion, it seems that different studies tend to identify different KSF. For the purposes of this study, we have identified the following KSFs: (1) production ability, (2) marketing ability, and (3) delivery ability.

### **2.1.8 Business Performances**

Business performance, or effectiveness, is multifaceted phenomenon that we have difficulty in comprehending and measuring it (Goodman and Pennings, 1977).

Performances will vary according to different viewpoint is taken (Snow and Hrebiniak, 1980). It is clear that despite which strategy the firm adopts, it will lead to some kind of financial or non-financial results (no matter they are good or bad). Therefore, the managers want to understand if the firm's goal is completed and the strategy is definitely implemented, they must check the business performances. Jenster (1987) indicated that performance indicators must satisfy the following six principles: (1) operational, (2) indicative of desired performance, (3) acceptable to subordinates, (4) reliable, (5) timely, and (6) simple. Performance indicators are identified for strategies to link actual performances and expected results and they will facilitate managers to look out problem areas (Freund, 1988).

According to Dixon, Nanni and Vollmann, (1990), if strategies and their supporting actions are to be successful, to measure the performances of these actions and their contribution toward strategic outcomes will be the essential work. They indicated that the measurement should vary according to structural level. In the high level of the organization, the financial measures are more important. As one move down to the functional or operational areas, the operationally focused indicators will be emphasized.

In Maskell's (1992) viewpoint, although the performance measures will vary by firm

situations, they have some common characteristics: (1) they are directly related to manufacturing strategy, (2) they primarily use non-financial measures, (3) they vary between location, (4) they change as needs changes, (5) they are easy and simple to use, (6) they supply feedback to operators and managers fast, (7) they stimulate improvement rather than just monitor.

The variables of business performances in the past literatures are collected in Table 2-1.

Table 2-1 The Study Variables about Business Performances

<b>Researches</b>	<b>Year</b>	<b>Variables of performances</b>
Reimann and Negandhi	1975	Sales, Growth of profits, Growth of sales
Pennings	1976	Total production, Decline in total production, Loss due to transactional errors, Morale, Anxiety
Hattn, Schendel and Cooper	1978	Profit, Growth
Dalton and Kesner	1985	Return on equity, Common stock performances
Kaplan and Norton	1992	Customer satisfaction, Financial measures, Internal processes, Organization's innovation and improvement activities
Naman and slevin	1993	Sales level, Sales growth rate, Cash flow, Return on shareholder equity, Gross profit margin, Net profit from operations, Profit to sales ratio, Return on investment, Ability to fund business growth from profits
Pitt, Caruana and Berthon	1996	ROCE, Sales growth, Overall performances
Wu and Chen	1999	Growth, Productivity, Profitability, Brand awareness, Overall corporate image
Baker and Sinkula	1999	Change in relative market share, New product success, Overall performances
Kim and Park	2000	Sales growth, ROI, New product success
Langerak	2001	Sales growth, Profit, ROI

Note: 1. Jiang, Jeng-Sin (2000), pp.24.

2. This Research.

## 2.2 The Relationships among Constructs in this Study

In this section, it will review some literatures and try to find out the relationships

among Sun Tzu's principles of situation appraisal, strategy implementation, and strategy control, key success factor, and business performances. Then, the hypotheses would be proposed.

### **2.2.1 The Relationships among Sun Tzu's Principles of Situation Appraisal, Strategy Implementation, and Strategic Control**

Strategic management is the essence of each successful firm (McComb, 2001). At the beginning of strategic management, one firm would analyze the firm's macroenvironment, the industry in which the firm operates, and the inside of the firm (Wright Pringle and Kroll, 1994). Therefore, the firm would find out their strengths and weaknesses, and opportunities and threats outside. Through the SWOT analysis, one firm would formulate its strategies (Wright et al., 1994; Hill and Jones, 2001). Only through the effective implementation, will the strategy come true. Therefore, the firm would have the ability to compete in today's dynamic environment. Fennelly (1998) also addressed that through the strategic management, all firms scan the environment, develop and implement strategies to react to this environment, and seek strategic control system (performance-related information) to feed back to the process of formulation and implementation of strategy.

Strategic control is one of most important mechanisms to the strategic management. Rowe (1994) has addressed that strategic control is an ongoing process used to adopt implementation in response to changes in the internal or external environment. As the strategic management process, strategic control is related to the implementation of a strategy (Rowe, 1994). Strategic control involves evaluating how well a firm implements the strategy. Hertenstein and Platt (2000) addressed that the new product development (NPD) is critical for strategy implementation. They said that NPD is the key to

implementation which has led to changes in management control.

Sun Tzu has argued that before deciding how to attack (or defend), one has to evaluate: (1) “Which general is more able?” (2) “Which troops are stronger?” (3) “which army has better trained officers and men?” (4) “Which army executes law and instructions more effectively?” (5) “Which army better administers rewards and punishments?” (6) “Which ruler possesses more moral influence?” (7) “Which army is more able to obtain the advantages of climate?” and (8) “Which army is more able to obtain the advantages of terrain?” (Wee et al., 1991) In other words, before implement the strategy one has to evaluate the field situations, including (1) the way (tao), (2) climate, (3) terrain, (4) command, and (5) regulation. Thus, Sun Tzu’s principles of war are in consistence with the strategic business management. Therefore, if the environment and organization are changes, the strategy would vary and the strategy implementation activities and strategic control activities would be different. According to these literatures above, the hypotheses advocated in this research are as follows:

*H1: The degree of the adoption of Sun Tzu’s principles of situation appraisal will directly impact on a firm’s adoption of Szu’s principles of strategy implementation and strategic control.*

*H1a: The degree of the adoption of Sun Tzu’s principles of situation appraisal will directly impact on a firm’s adoption of Sun Tzu’s principles of strategy implementation.*

*H1b: The degree of the adoption of Sun Tzu’s principles of situation appraisal will directly impact on a firm’s adoption of Sun Tzu’s principles of strategic control.*

*H2: The degree of the adoption of Sun Tzu’s principles of strategy implementation will directly impact on a firm’s adoption of Sun Tzu’s principles of strategic control.*

## **2.2.2 The Relationships among Sun Tzu's Principles of Situation Appraisal, Strategy Implementation, and Strategic Control, and Key Success Factors**

In today's global business environment, the firms should flexibly respond to changes in the environment. It's said that success factors would change as the environment and strategy changes (Prince, 1998), and under such conditions, flexibly responding to changes in the environment is one of the most essential KSFs for any firm (Taudes, 1998). In Sun Tzu's *The Art of War*, it proposed that before setting up war, one should consider the five factors and seven dimensions (Wee et al., 1991; Lin, 1994; Wong et al., 1998). According to the sentence, "know the other, know yourself, and the victory will not be at risk; know the ground, know the natural conditions, and the victory can be total," we can say that Sun Tzu has proposed the "SWOT Analysis" in 2,500 years ago, and he has pointed out the importance of scanning the external and internal environment. Ganung (2001) has addressed that one firm want to success must consider the three KSFs: (1) Listing to the client's need, (2) assessing the environment, (3) coaching the personnel involved. Wing and Perry (2001) also proposed that the ability to scan the environment, identifying new markets and executing strategy change are the KSFs to make the firm succeed. According to the literature above, we could know that the ability to scan the environment would become one of the KSFs to make firms succeed, and Sun Tzu has advocated it.

Strategy implementation is the process transforming the strategic intentions into actions. In strategy implementation, the Mckinsey 7-S framework is usually adopted to analyze (Peters and Waterman, 1982). The Mckinsey 7-S framework considers the coordination of strategy, share value, structure, system, staff, style and skill. In Sun Tzu's *The Art of War*, it also mentioned the following factors to support strategy implementation:

(1) Swiftiness:

That a bird of prey when it strikes can smash its victim to pieces is

due to its timing.

If battle is protracted, your weapons will be blunted and your troops demoralized. If you lay siege to a walled city, you exhaust your strength. If your armies are kept in the field for a long time, your national reserves will not suffice.

It is believed that as firm's strategy implementation is swifter than their competitor, then the pioneer status and innovation could be resulted (Kotler, 1997).

(2) Adaptability:

“Surprise” and “Straightforward” operates give rise to each other endless just as a ring is without a beginning or an end and who can exhaust their possibility.

Thus one's victories in battle cannot be repeated- they take their form (hsing) in response to inexhaustibly changing circumstances.

There are commands from the ruler not to be obeyed.

Raymond, Julien and Ramangalahy (2001) addressed that in today's dynamic environment, the firms should continuously innovate to distinguish themselves from the competitors, and they can just fast response to the change.

(3) Deceptiveness:

Thus the expert at getting the enemy to make his move shows himself (hsing), and the enemy is certain to follow. He baits the enemy, and the enemy is certain to take it. In so doing, he moves the enemy, and lies in it for him with his full force.

At first be like a modest maiden, and the enemy will open his door; after ward be as swift as a scurrying rabbit, and the enemy will be to late to resist you.

In challenger's strategy, if one firm wants to challenge the leader in the industry, one may attack the strong side to tie up the defender's troops but launch the real attack at the side or rear and we can get the more competitive advantage (Kotler, 1997).

(4) Available means:

He who uses fire to aid the attack is powerful; he who uses water to aid the attack is forceful. Water can be used to cut the enemy off, but



cannot be used to deprive him of his supplies.

Porter (1980) provides the tools and techniques for the firm to compete in the industry and then they can find the competitive edge, such as: overall cost leadership, differentiating, and focusing. He also advocated that through the analysis of the value chain, the firm can also create and sustain a competitive advantage in its industry (Porter, 1985).

#### (5) Anticipation

To be able to take the victory by varying one's position according to (yin) the enemy's is called being inscrutable (shen).

The appropriate season is when the weather is hot and dry; the appropriate days are those when the moon passes through the constellations of the Winnowing Basket, the Wall, the Wings, and the Chariot Platform.

Boney (1995) pointed out that the firm wants to survive, it must restructure in anticipating of competition and if it will not, it is "putting their heads in the sand" and may not survive.

Some scholars have advocated the facts that implementation would be the KSFs of the firm, such factors are: No key employees and managers leave the firm (Grundy, 1996), support from the top management team, attention to the structure (Pavetti, Derr, Anderson, Trippe and Paschal, 2001), management system (Rousseau and Rousseau, 1999/2000), and motivation of management and workforce among others (Bamber, Sharp and Hides, 1999). According to the literatures above, we would know that Sun Tzu's principles of strategy implementation are correlative to the KSFs of the firm.

Strategic control system would monitor the execution of the strategy. As the environment changes, the strategy would change. Hence, if one wants to exactly know what is different or what has been done, he must depend on the strategic control.

Strategic control is the essential part of any strategy. If we want the strategic control to go well, we must collect, collate, and analyze information of external and internal environments (Wee et al., 1991). In Sun Tzu's *The Art of War*, he mentioned that the importance to acquire the information and to prevent the leakage of information is essential:

Unless you know the intentions of the rulers of the neighboring states, you cannot enter into preparatory alliances with them.

There are five kinds of spies that can be employed: local (yin) spies, inside agents, double agents, expendable spies, and unexpendable spies.

He is able to blinker the ears and eyes of his officers and men, and to keep people ignorant.

Farrell and DeRose (2000) addressed in today's variable environment, the ability to innovate, to execute, and to control are the KSFs for the firm. According to the literatures above, we may say that the strategic control, in terms of information acquisition and information protection, would be the sources of KSFs.

From the inference above, Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control would become the sources of KSFs of the success firms, and the hypotheses are:

*H3: The degree of the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control will directly impact on a firm's obtaining its key success factors.*

*H3a: The degree of the adoption of Sun Tzu's principles of situation appraisal will directly impact on a firm's obtaining its key success factors.*

*H3b: The degree of the adoption of Sun Tzu's principles of strategy implementation will directly impact on a firm's obtaining its key success factors.*

*H3c: The degree of the adoption of Sun Tzu's principles of strategic control will directly impact on a firm's obtaining its key success factors.*

### **2.2.3 The Relationships among Sun Tzu's Principles of Strategy Implementation, and Strategic Control, Key Success Factors, and Business Performances**

Barney (2001) addressed that once a firm understands how to use its resources to implement strategies, it can be sources of sustained strategic advantage. Therefore, in strategy implementation, one firm must incorporate all its resource to get the strategy implemented. Kaplan and Norton (2001) addressed that strategy implementation was the most important factor shaping the managers' assessment of management and corporate valuations. They also advocated that the tool - Balanced Scorecard Concept (BSC) (Kaplan and Norton, 1992) for strategy implementation will advance the firm to complete high business performances. Miller (1997) advocated that if one firm implement the strategy well, they will make everything intended to be done complete and attend the high degree of performances as intended. Therefore, we would know that strategy implementation will have influence on management performances.

Strategic control is the means by which senior managers ensure the subordinate managers, efficiently and effectively, to attain the firm's strategy (Teall, 1992). In general, a firm's strategy is a statement of its objectives, principles, purpose, etc. Therefore, the strategic control will ensure the firm's resources to be used to pursue its objective, and attend the desired performances. Kim and Campbell (1995) made the research about Korean electric multinationals and the analysis suggested that difference in strategic control are more responsible for the difference in performances than those of organizational strategy and structure. Hence, we would know that strategic control has the influence on the performances of the firm.

Key success factors are the areas that the firm must concentrate the most resources on. The firm would seek the way to make its strengths to match the particular KSFs. Vasconcellos and Hambrick (1989) had a research in six industries and found that if the

firm performs better than their competitors on KSFs, they will outperform competitors. Rangone (1997) addressed that there are various KSFs in many of today's industries and the firm must focus on these KSFs in order to attend higher performances. Hence, we would say that the KSFs will have the positively impact on the firm's performances.

From the inference above, Sun Tzu's principles of strategy implementation and strategic control, and key success factors would have the influences on the firms' performances and the hypotheses are:

*H4: The degree of adoption of Sun Tzu's principles of strategy implementation and strategic control will directly impact on a firm's obtaining its business performances.*

*H4a: The degree of adoption of Sun Tzu's principles of strategy implementation will directly impact on a firm's business performances.*

*H4b: The degree of adoption of Sun Tzu's principles of strategic control will directly impact on a firm's business performances.*

*H5: Key success factors will directly impact on a firm's business performances.*

#### **2.2.4 The Different adoption of Sun Tzu's principles of Situational Appraisal, Strategy Implementation, and Strategic Control, Key Success Factors and Business Performances among Different Firms and Industries in Taiwan**

Firms have been pursuing the strategic alliances or mergers and acquisitions based on the global operations to keep their competitive advantages. As the regional economic systems are increasingly developed, the overall competitiveness for the nation has gained more and more emphases. Therefore, the business operation has played its critical role for the specific national economic development. In addition, competitive environmental factors of the domestic market in Taiwan have also accelerated the internationalization of Taiwan domestic firms to locations including the United States, European countries, South

East Asian countries, and Mainland China.

Firms that operate in different countries with different political, legal, economic, and social/cultural environments might have different management styles and different strategic operating patterns. Traditionally, the Japanese and U. S. management patterns are two of the most reference modes for the operation of Taiwan domestic firms. Previous studies have shown that different management styles account for the level of international competitiveness of firms (Perters and Waterman, 1982). Many scholars have compared the Japanese management systems with the American and European ones (Ouchi, 1981; Pascale and Athos, 1981; Buckley and Mirza, 1985). Bartlett and Ghoshal (1989) demonstrated that Japanese multinational adopted “centralized hubs,” which has shown to be a very efficient domestic hub and a global, integrated system, with subsidiaries supplying mainly distribution and service functions. Many U. S. multinationals, which called “coordinated federations,” were generally much more integrated and centralized.

Given the increasing importance of global competition, scholars have demonstrated that some combinations of environment and structure fit better than others for firms to compete (Bartlett and Ghoshal, 1989; Ghoshal and Nohria, 1993). More complex and turbulent environments called for more complex organizational structures, and reflected a set of contingent performance predictions (Gupta, Raj and Wileman, 1986; Olson, Walker and Ruekert, 1995).

The fundamental paradigm of strategy states that, in order to perform well, the firm should compete in setting the KSFs match the firm’s distinctive competences. Therefore, one firm must develop strengths that match the KSFs. It is believed that in different industries, there would be different KSFs for the firm to attend. Vasconcellos and Hambrick (1989) has addressed that in different industry, there are different KSFs that the

firm perform well would lead to the higher performances.

From the inference above, it is believed that in different firms and different industries, there will be difference within the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors and business performances. The hypotheses deducted are:

*H6: There will be significant difference within the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors, and business performances among different firms and different industries.*

*H6a: There will be significant difference within the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors, and business performances among different firms.*

*H6b: There will be significant difference within the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors, and business performances among different industries.*

## **Chapter**

### **Research Design and Methodology**

This chapter first introduces the construct measurements for Sun Tzu's principles of situation appraisal, strategy implementation and strategic control, key success factors and business performances. Then, the hypotheses to be tested and the conceptual model of this research are presented. Finally, the research design, including the sampling plan, data collection, and data analysis techniques are described.

#### **3.1 Construct Measurement**

For the purposes of this study, the following five major variables are operationalized in this study: (1) Sun Tzu's principles of situation appraisal, (2) Sun Tzu's principles of strategy implementation, (3) Sun Tzu's principles of strategic control, (4) key success factors, and (5) business performances.

##### **3.1.1 Sun Tzu's Principles of Situation Appraisal**

As discuss in Chapter , Sun Tzu's *The Art of War* is useful when we consider how to make the strategic management. In this study, we adopted the comments of Wee et al. (1991) extracted some principles from *The Art of War* that would be useful for situation appraisal in strategic management. These principles comprise two factors: internal environment appraisal and external environment appraisal, and they conclude the following principles:

- (1) The leader is wise and capable, and able to gain the morel support of his subordinates so much so that they will be willing to accompany him through the thick and thin of battles.

- (2) The managers have the characteristics of wisdom, integrity, humanity, courage and discipline.
- (3) The main points of management are effective policies, programs, operating procedures, channels of communication, lines of authority, and responsibility.
- (4) The company has its relative strengths in terms of resources, such as manpower, management, money, machines, materials, methods of production (including technology), and markets served. These variables from the company's competitive edges are advantages to being big and strong.
- (5) With well-trained personnel, the firm engages in more activities with greater confidence.
- (6) The company has a more effective disciplinary procedure and reward and punishment system, therefore it is more geared towards higher performances and in a stronger position to compete.
- (7) The firm takes into account the various changes in the business and economic environment just outlined and adapt its strategies accordingly.
- (8) Where the firm is located and positioned in the marketplace is one important fact when the firm considerate its competitive competence.

Respondents are asked to indicate the level of adoption to their firms on each of the above items. Seven-point rating scales were developed to measure the opinions of respondents on all listing items. The anchor points are that 1 represents that this items is "Nearly none be adopted," and 7 represents that this item is "nearly always be adopted".

### **3.1.2 Sun Tzu's Principles of Strategy Implementation**

In this study, the following 12 principles for strategy implementation in *The Art of War* (Wee et al., 1991) are selected to measure the level of adoption for firms. These



principles are consisted of three factors: swiftness, adaptability, and deceptiveness. These principles are as follows:

- (1) Attacking at the most appropriate and suitable moment.
- (2) Attacking in the correct timing to make our force to exploit the advantages of the situation.
- (3) Achieving synergy of actions to overwhelm the enemy and to deny the enemy the benefit of time to develop effective defenses and retaliatory measures.
- (4) Aiming to complete the whole campaign within the shortest time possible.
- (5) Being flexible in our actions with respect to strategic and tactical variations in order to gain maximum advantage of changing circumstances.
- (6) Constantly searching for new and innovative ways of meeting the challenges offered by the ever-changing circumstance.
- (7) Being very responsive to changes in situations, as well as able to take preemptive action.
- (8) Concerning about changes in the environment in the implementation of strategies.
- (9) Anticipating the reaction of competitors so that men and resources can be accurately deployed for the decisive win.
- (10) Achieving distinct advantages in combat through the use of baits, which can bring the competitor to where you want to fight.
- (11) Confusing the competitor about your real intention and lower the defenses of they enemy and indirectly encourage his arrogance.
- (12) By surprising competitors, the firm catches the competitor off guard and unprepared.

Respondents are asked to indicate the level of adoption to their firms on each of the above items. Seven-point rating scales were developed to measure the opinions of respondents on all listing items. The anchor points are that 1 represents that this items is

“Nearly none be adopted,” and 7 represents that this item is “nearly always be adopted”.

### 3.1.3 Strategic Control

In this study, the following 9 principles for strategic control in *The Art of War* (Wee et al., 1991) are selected to measure the level of adoption for firms. These principles are consisted of two factors: intelligence and security. These principles are as follows:

- (1) Using the local agents (i.e., local people and local organization) to get information on the characteristics of the local agent’ homeland.
- (2) Using inside agents (i.e., the employees or important people in enemy’s organization) to spy on the state of affairs of inside agents’ firm and to sow discord among loyal official, as well as between such officials and the leader.
- (3) Using double agents (i.e., the intelligence agent from enemies) to know the competitor’s secrets, to recruit and communicate with the other types of agents, and to assist in the infiltration of the competitor with other spies.
- (4) Using doomed agents (i.e., our employees who likes to spread news) to spread fabricated information on the company that we leak out to the competitors to mislead them.
- (5) Using living agents (i.e., our employees worked in the enemy’s firm for a period then come back) to observe the competitor’s movement, to understand their strengths and weaknesses, to pilfer their plans and state secrets, and to smuggling relevant information out of the competitor’s territory.
- (6) Knowing that at a strategic level, the strategic plan should be guarded with utmost security.
- (7) Taking active measure to protect secrets and not to leave them to some third party.
- (8) Using strong and punitive deterrents for those who disclose corporate secrets.

(9) Putting its competitors into a move difficult guessing game by being adaptable and flexible in the use of strategies.

Respondents are asked to indicate the level of adoption to their firms on each of the above items. Seven-point rating scales were developed to measure the opinions of respondents on all listing items. The anchor points are that 1 represents that this item is “Nearly none be adopted,” and 7 represents that this item is “nearly always be adopted”.

### **3.1.4 Key Success Factors**

Key success factors are those few, key areas that are most important in determining long-run profitability for the firm and they are sources of competitive edges. In this study, the following question items are adopted from Vasconcellos and Hambrick (1989) and Aaker (2001). 17 items are used to identify the key success factors. Questionnaire items are designed as follows:

- (1) Image (goodwill, prestige, and attitude in the minds of the customers)
- (2) Marketing Ability (ability to persuade customers, knowledge of marketing and buyer behavior)
- (3) Advertising and sales promotion
- (4) Product research and development (activities directed towards modifying improving, adding new features to , and developing new products)
- (5) Service (installation, coaching the customers in using the product, and repairs)
- (6) A variety of products
- (7) Low price of products
- (8) Process research (engineering activities directed toward efficiencies in the way the products are manufactured)
- (9) Firm size (to exploit economies of scaled)

- (10) Customer financing (financial arrangements offered by the organization to customers in order to increase their purchasing power or facilitate the terms of sale)
- (11) Flexible ability of production
- (12) Distribution (transportation, warehousing, and expediting). (ability to maintain low distribution costs and to assure that deliveries are made on the right dates and in the right quantities)
- (13) Location of manufacturing facilities (efficient proximity to market; to transportation means; or to raw materials and labor)
- (14) Technical skills of manufacturing workforce (technical skills and level of expertise of workforce in the manufacturing plant)
- (15) Quality control (ability to maintain uniformly high level of output quality)
- (16) Purchasing (ability to obtain access to low-cost or reliable sources of inputs)
- (17) Labor relations (few stoppages and interruptions in plant production; low level of turnover, lateness and absenteeism)

Respondents are asked to indicate the extent of the firm's competitive advantages compared to the industry average according to the 17 attributes. Seven-point rating scales were developed to measure the opinions of respondents on all listing items in this section. The anchor points are that 1 represents the respondents' firm perform "relatively worse" than the industry average, and 7 represents the respondents' firm perform "relatively better" than the industry average.

### **3.1.5 Business Performances**

Lumpkin and Dess (1996) and Wu and Chen (1999) used the following items to measure the performances of firms. In this study, these ten items are used to measure the business performances. These attributes are as follows:

- (1) Growth of sales
- (2) Growth of profit
- (3) Return on investment
- (4) Productivity
- (5) Brand awareness
- (6) Employees satisfactory
- (7) Customers satisfactory
- (8) The speed of information transmitting within the organization
- (9) The ability of grasping market conditions information
- (10) The extent of authorization

Respondents are asked to indicate the extent of the firm's performances compared to the main competitor according to the 10 attributes. Seven-point rating scales were developed to measure the opinions of respondents on all listing items in this section. The anchor points are that 1 represents the respondents' firm perform "relatively worse" than the main competitor, and 7 represents the respondents' firm perform "relatively better" than the main competitor.

### **3.1.6 The Information of firms and Respondents**

The questionnaire items about firms and Respondents are as follows:

- (1) Industry of the firm
- (2) History of the firm
- (3) Annual average net sales of the firm
- (4) Employees of the firm
- (5) Sex of the respondent
- (6) Marriage of the respondent

(7) Age of the respondent

(8) Education of the respondent

(9) Position of the respondent

### 3.2 Hypotheses to be Tested

Based on the results of previous studies, the six sets of hypotheses are formulated and will be evaluated through empirical validation in this study:

***H1: The degree of the adoption of Sun Tzu's principles of situation appraisal will directly impact on a firm's adoption of Sun Tzu's principles of strategy implementation and strategic control.***

H1a: The degree of the adoption of Sun Tzu's principles of situation appraisal will directly impact on a firm's adoption of Sun Tzu's principles of strategy implementation.

H1b: The degree of the adoption of Sun Tzu's principles of situation appraisal will directly impact on a firm's adoption of Sun Tzu's principles of strategic control.

***H2: The degree of the adoption of Sun Tzu's principles of strategy implementation will directly impact on a firm's adoption of Sun Tzu's principles of strategic control.***

***H3: The degree of the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control will directly impact on a firm's obtaining its key success factors.***

H3a: The degree of the adoption of Sun Tzu's principles of situation appraisal will directly impact on a firm's obtaining its key success factors.

H3b: The degree of the adoption of Sun Tzu's principles of strategy implementation will directly impact on a firm's obtaining its key success factors.

H3c: The degree of the adoption of Sun Tzu's principles of strategic control will directly impact on a firm's obtaining its key success factors.

***H4: The degree of adoption of Sun Tzu's principles of strategy implementation and***

*strategic control will directly impact on a firm's obtaining its business performances.*

H4a: The degree of adoption of Sun Tzu's principles of strategy implementation will directly impact on a firm's business performances.

H4b: The degree of adoption of Sun Tzu's principles of strategic control will directly impact on a firm's business performances.

***H5: Key success factors will directly impact on a firm's business performances.***

***H6: There will be significant difference within the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors, and business performances among different firms and different industries.***

H6a: There will be significant difference within the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors, and business performances among different firms.

H6b: There will be significant difference within the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors, and business performances among different industries.



### 3.3 The Conceptual Model

The relationship among Sun Tzu's principles of situation appraisal, strategy implementation, strategic control, key success factors and performances are shown as Figure 3-1.

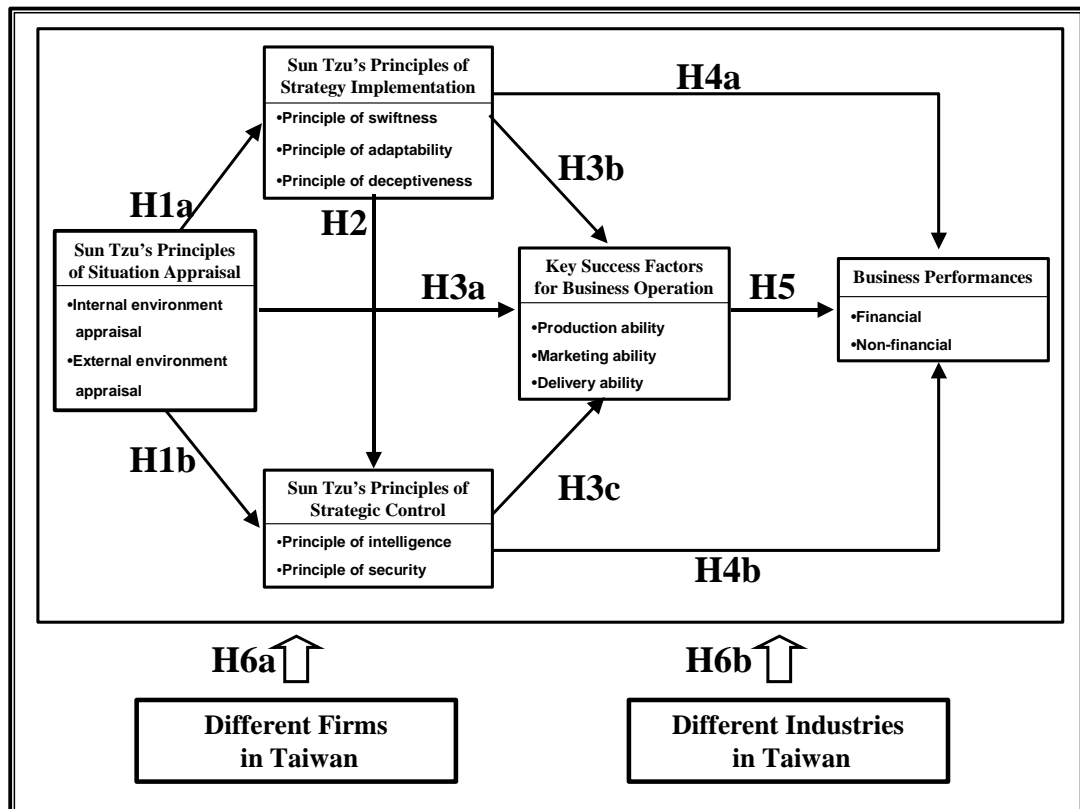


Figure 3-1 The Conceptual Model of this Study

### **3.4 Questionnaire Design**

Based on the above discussions, 65-item survey questionnaire was developed to obtain the responses from high, middle, and low level managers/supervisors about their opinions on various variables. The questionnaire of this study is consisted of seven parts: “situation appraisal (8 items),” “strategy implementation (12 items),” “strategic control (9 items),” “key success factor (17 items),” “business performances (10 items),” “the information of firms (4 items)” and “the information of respondents (5 items).”

A preliminary version of this questionnaire is designed by the author and discussed and finalized with the thesis advisor. The questionnaire was pretested through a pilot study by the EMBA students in National Cheng-Kung University. Questionnaire items were revised based on the results of the pilot study before being put into the final form. The contents of the questionnaire are shown in Appendix .

### **3.5 Sampling Plan**

A sampling plan was developed to ensure that larger corporations in Taiwan were included in this study. This study selected largest corporations in Taiwan for the samples according to the “The Largest Corporations in Taiwan (2001)” published by China Credit Information Service, Ltd. (CCIS). The top 100 firms of manufacturing and the top 100 firms of services were the samples selected in this study. The target populations were the high, middle, or low level managers/supervisors in these 200 firms. Based on the criteria, 800 questionnaires were sent to these target population. 4 questionnaires were sent to each corporation respectively. For the purpose of this study, four large corporations, Compal corporation, Taiwan Semiconductor Manufacturing company (TSMC), Formosa Plastics corporation, and China Steel corporation, were selected to be compared. 200 questionnaires were sent to these four corporations, and 50 questionnaires were sent to each corporation respectively.

### **3.6 Data Analysis Procedures**

In order to achieve the purposes of this study and test the hypotheses, the following analysis methods are used in this study. The SPSS10.0 software is the tool to analyze the collected data.

#### **3.6.1 Descriptive Statistic Analysis**

The descriptive statistic analysis is used to describe the characteristic of each variable and illustrate the means, and standard deviation of each variable.

#### **3.6.2 Measurement of Factors and Reliability of the Measures**

##### **(1) Item to Total Correlation**

Item to total correlation is used to identify the extent of the common core that a variable belongs to the domain of the concept.

##### **(2) Internal Consistency Analysis**

Coefficient alpha ( ) is used to test the internal consistency of each factor.

If is greater than 0.7 means that it has high reliability and if is smaller than 0.3 means that it has low reliability (Robinson and Shaver, 1973).

#### **3.6.3 The Method to Compare the Difference among Variables**

##### **(1) Multivariate Analysis of Variance (MANOVA)**

Multivariate analysis of variance is employed to distinguish the differences among variables or groups. The general linear model is used in analysis of variance. The F-ratios are calculated to tell whether there are differences among various comparison groups.

##### **(2) Duncan multiple Range Comparison Test**

If it is shown that the differences are significant, Duncan's multiple range comparison test is used to discover the differences among groups.

### **3.6.4 The Method to Test the Relationship among Variables**

#### **(1) Canonical Correlation Analysis**

Canonical correlation analysis is used to find out the relationships between groups of dependent variables and independent variables.

#### **(2) Multiple Regressions**

In order to test the relationships between all the variables, multiple regressions and stepwise regression analysis are used in this study.

#### **(3) Structure Equation Model**

In order to find out the relationship in the whole research model in this study, structure equation model is used. The Amos 4.0 is used to analyze the relationships in the whole research model and find out the relationships of variables in this model.



## **Chapter**

### **Research Analysis and Results**

This chapter presents three parts of the empirical results. The first section is the descriptive analysis of the respondents including the response rate of the mailed questionnaires, the attributes of the respondents, and the results of the measurement variables. The second section is the reliability tests of measurement scales. It consists of coefficient alpha, and the item to total correlation. The third section presents the results of data analysis associated with each research question.

#### **4.1 Characteristics of Respondents**

Preliminary analyses were conducted in this section to provide information about the response rates and the characteristics of respondents and sample firms. The data were gathered over three months period beginning in middle January of 2002 and ending in middle April of 2002, including one pilot test and one final survey. For the final survey, a total of 1,000 survey questionnaires were mailed to the responses of sample firms. With follow-up telephone calls, 221 questionnaires were answered. A total of 203 questionnaires were usable, and 18 questionnaires were useless. The response rate is amounted to 20.3 %.

Table 4-1 shows that the highest response rate amounts to 40.9% and the response questionnaires are from firms of technical manufacturing. The rest of the responses rates are 35.5% and 23.6%. The questionnaires are from firms of traditional manufacturing and service industry respectively.

Table 4-1 Characteristics of Sample Firms

Items		Return Number	Response Rate (%)
Industry	High-Tech Manufacturing	83	40.9
	Traditional Manufacturing	72	35.5
	Service	48	23.6
Total		203	100.0

Table 4-2 shows the characteristics of the respondents. These include the five major items in this study: (1) Gender, (2) Marriage, (3) Age, (4) Education, and (5) Position.

Table 4-2 Characteristics of Respondents

Items		Return Number	Response Rate (%)
Gender	Male	133	65.5
	Female	70	34.5
Marriage	Single	97	47.8
	Married	106	52.2
Age	Less than 30 year-old	83	40.9
	31-40 year-old	77	37.9
	41-50 year-old	33	16.3
	51-60 year-old	10	4.9
Education	Junior high school	1	0.5
	Senior high school	3	1.5
	Vocational school	42	20.7
	University	112	55.2
	Graduate school	45	22.2
Position	High-level manager	40	19.7
	Middle-Level supervisor	63	31.0
	Low-level director	48	23.6
	Others	52	25.6



From the frequencies of the response questionnaires, it can be known that the response rate of male is 65.5%. 40.9% of the respondents whose age is less than 30 years old, 37.9% of the respondents is 31-40 years old, 16.3% is 41-50 years old, and 4.9% is 51-60 years old. The respondent rate of respondents who graduated from senior high school is 1.5%, respondents who graduated from vocational school is 20.7%, the one who graduated from university is 55.2%, and the one who graduated from graduate school is 22.2%. Table 4-2 also shows that 19.7% of respondents are high-level manager, 31% are middle-level supervisor, 23.6% are low-level director, and 25.6% are others.

## 4.2 Measurement Results for Relevant Variables

Table 4-3 to Table 4-7 Provide descriptive statistics by questionnaire items. These include 8 items of situation appraisal, 12 items of strategy implementation, 9 items of strategic control, 17 items of key success factors, and 10 items for business performances.

### (1) Situation Appraisal

Table 4-3 shows that the highest extent of agreement of situation appraisal is item SA4 (5.093). The following ones are item SA7 (4.961) and SA5 (4.842). The lowest extents of agreement of situation appraisal are item SA2 (4.094) and SA1 (4.305). From above descriptions, it shows that firms stress on relative strengths, and convince the relative strengths will result on strongest competitive advantages.

Table 4-3 Descriptive Statistics of items of Situation Appraisal

Items	Mean	S.D.
SA1. The leader is wise and capable, and able to gain the more support of his subordinates so much so that they will be willing to accompany him through the thick and thin of battles.	4.305	1.588
SA2. The managers have the characteristics of wisdom, integrity, humanity, courage and discipline.	4.094	1.433
SA3. The main points of management are effective policies, programs, operating procedures, channels of communication, lines of authority, and responsibility.	4.828	1.454
SA4. The company has its relative strengths in terms of resources, such as manpower, management, money, machines, materials, methods of production (including technology), and markets served. These variables from the company's competitive edges are advantages to being big and strong.	5.093	1.363
SA5. With well-trained personnel, the firm engages in more activities with greater confidence.	4.842	1.377
SA6. The company has a more effective disciplinary procedure and reward and punishment system, therefore it is more geared towards higher performances and in a stronger position to compete.	4.517	1.514
SA7. The firm takes into account the various changes in the business and economic environment just outlined and adapt its strategies accordingly.	4.961	1.349
SA8. Where the firm is located and positioned in the marketplace is one important fact when the firm considerate its competitive competence.	4.714	1.458

## (2) Strategy implementation

Table 4-4 shows that the highest extent of agreement of strategy implementation is Item SI6 (4.887). The following ones are item SI8 (4.823) and SI5 (4.748). The lowest extents of agreement of strategy implementation are item SI10 (3.660) and SI12 (3.704). It shows that firms feel environments changing so rapidly, and they search for new and creative ways to response to these changes.

Table 4-4 Descriptive Statistics of Items of Strategy Implementation

Items	Mean	S.D.
SI1. Attacking at the most appropriate and suitable moment.	4.458	1.313
SI2. Attacking in the correct timing to make our force to exploit the advantages of the situation.	4.601	1.336
SI3. Achieving synergy of actions to overwhelm the enemy and to deny the enemy the benefit of time to develop effective defenses and retaliatory measures.	4.330	1.307
SI4. Aiming to complete the whole campaign within the shortest time possible.	3.857	1.395
SI5. Being flexible in our actions with respect to strategic and tactical variations in order to gain maximum advantage of changing circumstances.	4.748	1.435
SI6. Constantly searching for new and innovative ways of meeting the challenges offered by the ever-changing circumstance.	4.887	1.497
SI7. Being very responsive to changes in situations, as well as able to take preemptive action.	4.734	1.472
SI8. Concerning about changes in the environment in the implementation of strategies.	4.823	1.364
SI9. Anticipating the reaction of competitor so that men and resources can be accurately deployed for the decisive win.	4.370	1.319
SI10. Achieving distinct advantages in combat through the use of baits, which can bring the competitor to where you want to fight.	3.660	1.396
SI11. Confusing the competitor about your real intention and lower the defenses of they enemy and indirectly encourage his arrogance.	3.842	1.461
SI12. By surprising competitors, the firm catches the competitor off guard and unprepared.	3.704	1.397

## (3) Strategic Control

Table 4-5 shows that the highest extent of agreement of strategic control is item SC6 (4.961). The following one is SC7 (4.951). The lowest extents of agreement of strategy implementation are item SC5 (2.458) and SC4 (2.567). It

shows that at a strategic level, top management team should keep the strategic plan utmost secretive.

Table 4-5 Descriptive Statistics of Items of Strategic Control

Items	Mean	S.D.
SC1. Using the local agents (i.e., local people and local organization) to get information on the characteristics of the local agent' homeland.	4.438	1.749
SC2. Using inside agents (i.e., the employees or important people in enemy's organization) to spy on the state of affairs of inside agents' firm and to sow discord among loyal official, as well as between such officials and the leader.	3.448	1.638
SC3. Using double agents (i.e., the intelligence agent from enemies) to know the competitor's secrets, to recruit and communicate with the other types of agents, and to assist in the infiltration of the competitor with other spies.	2.975	1.497
SC4. Using doomed agents (i.e., our employees who likes to spread news) to spread fabricated information on the company that we leak out to the competitors to mislead them.	2.567	1.389
SC5. Using living agents (i.e., our employees worked in the enemy's firm for a period then come back) to observe the competitor's movement, to understand their strengths and weaknesses, to pilfer their plans and state secrets, and to smuggling relevant information out of the competitor's territory.	2.458	1.487
SC6. Knowing that at a strategic level, the strategic plan should be guarded with utmost security.	4.961	1.495
SC7. Taking active measure to protect secrets and not to leave them to some third party.	4.951	1.485
SC8. Using strong and punitive deterrents for those who disclose corporate secrets.	4.700	1.719
SC9. Putting its competitors into a move difficult guessing game by being adaptable and flexible in the use of strategies.	4.286	1.521

#### (4) Key Success Factors

Table 4-6 shows that firms think the corporation image (5.547), firm size (5.215), and quality control (5.128) are the most important key success factors for firms to success. The last important key success factors are advertising and sales promotion (3.793) and customer financing (3.967). It shows that the firms put on efforts to build nice goodwill, prestige and attitude in the minds of the customers. The firms also think that the greater the firm is, the more probable they will success.

Table 4-6 Descriptive Statistics of Items of Key Success Factors

Items	Mean	S.D.
KSF1. Image (goodwill, prestige, and attitude in the minds of the customers)	5.547	1.279
KSF2. Marketing Ability (ability to persuade customers, knowledge of marketing and buyer behavior)	4.793	1.458
KSF3. Advertising and sales promotion	3.793	1.552
KSF4. Product research and development (activities directed towards modifying improving, adding new features to , and developing new products)	4.980	1.502
KSF5. Service (installation, coaching the customers in using the product, and repairs)	5.049	1.417
KSF6. A variety of products	4.902	1.439
KSF7. Low price of products	4.384	1.442
KSF8. Process research (engineering activities directed toward efficiencies in the way the products are manufactured)	4.956	1.520
KSF9. Firm size (to exploit economies of scaled)	5.215	1.459
KSF10. Customer financing (financial arrangements offered by the organization to customers in order to increase their purchasing power or facilitate the terms of sale)	3.967	1.593
KSF11. Flexible ability of production	4.773	1.389
KSF12. Distribution (transportation, warehousing, and expediting). (ability to maintain low distribution costs and to assure that deliveries are made on the right dates and in the right quantities)	4.719	1.444
KSF13. Location of manufacturing facilities (efficient proximity to market; to transportation means; or to raw materials and labor)	4.749	1.453
KSF14. Technical skills of manufacturing workforce (technical skills and level of expertise of workforce in the manufacturing plant)	5.108	1.331
KSF15. Quality control (ability to maintain uniformly high level of output quality)	5.128	1.321
KSF16. Purchasing (ability to obtain access to low-cost or reliable sources of inputs)	4.995	1.474
KSF17. Labor relations (few stoppages and interruptions in plant production; low level of turnover, lateness and absenteeism)	5.103	1.402

#### (5) Business Performances

Table 4-7 shows that means of items of business performances are between 4.522 and 5.015. It shows that firms do most well on brand awareness (5.015) and productivity (5.000).

Table 4-7 Descriptive Statistics of Items of Business Performances

Items	Mean	S.D.
BP1. Growth of sales	4.793	1.244
BP2. Growth of profit	4.522	1.279
BP3. Return on investment	4.586	1.281
BP4. Productivity	5.000	1.156
BP5. Brand awareness	5.015	1.373
BP6. Employees satisfactory	4.596	1.329
BP7. Customers satisfactory	4.956	1.109
BP8. The speed of information transmitting within the organization	4.857	1.333
BP9. The ability of grasping market conditions information	4.867	1.209
BP10. The extent of authorization	4.627	1.521



### 4.3 Reliability Tests

To verify the dimensionality and reliability of constructs of this study, coefficient alpha analysis was conducted to purify the questionnaire item. Coefficient (Cronbach) alpha measured the internal consistency of each identified dimension. The selected criteria are (1) coefficient alpha ( ) is greater than 0.5, and (2) Item to total correlation value is greater than 0.5.

#### (1) Situation Appraisal

Table 4-8 shows the internal consistency for the factors of situation appraisal. It is shown that all variables within a factor tend to have a high coefficient of item to total correlation. In internal environment appraisal, every item-to-total correlation of the items is above 0.626. In external environment appraisal, the item-to-total correlations are above 0.503. This suggests a high degree of internal consistency for each dimension. In addition, the high coefficient of Cronbach alphas of internal environment appraisal ( = 0.867) and external environment appraisal ( = 0.668) confirm the reliability of the measurement items.

Table 4-8 Factor Patterns and Coefficient Alpha Analysis of Situation Appraisal

Factor and Item	Item-to-total correlation	Cronbach's
Internal environment appraisal		0.867
SA1. The leader is wise and capable.	0.626	
SA2. The managers have the characteristics of wisdom, integrity.	0.700	
SA3. The main points of management are effective policies.	0.697	
SA4. The company has its relative strengths in terms of resources.	0.630	
SA5. The firm engages in more activities with greater confidence.	0.673	
SA6. The company has a more effective disciplinary procedure.	0.695	
External environment appraisal		0.668
SA7. The firm takes into account the various changes in the business.	0.503	
SA8. Where the firm is located is one important fact.	0.503	

Note: The items in this table are in simplified form. Please refer to Table 4-3 to see the whole question items.

## (2) Strategy Implementation

Table 4-9 shows the internal consistency for the factors of strategy implementation. It is shown that all variables within a factor tend to have a very high coefficient of item to total correlation. In swiftness, every item-to-total correlation of the items is above 0.679. In adaptability, those item-to-total correlations are above 0.693. In deceptiveness, all item-to-total correlations are above 0.713. This suggests a high degree of internal consistency for each dimension. In addition, the high coefficient of Cronbach alphas of swiftness ( $\alpha = 0.886$ ), adaptability ( $\alpha = 0.919$ ) and deceptiveness (0.881) confirm the reliability of the measurement items.

Table 4-9 Factor Patterns and Coefficient Alpha Analysis of Strategy Implementation

Factor and Item	Item-to-total correlation	Cronbach's
<b>Swiftness</b>		0.886
SI1. Attacking at the most appropriate and suitable moment.	0.752	
SI2. Attacking in the correct timing.	0.775	
SI3. Achieving synergy of actions.	0.805	
SI4. Aiming to complete the whole campaign.	0.679	
<b>Adaptability</b>		0.919
SI5. Being flexible in our actions.	0.785	
SI6. Constantly searching for new and innovative ways.	0.802	
SI7. Being very responsive to changes in situations.	0.857	
SI8. Concerning about changes in the environment.	0.828	
SI9. Anticipating the reaction of competitors.	0.693	
<b>Deceptiveness</b>		0.881
SI10. Achieving distinct advantages in combat.	0.713	
SI11. Confusing the competitor.	0.821	
SI12. By surprising competitors.	0.777	

Note: The items in this table are in simplified form. Please refer to Table 4-4 to see the whole question items.



### (3) Strategic Control

Table 4-10 shows the internal consistency for the factors of strategy implementation. It is shown that all variables within a factor tend to have a high coefficient of item-to-total correlation. In intelligence, every item-to-total correlation of the items is above 0.565. In security, each item-to-total correlation is above 0.658. This suggests a moderate high degree of internal consistency for each dimension. In addition, the high coefficient of Cronbach alphas of intelligence ( $\alpha = 0.839$ ), and security (0.867) confirm the reliability of the measurement items.

Table 4-10 Factor Patterns and Coefficient Alpha Analysis of Strategic Control

Factor and Item	Item-to-total correlation	Cronbach's
Intelligence		0.839
SC2. Using inside agents.	0.565	
SC3. Using double agents.	0.739	
SC4. Using doomed agents.	0.736	
SC5. Using living agents.	0.667	
Security		0.867
SC6. The strategic plan should be guarded.	0.743	
SC7. Taking active measure to protect secrets.	0.796	
SC8. Using strong and punitive deterrents.	0.685	
SC9. Putting its competitors into a move difficult guessing game.	0.658	

Note: The items in this table are in simplified form. Please refer to Table 4-5 to see the whole question items.

### (4) Key Success Factors

Table 4-11 shows the internal consistency for the factors of key success factors. It is shown that all variables within a factor tend to have a high coefficient of item-to-total correlation. In production ability, every item-to-total correlation of the items is above 0.572. In marketing ability, those item-to-total correlations are

above 0.550. In delivery ability, each item-to-total correlation is above 0.559. This suggests a moderate high degree of internal consistency for each dimension. In addition, the high coefficient of Cronbach alphas of production ability ( $\alpha = 0.890$ ), marketing ability ( $\alpha = 0.774$ ), and delivery ability (0.717) confirm the reliability of the measurement items.

Table 4-11 Factor Patterns and Coefficient Alpha Analysis of Key Success Factors

Factor and Item	Item-to-total correlation	Cronbach's
Production ability		0.890
KSF1. Image	0.572	
KSF4. Product research and development	0.692	
KSF6. A variety of products	0.609	
KSF8. Process research	0.752	
KSF14. Technical skills of manufacturing workforce	0.727	
KSF15. Quality control	0.801	
KSF16. Purchasing	0.626	
KSF17. Labor relations	0.546	
Marketing ability		0.774
KSF2. Marketing Ability	0.654	
KSF3. Advertising and sales promotion	0.550	
KSF5. Service	0.628	
Delivery ability		0.717
KSF12. Distribution	0.559	
KSF13. Location of manufacturing facilities	0.559	

Note: The items in this table are in simplified form. Please refer to Table 4-6 to see the whole question items.

#### (5) Business Performances

Table 4-12 shows the internal consistency for the factors of business performances. It is shown that all variables within a factor tend to have a very high coefficient of item-to-total correlation. In financial performances, every item-to-total correlation of the items is above 0.691. In non-financial

performances, each item-to-total correlation is above 0.653. This suggests a high degree of internal consistency for each dimension. In addition, the high coefficient of Cronbach alphas of financial performances ( $\alpha = 0.901$ ), and non-financial performances (0.861) confirm the reliability of the measurement items.

Table 4-12 Factor Patterns and Coefficient Alpha Analysis of Business Performances

<b>Factor and Item</b>	<b>Item-to-total correlation</b>	<b>Cronbach's</b>
Financial performances		0.901
BP1. Growth of sales	0.816	
BP2. Growth of profit	0.849	
BP3. Return on investment	0.761	
BP4. Productivity	0.691	
Non-financial performances		0.861
BP6. Employees satisfactory	0.653	
BP7. Customers satisfactory	0.656	
BP8. The speed of information transmitting within the organization	0.723	
BP9. The ability of grasping market conditions information	0.710	
BP10. The extent of authorization	0.682	

#### **4.4 The Comparisons among Different Firms and Different Industries**

In this section, the comparisons for variables of firm and industry objectives were discussed.

##### **4.4.1 The Comparisons among Different Firms**

Table 4-13 shows the comparisons of variables for all dimensions among firm objectives - Compal corporation, Taiwan Semiconductor Manufacturing company (TSMC), Formosa Plastics corporation, and China Steel corporation. It shows that there is no significant difference in both the factors of situation appraisal. According to the high grades of the response, it can be know that all the four firms emphasize the internal and external environmental appraisal.

In strategy implementation, the four firms have significant differences in all the three factors. It indicates that TSMC performs better than the other firms. When implement strategies, TSMC emphasizes most on swiftness, adaptability, and deceptiveness. It also shows that Formosa Plastics and China Steel have lower extent agreement on these three factors.

In strategic control, the four firms have significant difference in intelligence and security. It shows that in intelligence, the grades of the response among all the four firms are somewhat low. In security, TSMC more emphasize it than do others.

In key success factors, the four firms have significant differences in marketing ability, and have no significant difference in production and delivery ability. It shows that TSMC and Compal more stress on marketing ability than do China Steel and Formosa Plastics. Although the four firms have no significant difference in production and delivery ability, TSMC perform better than the other firms.

In business performances, the four firms also have significant differences in financial

and non-financial performances. It shows that TSMC perform best in business performances among all the firms.

Table 4-13 The Comparisons for Variables of Firm Objectives

Dimensions	Factor	1 Compal (N=12)	2 TSMC (N=12)	3 Formosa Plastics (N=15)	4 China Steel (N=21)	F-Value	Duncan
Situation appraisal	Internal environmental appraisal	4.681	5.306	4.603	4.681	1.538	-
	External environmental appraisal	5.167	5.417	4.733	4.857	1.602	-
Strategy implementation	Swiftness	4.833	5.271	4.183	4.381	5.309 **	(34,41,12)
	Adaptability	5.017	5.500	4.387	4.610	3.940 *	(341,12)
	Deceptiveness	4.056	4.833	3.000	4.032	7.478 ***	(3,412)
Strategy control	Intelligence	2.980	3.583	2.400	2.429	3.977 *	(341,12)
	Security	5.292	5.563	5.083	4.464	3.969 *	(43,312)
Key success factors	Production ability	5.250	5.844	5.483	5.197	2.039	-
	Marketing ability	4.917	5.528	3.200	4.365	17.238 ***	(3,41,12)
	Delivery ability	5.542	5.208	5.133	4.738	2.175	-
Business performances	Financial performances	4.917	5.375	5.100	4.631	3.045 *	(413,132)
	Non-financial performances	4.367	5.567	4.876	4.427	4.579 **	(134,2)

Note: \*.p<0.05; \*\*.p<0.01; \*\*\*.p<0.001

To summarize, the business environments of high-tech industry change more rapidly, and the firms in this industry must to respond quickly. Because Compal and TSMC are in high-tech industry, they respond to the environment more quickly than Formosa Plastics and Chinese Steel. It can be known that TSMC performs best in situation appraisal, and it greatly adopt swiftness, adaptability, and deceptiveness in strategy implementation. Due to the fast changes of environment and strategy implementation, it also emphasize on

intelligence and security in strategic control. It can be known that products of TSMC belong to IC technology, and over the past decade IC technology has changed so rapidly that it has changed the way that all companies do business. Demands for higher speeds and product quality have increased. Therefore, TSMC perform best in production ability demands for faster time-to-market. Also, TSMC firmly believe and practice the principles that its customers' successes come first. So TSMC perform great in marketing ability to meet the demands of its customer. Through the strategic management process, it performs best among all the four firms.

Compal, the manufacture of notebook, also belongs to high-tech industry, and it performs better in situation appraisal, strategy implementation, and strategic control. Compal perform much better in marketing ability than do China Steel and Formosa Plastics. Although the Compal is the OEM firm, the marketing ability is also important.

It can be shown that Formosa Plastics and China Steel are in traditional manufacturing, they perform worse in situation appraisal, strategy implementation, and strategic control. In key success factors, the two companies also perform worse in marketing ability. But their business performances are better than these of Compal. It is in that the performance measure is that the sample firms compare with their main competitor, firms in different industries will have different performances.

#### **4.4.2 The Comparisons among Different Industries**

Table 4-14 shows the comparisons of the research constructs among high-tech manufacturing, traditional manufacturing and service industry. It indicates that there are significant differences in all the factors, except external environment appraisal and intelligence. In situation appraisal, firms in high-tech and traditional manufacturing industries stress higher on the internal environmental appraisal than do firms in service

industry. Firms in high-tech manufacturing perform the highest emphasis in internal environmental appraisal. It can be known that the competitive environment of the high-tech manufacturing is more rough and changeable. So these high-tech firms have to check the internal environmental constantly to make sure they won't be beaten by others.

Table 4-14 The Comparisons for Variables of Industry Objectives

Dimensions	Factor	1 High-tech Manufacturer (N=83)	2 Traditional Manufacturer (N=72)	3 Service Industry (N=48)	F-Value	Duncan
Situation appraisal	Internal environmental appraisal	4.769	4.694	4.222	3.980 *	(3,21)
	External environmental appraisal	4.988	4.910	4.469	3.024	-
Strategy implementation	Swiftness	4.551	4.476	3.651	11.421 ***	(3,21)
	Adaptability	4.918	4.756	4.292	4.111 *	(3,21)
	Deceptiveness	3.932	3.931	3.104	8.271 ***	(3,21)
Strategy control	Intelligence	3.048	2.40	2.724	0.204	-
	Security	4.976	4.837	4.120	7.261 **	(3,21)
Key success factors	Production ability	5.273	5.267	4.510	10.261 ***	(3,12)
	Marketing ability	4.884	4.301	4.313	5.714 **	(21,3)
	Delivery ability	5.028	4.855	4.083	9.180 ***	(3,12)
Business performances	Financial performances	5.039	4.826	4.021	15.822 ***	(3,21)
	Non-financial performances	4.981	4.811	4.388	5.116 **	(3,21)

Note: \*:p<0.05; \*\*:p<0.01; \*\*\*:p<0.001

In strategy implementation, three kinds of firms have significant differences in the swiftness, adaptability, and deceptiveness. It shows that high-tech firms most emphasize all these three kinds of actions to implement their strategy. It can be known that, on the

average, firms stress higher on the adaptability factor among these three factors.

Therefore, on the rapidly changed environment, it is important to be more adaptable.

In strategic control, three kinds of firms have significant differences in security, but have no significant difference in intelligence. It also shows that high-tech firms most take the security as the most emphasis item. As there is no significant difference in intelligence, it could be inferred that firms tend to response low about intelligence. Even there are spy actions in the companies, but these actions must be kept confidential.

In key success factors, the three kinds of firms have significant differences in production, marketing, and delivery ability. It indicates that firms of manufacturing pursue higher on production and delivery ability and firms of service emphasize higher on marketing ability.

In business performances, it shows that three kinds of firms have significant differences in both financial and non-financial performances. It shows that the high-tech firms perform best among the three.

To sum up, the research results show that high-tech and traditional manufacturers tend to perform better in adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control. These firms also perform higher in production and delivery ability, but not in marketing ability. It can be known that since their business environments change more rapidly and their products are more standardized, these firms tend to perform well in these variables. In addition, because they are outstanding in these dimensions, their business performances are great. The firms of service industry do not perform as good as other two kinds of firms in the main variables, but perform better in marketing ability. It can be known that the firms of service industry provide nice service instead of physical products, so they must pay more efforts to promote their products.

As many scholars have addressed that different firms adopt different kind of



management systems (Ouchi, 1981; Pascale and Athos, 1981; Buckley and Mirza, 1985). Some scholars advocate that combinations of environment and structure fit better than others for firms to compete (Bartleet and Ghoshal, 1989; Ghoshal and Nohria, 1993). Also firms change the way to implement the strategy according to the changes of environment, and their business performances will very indeed (Gupta, Raj and Wileman, 1986; Olson, Walker and Ruekert, 1995). Vasconcellos and Hambrick (1989) has addressed that in different industry, there are different KSFs that the firm perform well will lead to the higher performances. These statements are the same with the analysis results of this study. Therefore, we can conclude that H6, H6a, and H6b are partly supported.

## 4.5 Interrelationships between Variables

In this section, the interrelationships between different variables are evaluated. This study will test the interrelationships between Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, and key success factors. Canonical correlation analysis will be used to test the interrelationships.

### 4.5.1 Interrelationships between Situation Appraisal and Strategy Implementation

As shown in Table 4-15, Table 4-16, and Figure 4-1, the first canonical correlation model between situation appraisal and strategy implementation is significant. Therefore, the results of the first model will be analyzed.

Table 4-15 Canonical Correlations between Situation Appraisal and Strategy Implementation

Model	Eigenvalue	Cumulative Exp. Variance (%)	Canon. Cor.	Canon. R <sup>2</sup>	F-Value	P-Value
1	2.064	99.38	0.821	0.674	50.261	0.000 ***
2	0.013	0.62	0.113	0.013	1.283	0.280

Note: \*:p<0.05; \*\*:p<0.01; \*\*\*:p<0.001

Regarding the interrelations between situation appraisal and strategy implementation, firms scanning the internal and external environments well will emphasize on swiftness, adaptability, and deceptiveness in strategy implementation (CAN R<sup>2</sup>=0.674, F=50.261, p=0.000, RI=41.19%). It also shows that situation appraisal consists of internal and external environment appraisal, and the explained variance amounts to 52.76%. Strategy implementation includes swiftness, adaptability, and deceptiveness, and the explained variance amounts to 41.19%. Inferred from the above results, it is clear that

interrelationships do exist between the factors of situation appraisal and those of strategy implementation.

Table 4-16 Canonical Loadings of Situation Appraisal and Strategy Implementation

<b>Covariates Variable</b>	<b>Situation Appraisal</b>	<b>Canonical Loadings (W1)</b>
	Internal environmental appraisal	0.920*
	External environmental appraisal	0.848*
	Pct Var DE	78.33%
	RI	52.76%
<b>Dependent Variable</b>	<b>Strategy Implementation</b>	<b>Canonical Loadings (V1)</b>
	Swiftness	0.823*
	Adaptability	0.962*
	Deceptiveness	0.481*
	Pct Var DE	61.15%
	RI	41.19%

Note: \*: canonical loadings > 0.3; means the important factors.

#### 4.5.2 The Interrelationships between Situation Appraisal and Strategic Control

As shown in Table 4-17, Table 4-18, and Figure 4-1, the first canonical correlation model between situation appraisal and strategic control is significant. Therefore, the results of the first model will be analyzed. It shows that as firms scanning the internal and external environment, they tend to adopt security in strategic control (CAN  $R^2=0.360$ ,  $=24.951$ ,  $p=0.000$ ,  $RI=17.73\%$ ). It also shows that situation appraisal consists of internal and external environment appraisal, and the explained variance amounts to 28.34%. Strategic control only includes one factor, security, and the explained variance amounts to 17.73%. From the above results, it is clear that interrelationships do exist between the factors of situation appraisal and those of strategic control.

Table 4-17 Canonical Correlations between Situation Appraisal and Strategic Control

Roots	Eigenvalue	Cumulative Exp. Variance (%)	Canon. Cor.	Canon. R <sup>2</sup>	F-Value	P-Value
1	0.563	99.85	0.600	0.360	24.951	0.000 ***
2	0.001	0.15	0.029	0.001	0.172	0.679

Note: \*:p<0.5; \*\*:p<0.01; \*\*\*:p<0.001

Table 4-18 Canonical Loadings of Situation Appraisal and Strategic Control

Covariates Variable	Situation Appraisal	Canonical Loadings (W1)
	Internal environmental appraisal	0.887*
	External environmental appraisal	0.887*
	Pct Var DE	78.68%
	RI	28.34%
Dependent Variable	Strategic Control	Canonical Loadings (V1)
	Intelligence	0.077
	Security	0.989*
	Pct Var DE	49.17%
	RI	17.73%

Note: \*: canonical loadings > 0.3; means the important factors

#### 4.5.3 The Interrelationships between Strategy Implementation and Strategic Control

As shown in Table 4-19, Table 4-20, and Figure 4-1, there are two canonical correlation models between situation appraisal and strategic control, the canonical correlation coefficient of the second model is less than 0.5, so the explanation ability is not significant. Therefore, the results of the first model will be analyzed. It shows that there is a significant interrelation between strategy implementation and strategic control. If firms adopt swiftness, adaptability, and deceptiveness in strategy implementation, they will emphasize intelligence and security (CAN R<sup>2</sup>=0.641, F=30.783, p=0.000, RI=24.13%). It also indicates that strategy implementation is composed of swiftness, adaptability, and

deceptiveness, and the explained variance amounts to 29.10%. Strategic control includes intelligence and security, and the explained variance amounts to 24.13%. From the above results, it is clear that interrelationships do exist between the factors of strategy implementation and those of strategic control.

Table 4-19 Canonical Correlations between Strategy Implementation and Strategic Control

Roots	Eigenvalue	Cumulative Exp. Variance (%)	Canon. Cor.	Canon. R <sup>2</sup>	F-Value	P-Value
1	0.696	72.25	0.641	0.411	30.783	0.000***
2	0.268	27.75	0.459	0.211	26.619	0.000***

Note: \*:p<0.05; \*\*:p<0.01; \*\*\*:p<0.001

Table 4-20 Canonical Loadings of Strategy Implementation and Strategic Control

Covariates Variable	Strategy Implementation	Canonical Loadings (W1)	Canonical Loadings (W2)
	Swiftness	0.905*	-0.200
	Adaptability	0.771*	-0.496*
	Deceptiveness	0.844*	0.518*
	Pct Var DE	70.87%	18.51%
	RI	29.10%	3.97%
Dependent Variable	Strategic Control	Canonical Loadings (V1)	Canonical Loadings (V2)
	Intelligence	0.531*	0.848*
	Security	0.946*	-0.325*
	Pct Var DE	58.78%	41.22%
	RI	24.13%	8.70%

Note: \*: canonical loadings > 0.3; means the important factors

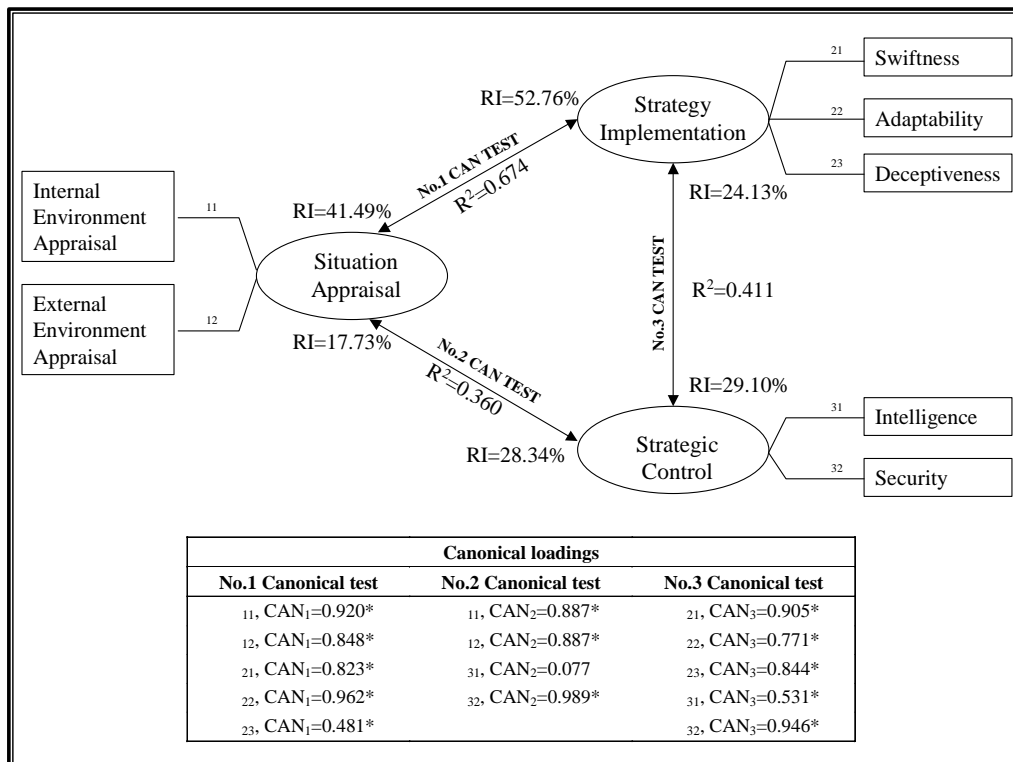


Figure 4-1 Canonical Relations among Situation Appraisal, Strategy Implementation, and Strategic Control

To integrate the above three models of canonical correlation analysis, the results are shown in Figure 4-1. It is shown that the interrelationships among the factors of situation appraisal, strategy implementation, and strategic control are significant and positive. These results seem to suggest that firms taking higher level of adoptions on Sun Tzu’s principles of situation appraisal tend to perform better on strategy implementation and strategic control.

The above results have performed some managerial implications. As Sun Tzu advocated that before fighting, one should evaluate the internal and external environments (five criteria and seven dimensions), therefore, one can know his relative strong points in strategy implementation. Also after one do situation appraisal, they will encounter some changes. Then they will need to do strategic control to get this information in responding

to these changes. Therefore, these three kinds of variables will influence each other. In Sun Tzu's words:

Know the other, know yourself, and the victory will not be at risk; know the ground, know the natural conditions, and the victory can be total.

For this reason, the victorious army only enters battle after having first won the victory, while the defeated army only seeks victory after having first entered the fray.

That the velocity of cascading water can send boulders bobbing about is due to its strategic advantage (shih).

Unless you know the intentions of the rulers of the neighboring states, you cannot enter into preparatory alliances with them; unless you know the lay of the land (hsing) - its mountains and forests, its passes and natural hazards, its wetlands and swamps - you cannot deploy the army on it.

From the above discussion, we can conclude that H1, H1a, H1b, and H2 are supported.

#### **4.5.4 The Interrelationships between Situation Appraisal and Key Success Factors**

As shown in Table 4-21, Table 4-22, and Figure 4-2, the first canonical correlation model between situation appraisal and key success factors is significant. Therefore, the results of the first model will be analyzed. Regarding the interrelations between situation appraisal and key success factors, firms scanning the internal and external environments well will lead to higher production, marketing, and delivery ability (CAN  $R^2=0.506$ ,  $F=28.273$ ,  $p=0.000$ ,  $RI=34.66\%$ ). It also shows that situation appraisal consists of internal and external environment appraisal, and the explained variance amounts to 39.65%. Key success factors include production, marketing, and delivery ability, and the explained variance amounts to 34.66%. It is clear that interrelationships do exist between the factors of situation appraisal and those of key success factors.

Table 4-21 Canonical Correlations between Situation Appraisal and Key Success Factors

Roots	Eigenvalue	Cumulative Exp. Variance (%)	Canon. Cor.	Canon. R <sup>2</sup>	F-Value	P-Value
1	1.023	99.16	0.711	0.506	28.273	0.000 ***
2	0.009	0.84	0.093	0.009	0.866	0.422

Note: \*:p<0.05; \*\*:p<0.01; \*\*\*:p<0.001

Table 4-22 Canonical Loadings of Situation Appraisal and Key Success Factors

Covariates Variable	Environmental Appraisal	Canonical Loadings (W1)
	Internal environmental appraisal	0.916*
	External environmental appraisal	0.854*
	Pct Var DE	78.42%
	RI	39.65%
Dependent Variable	Key Success Factors	Canonical Loadings (V1)
	Production ability	0.976*
	Marketing ability	0.772*
	Delivery ability	0.713*
	Pct Var DE	68.56%
	RI	34.66%

Note: \*: canonical loadings > 0.3; means the important factors

#### 4.4.5 The Interrelationships between Strategy Implementation and Key Success Factors

As shown in Table 4-23, Table 4-24, and Figure 4-2, the first canonical correlation model between situation appraisal and key success factors is significant. Therefore, the results of the first model will be analyzed. It shows that the interrelations between strategy implementation and key success factors are positive and significant. If firms adopt swiftness, adaptability, and deceptiveness in strategy implementation, they will possess the production, marketing, and delivery ability to succeed (CAN R<sup>2</sup>=0.554, F=21.663, p=0.000, RI=34.66%). It also indicates that strategy implementation is



concluded of swiftness, adaptability, and deceptiveness, and the explained variance amounts to 34.64%. Key success factors consist of production, marketing, and delivery ability, and the explained variance amounts to 38.33%. From the above results, it is clear that interrelationships do exist between the factors of strategy implementation and those of key success factors.

Table 4-23 Canonical Correlations between Strategy Implementation and Key Success Factors

Roots	Eigenvalue	Cumulative Exp. Variance (%)	Canon. Cor.	Canon. R <sup>2</sup>	F-Value	P-Value
1	1.241	98.13	0.744	0.554	21.663	0.000 ***
2	0.020	1.55	0.139	0.019	1.167	0.325
3	0.004	0.318	0.063	0.004	0.799	0.372

Note: \*:p<0.05; \*\*:p<0.01; \*\*\*:p<0.001

Table 4-24 Canonical Loadings of Strategy Implementation and Key Success Factors

Covariates Variable	Strategy Implementation	Canonical Loadings (W1)
	Swiftness	0.827*
	Adaptability	0.963*
	Deceptiveness	0.515*
	Pct Var DE	62.55%
	RI	34.64%
Dependent Variable	Key Success Factors	Canonical Loadings (V1)
	Production ability	0.956*
	Marketing ability	0.828*
	Delivery ability	0.690*
	Pct Var DE	69.22%
	RI	38.33%

Note: \*: canonical loadings > 0.3; means the important factors

#### 4.5.6 The Interrelationships between Strategic Control and Key Success Factors

As shown in Table 4-25, Table 4-26, and Figure 4-2, there are two canonical correlation models between strategic control and key success factors significant. However, the square of the canonical correlation coefficient of the second model is less than 0.1, so the explanation ability is not enough. Therefore, the results of the first model will be analyzed.

Table 4-25 Canonical Correlations between Strategic Control and Key Success Factors

Roots	Eigenvalue	Cumulative Exp. Variance (%)	Canon. Cor.	Canon. R <sup>2</sup>	F-Value	P-Value
1	0.573	85.97	0.604	0.364	20.560	0.000***
2	0.093	14.03	0.292	0.085	9.302	0.000***

Note: \*:p<0.05; \*\*:p<0.01; \*\*\*:p<0.001

Table 4-26 Canonical Loadings of Strategic Control and Key Success Factors

Covariates Variable	Strategic Control	Canonical Loadings (W1)	Canonical Loadings (W1)
	Intelligence	0.148	0.989*
	Security	0.997*	0.080
	Pct Var DE	50.77%	49.23%
	RI	18.50%	4.21%
Dependent Variable	Key Success Factors	Canonical Loadings (V1)	Canonical Loadings (V1)
	Production ability	0.978*	-0.104
	Marketing ability	0.596*	0.527*
	Delivery ability	0.766*	0.514*
	Pct Var DE	63.31%	18.45%
	RI	23.06%	1.58%

Note: \*: canonical loadings > 0.3; means the important factors

Regarding the interrelationship between strategic control and key success factors, it is shown that the interrelations between strategic control and key success factors are significant. If firms adopt security in strategic control, they will keep production, marketing, and delivery ability as their key success factors (CAN  $R^2=0.364$ ,  $F=20.560$ ,  $p=0.000$ ,  $RI=23.06\%$ ). It also shows that strategic control includes only one factor, security, and the explained variance amounts to 18.50%. Key success factors consist of production, marketing, and delivery ability, and the explained variance amounts to 23.06%. Interred from the above results, it is clear that inter-relationships do exist between strategic control and key success factors.

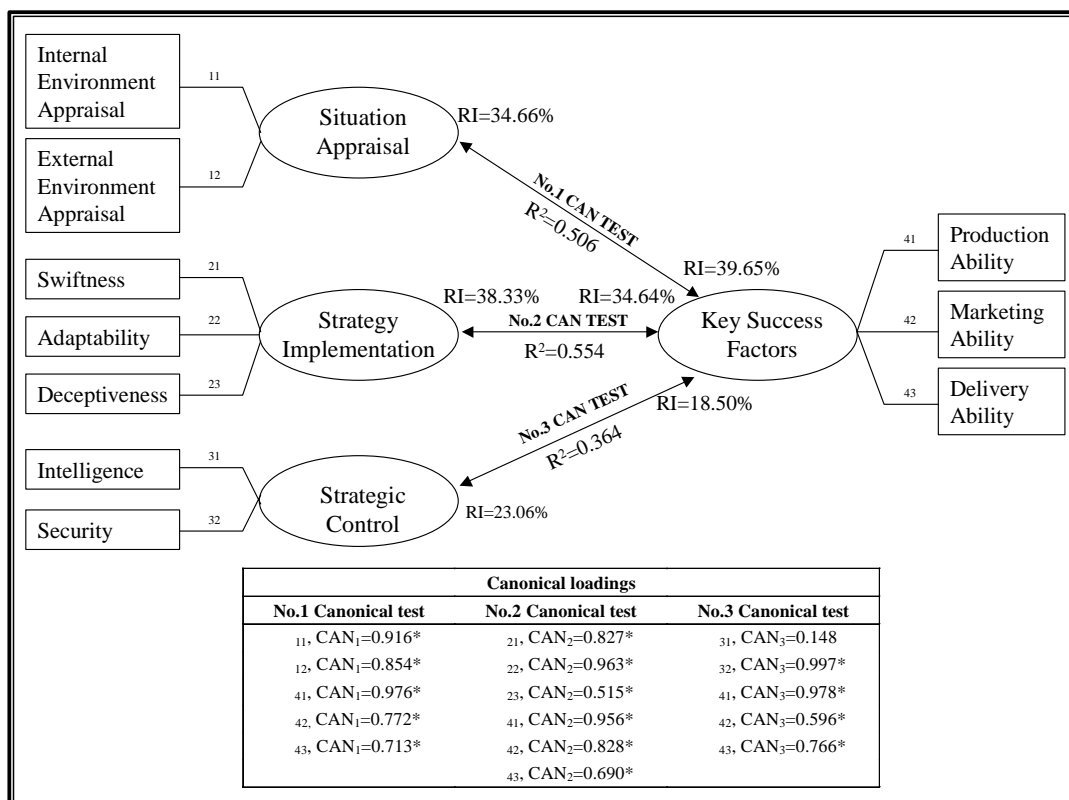


Figure 4-2 Canonical Relations among Situation Appraisal, Strategy Implementation, Strategic Control, and Key Success Factors

To integrate the above three models of canonical correlation analysis, the results are

shown in Figure 4-2. It is shown that the interrelationships between the factors of situation appraisal, strategy implementation, strategic control and key success factors are significantly positive. These results seem to suggest that firms taking higher level of adoptions on Sun Tzu's principles of situation appraisal, strategy implementation and strategic control tend to perform better on key success factors.

The above results have performed some managerial implications. Wing and Perry (2001) proposed that the ability to scan the environments will produce the KSFs to make the firms succeed. Some other scholars also addressed that strategy implementation and strategic control will lead to the KSFs (Grundy, 1996; Pavetti et al., 2001; Rousseau and Rousseau, 1999/2000; Bamber et al., 1999; Farrell and DeRose, 2000). These statements are the same with the analysis results of this study. Therefore, H3, H3a, H3b, and H3c are supported.

## **4.6 Relationships among Situation Appraisal, Strategy Implementation, Strategic Control, Key Success Factors and Business Performances**

For the purpose of empirically investigating the relationships between constructs of situation appraisal, strategy implementation, strategic control, key success factors, and business performances, multiple regression was conducted in this study. To formally examine these relationships, this study used the two various components of business performances (financial and non-financial) as the dependent variables and the factors of situation appraisal, strategy implementation, strategic control, and key success factors as the independent variables to conduct multiple regression analysis.

### **4.6.1 Relationships among Situation Appraisal, Strategy Implementation, Strategic Control, Key Success Factors and Financial Performances**

In this part, this study adopts financial performances as the dependent variable, and the factors of situation appraisal, strategy implementation, strategic control, and key success factors as the independent variables in following regression models:

$$\text{M1: } Y = a + b_{1i}X_{1j} + \varepsilon_1$$

$$\text{M2: } Y = a + b_{2i}X_{2j} + \varepsilon_2$$

$$\text{M3: } Y = a + b_{3i}X_{3j} + \varepsilon_3$$

$$\text{M4: } Y = a + b_{4i}X_{4j} + \varepsilon_4$$

$$\text{M5: } Y = a + b_{1i}X_{1j} + b_{2i}X_{2j} + \varepsilon_5$$

$$\text{M6: } Y = a + b_{1i}X_{1j} + b_{3i}X_{3j} + \varepsilon_6$$

$$\text{M7: } Y = a + b_{1i}X_{1j} + b_{4i}X_{4j} + \varepsilon_7$$

$$\text{M8: } Y = a + b_{1i}X_{1j} + b_{2i}X_{2j} + b_{3i}X_{3j} + \varepsilon_8$$

$$\text{M9: } Y = a + b_{1i}X_{1j} + b_{2i}X_{2j} + b_{4i}X_{4j} + \varepsilon_9$$

$$\text{M10: } Y = a + b_{1i}X_{1j} + b_{3i}X_{3j} + b_{4i}X_{4j} + \varepsilon_{10}$$

$$\text{M11: } Y = a + b_{1i}X_{1j} + b_{2i}X_{2j} + b_{3i}X_{3j} + b_{4i}X_{4j} + \varepsilon_{11}$$

Where  $Y$ = financial performances

$a$  = intercept term

$b_{ii}$  = regression coefficient

$X_{1j}$  = factors of environment appraisal, i.e., internal environment appraisal and external environment appraisal

$X_{2j}$  = factors of strategy implementation, i.e., swiftness, adaptability, and deceptiveness

$X_{3j}$  = factors of strategic control, i.e., intelligence and security

$X_{4j}$  = key success factors, i.e., production, marketing, and delivery ability

$i$  = error term

Table 4-27 Regression Models of Financial Performances

Dependent variables Independent variables		Financial performances											
		Model	M1	M2	M3	M4	M5	M6	M7	M8	M9	M10	M11
KSFs	Production ability		0.52***				0.50***	0.43***	0.49***	0.45***	0.48***	0.42***	0.44***
	Marketing ability		0.23**				0.23**	0.18**	0.25***	0.19***	0.24**	0.19**	0.20**
	Delivery ability		0.02				0.02	0.01	0.03	0.01	0.03	0.02	0.03
SA	Internal environment appraisal			0.37***			0.07			-0.04	0.06		-0.04
	External environment appraisal			0.21**			-0.03			-0.11	-0.04		-0.11
SI	Swiftness				0.31***			0.15		0.19*		0.16*	0.19*
	Adaptability				0.40***			0.09		0.14		0.07	0.13
	Deceptiveness				-0.05			-0.03		-0.35		0.02	0.01
SC	Intelligence				-0.06			-0.05		-0.05	-0.07	-0.08	
	Security				0.43***			0.04		0.03	-0.04	-0.01	
R <sup>2</sup>			0.498	0.270	0.375	0.176	0.500	0.518	0.501	0.524	0.503	0.522	0.529
F Value			65.813	36.911	39.856	21.376	39.444	35.061	39.532	26.745	28.159	26.497	21.578
P Value			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Note: 1. \*:p<0.05; \*\*:p<0.01; \*\*\*:p<0.001

2. KSFs: Key Success Factors; SA: Situation Appraisal; SI: Strategy Implementation; SC: Strategic Control.

Table 4-27 shows the regression results of relationships among factors of situational appraisal, strategy implementation, strategic control, key success factors, and financial

performances. Models MI~M4 show that production and marketing ability of key success factors, internal and external environment appraisal of situation appraisal, swiftness and adaptability of strategy implementation, and security of strategic control have significant influences on financial performances ( $R^2=0.176\sim 0.498$ ,  $F=21.376\sim 65.813$ ,  $p=0.000$ ). Among various variables explaining financial performance, the factors of KSFs achieve highest explained variance ( $R^2=0.498$ ), followed by the factors of strategy implementation ( $R^2=0.375$ ), factors of situation appraisal ( $R^2=0.270$ ), and factors of strategic control ( $R^2=0.170$ ). The factors of strategic control explain the least variance on financial performances. This result may cause from the insignificant influence of intelligence. This situation may indicate either that firms do not pay enough attention on information collection, or that firms do not feel that the method of information collection as suggested by Sun Tzu is not acceptable to the normal practices of business operations.

Models M5~M11 indicate that production and marketing ability of key success factors and swiftness of strategy implementation have positive and significant influences on financial performances ( $R^2=0.500\sim 0.529$ ,  $F=21.578\sim 39.532$ ,  $p=0.000$ ). In the integrate model, it shows that firms must take rapid actions in strategy implementation and the financial performances will be great. Firms also have to make more efforts in production and marketing ability, because these will help firms get better financial performances.

#### **4.6.2 Relationships among Situation Appraisal, Strategy Implementation, Strategic Control, Key Success Factors and Non-Financial Performances**

In this part, this study adopts non-financial performances as the dependent variable, and the factors of situation appraisal, strategy implementation, strategic control, key success factors as the independent variables in following regression models:

$$\begin{aligned} \text{M12: } Y &= a + b_{1i} X_{1j} + \varepsilon_1 \\ \text{M13: } Y &= a + b_{2i} X_{2j} + \varepsilon_2 \\ \text{M14: } Y &= a + b_{3i} X_{3j} + \varepsilon_3 \\ \text{M15: } Y &= a + b_{4i} X_{4j} + \varepsilon_4 \\ \text{M16: } Y &= a + b_{1i} X_{1j} + b_{2i} X_{2j} + \varepsilon_5 \\ \text{M17: } Y &= a + b_{1i} X_{1j} + b_{3i} X_{3j} + \varepsilon_6 \\ \text{M18: } Y &= a + b_{1i} X_{1j} + b_{4i} X_{4j} + \varepsilon_7 \\ \text{M19: } Y &= a + b_{1i} X_{1j} + b_{2i} X_{2j} + b_{3i} X_{3j} + \varepsilon_8 \\ \text{M20: } Y &= a + b_{1i} X_{1j} + b_{2i} X_{2j} + b_{4i} X_{4j} + \varepsilon_9 \\ \text{M21: } Y &= a + b_{1i} X_{1j} + b_{3i} X_{3j} + b_{4i} X_{4j} + \varepsilon_{10} \\ \text{M22: } Y &= a + b_{1i} X_{1j} + b_{2i} X_{2j} + b_{3i} X_{3j} + b_{4i} X_{4j} + \varepsilon_{11} \end{aligned}$$

Where  $Y$ = non-financial performances

$a$  = intercept term

$b_{ii}$  = regression coefficient

$X_{1j}$  = factors of environment appraisal, i.e., internal environment appraisal and external environment appraisal

$X_{2j}$  = factors of strategy implementation, i.e., swiftness, adaptability, and deceptiveness

$X_{3j}$  = factors of strategic control, i.e., intelligence and security

$X_{4j}$  = key success factors, i.e., production, marketing, and delivery ability

$i$  = error term

Table 4-28 shows the regression results of relationships among factors of situational appraisal, strategy implementation, strategic control, key success factors, and non-financial performances. Models M12~M15 show that production and marketing ability of key success factors, internal and external environment appraisal of situation appraisal, adaptability of strategy implementation, and security of strategic control have significant influences on non-financial performances ( $R^2=0.191\sim0.504$ ,  $F=23.566\sim67.508$ ,  $p=0.000$ ). Among various variables explaining non-financial performance, the factors of KSFs achieve highest explained variance ( $R^2=0.504$ ), followed by the factors of situation appraisal ( $R^2=0.452$ ), strategy implementation factors of ( $R^2=0.452$ ), and factors of



strategic control ( $R^2=0.191$ ). Models M16~M22 indicate that production and marketing ability of key success factors, internal environment appraisal of situation appraisal, swiftness, adaptability, and deceptiveness of strategy implementation have significant influences on non-financial performances ( $R^2=0.512\sim0.620$ ,  $F=31.334\sim56.354$ ,  $p=0.000$ ).

Table 4-28 Regression Models of Non-financial Performances

Dependent variables Independent variables		Non-Financial performances												
		Model	M12	M13	M14	M15	M16	M17	M18	M19	M20	M21	M22	
KSFs	Production ability		0.44***				0.23**	0.31***	0.38***	0.23**	0.23**	0.28***	0.22**	
	Marketing ability		0.32***				0.26***	0.24***	0.34***	0.24***	0.27***	0.26***	0.26***	
	Delivery ability		0.02				0.01	0.01	0.03	-0.01	0.02	0.03	0.02	
SA	Internal environment appraisal			0.55***			0.36***			0.33***	0.36***		0.32***	
	External environment appraisal			0.21**			0.06			0.07	0.07		0.07	
SI	Swiftness				0.01				-0.12		-0.20**		-0.13	-0.20**
	Adaptability					0.61***			0.33***		0.14		0.31***	0.13
	Deceptiveness				0.10				0.12		0.14		0.18**	0.19**
SC	Intelligence					-0.06			-0.08		-0.04		-0.12*	-0.09
	Security					0.45***			0.09		-0.02		0.02	-0.03
R <sup>2</sup>			0.504	0.482	0.452	0.191	0.589	0.565	0.512	0.613	0.591	0.575	0.620	
F Value			67.508	92.983	54.690	23.566	56.354	42.496	41.412	38.473	40.193	32.782	31.334	
P Value			0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	

Note: 1. \*:  $p<0.05$ ; \*\*:  $p<0.01$ ; \*\*\*:  $p<0.001$

2. KSFs: Key Success Factors; SA: Situation Appraisal; SI: Strategy Implementation; SC: Strategic Control.

In these models, the results indicate that swiftness and intelligence have negative significant influences to non-financial performances. It can be inferred that employees have to adapt to the rapidly changed internal and external environment in order to achieve better non-financial performances. They may feel confused or tired, if the

implementation actions change too often. Also if the firms take actions too swiftly, they may lose some important information which is not even disclosed. The intelligence is about espionage in Sun Tzu's principles of war. Although the espionage is considered as immoral, despicable, and unacceptable, the fact remains that it exists (Wee et al., 1991). Because most people condemn it as unethical, it can be done without being leaked out. About the integral model, it shows that firms must scan the internal and external environment, keep their strategy from being known by competitors, plan carefully before actions, and focus on production and marketing ability, then they will perform well in non-financial performances, such as employees satisfactory, customers satisfactory, and transmission of information.

Kanplan and Norton (1992) addressed that strategy implementation will advance firms to complete higher business performances. Kim and Campbell (1995) proposed that strategic control will impact on business performances. Vasconcellos and Hambrick (1989) advocated that firms perform better than their competitors on key success factors will outperform in the competitive market. Comparing the analysis results to previous literatures, we can conclude that H4, H4a, H4b, and H5 are partly supported.

#### **4.7 Structure Equation Model**

The objective of this study is to find out the relationships between Sun Tzu's principles of wars, key success factors, and business performances. For the purpose, Structure Equation Model is used to test the interrelationship of all the variables in the integral model.

In this study, 5 indices were used to test the fit of the model. The first one was the chi-square test, the essential for the nested model comparison. A low and nonsignificant value of chi-square is considered as good fit to the data. Because the chi-square test is sensitive to sample size, the ratio of the model chi-square to degrees of freedom was used to the second fit index (Vigoda, 2000). The other fit indices used in this study were the root mean square residual (RMR), the goodness of fit index (GFI), and the adjusted goodness of fit index (AGFI). The smaller the RMR is, the better the fit of the model. A value of 0.05 indicates a close fit (Arbuckle & Wothke, 1999; Vigoda, 2000). GFI and AGFI do not depend on sample size explicitly and test how much better the model fits than no model at all. The value of these two indices should be between zero and 1, and a value higher 0.9 represents very good fit (Arbuckle & Wothke, 1999; Vigoda, 2000). The quality of the a priori alternative models should rely on the fit indices. However, it does not necessarily mean that one model is superior or the correct causal model. Another important criterion for the quality of the model is the plausibility criterion (Joreskog & Sorbom, 1994). It means the path coefficients in the model adhere to the general theoretical conception and to the hypotheses. Therefore, a model fits the data well, but many of whose theoretical paths do not support the hypotheses, cannot be defined as correct. Hence, the fit indices and the theoretical predictions should be taken into consideration.

According to the criterion above, the best model (see Figure 4-3) is tested in this study. Table 4-29 estimates the fit indices of the model. It shows a somewhat big,

significant chi-square (183.780); the ratio of chi-square to the degrees of freedom is lower than 2 (1.935); RMR is 0.097, GFI is 0.910, AFGI is 0.870. These fit indices indicate moderate fit of this model.

Table 4-29 and Figure 4-3 also provide the structural coefficients for the models. Most the coefficients of the paths are significant. It shows that situation appraisal has positive significant influences on strategy implementation ( $\beta = 0.797$ ); strategy implementation has positive significant influences on strategic control ( $\beta = 0.437$ ); strategy implementation has positive significant influences on key success factors ( $\beta = 0.435$ ); strategic control has positive significant influences on key success factors ( $\beta = 0.346$ ); strategy implementation has positive significant influences on business performances ( $\beta = 0.305$ ); key success factors has positive significant influences on business performances ( $\beta = 0.395$ ). The relationships between situation appraisal and strategic control, situation appraisal and key success factors, and strategic control and business performances are not significant at 0.05 confidence level.

As to the relationships between items and dimensions tested in this model, all the coefficients are significant. In situation appraisal, firms most emphasize on the capable managers (item SA2,  $\beta = 0.784$ ). The other influence items of situation appraisal are organization systems (item SA3,  $\beta = 0.761$ ), effective disciplinary procedures (item SA6,  $\beta = 0.738$ ) and a wise and able leader (item SA1,  $\beta = 0.724$ ). Therefore, the outstanding staff takes a great part in organization operation.

In strategy implementation, firms most emphasize on taking preemptive action (item SI7,  $\beta = 0.888$ ). The other influence items of strategy implementation are searching for new and innovative ways (item SI6,  $\beta = 0.876$ ) and keeping flexible in actions (item SI5,  $\beta = 0.822$ ).

Table 4-29 The Results of Structure Equation Model

	Relations	Coefficients	C. R.	
Variables	Situation appraisal	SA1	0.724 *	a
		SA2	0.784 *	10.290
		SA3	0.761 *	10.010
		SA6	0.738 *	9.734
	Strategy implementation	SI5	0.822 *	14.849
		SI6	0.876 *	a
		SI7	0.888 *	16.883
	Strategic control	SC6	0.836 *	15.324
		SC7	0.939 *	a
		SC8	0.699 *	11.707
	Key success factors	KSF8	0.767 *	13.282
		KSF14	0.825 *	14.905
		KSF15	0.908 *	a
	Business performances	BP1	0.839 *	17.042
		BP2	0.951 *	a
BP3		0.827 *	16.566	
Paths	Situation appraisal - > Strategy implementation		0.797 *	9.409
	Situation appraisal - > Strategic control		0.231	1.769
	Strategy implementation - > Strategic control		0.437 *	3.426
	Situation appraisal - > Key success factors		0.047	0.392
	Strategy implementation - > Key success factors		0.435 *	3.417
	Strategic control - > Key success factors		0.346 *	4.217
	Strategy implementation - > Business performances		0.305 *	3.180
	Strategic control - > Business performances		0.022	0.249
	Key success factors - > Business performances		0.395 *	3.866
Fit index	Chi-Square		183.780 (P=0.000)	
	Degree of freedom (d. f.)		95	
	Chi-Square/ d. f.		1.935	
	GFI		0.910	
	AGFI		0.870	
	RMR		0.097	

Note: 1. \*: C. R.>1.96; using a significance level of 0.05, critical ratios that exceed 1.96 would be called significant.

2. a: the parameter compared by others is set as 1, therefore there is no C. R.. It is determined as significant.

3. the coefficients are standardized value.

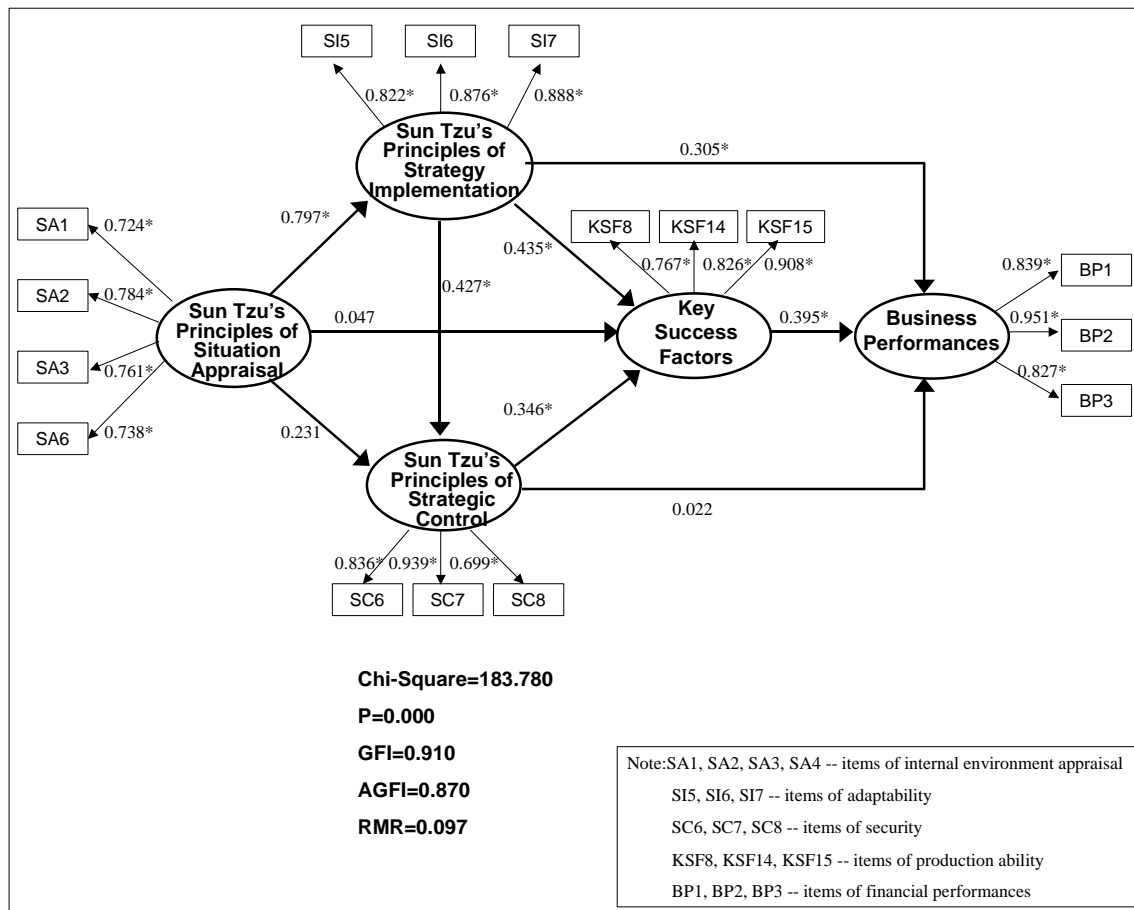


Figure 4-3 The Results of Structure Equation Model

In strategic control, firms most emphasize on actively protect secrets (item SC7,  $\beta=0.939$ ). The other influence items of strategic control are keeping the strategic plans in security (item SC6,  $\beta=0.836$ ) and punishing employees who disclose corporate secrets (item SC8,  $\beta=0.699$ ).

In key success factors, firms most stress on quality control (item KSF15,  $\beta=0.908$ ). The other influence items of key success factors are technical skills of manufacturing workforce (item KSF14,  $\beta=0.825$ ) and process research (item KSF8,  $\beta=0.767$ ). Therefore, the quality of product or service is such a important that will lead firms to succeed.

In business performances, firms perform greatly on growth rate of profit (item BP2,

=0.951). The other items of business performances are growth rate of sales (item BP1, =0.951) and rate of return on investment (item BP3, =0.827).

The results of the structure equation model indicate that the adoptions of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control are significantly relevant to a firm's acquiring its key success factors and to its financial and non-financial performances. The indices of GFI, AGFI, and RMR of the model also indicate that the hypothetical research model fit well to the data and consequently to the real settings of the company practices.





# Chapter

## Discussion, Limitations, and Future Research directions

This chapter presents the implications of the research findings of this study. Limitations of the study and recommendations for business managers and future research are also included.

### 5.1 Discussion

The major objective of this study is to test the relationships between the principles of Sun Tzu' The Art of war, key success factors, and business performances. Empirical test were implemented to verify whether Sun Tzu's principles of war could be adopted to real business practices, including situation appraisal, strategy implementation, and strategic control.

#### 5.1.1 Test of Research Hypotheses

According the results of empirical studies discussed in chapter four, the results of the test of research hypotheses are showed in Table 5-1.

Table 5-1 The Results of the Test of Research Hypotheses

Research hypotheses	Result
H1: The degree of the adoption of Sun Tzu's principles of situation appraisal will directly impact on a firm's adoption of Szu's principles of strategy implementation and strategic control.	Proven perfectly
H1a: The degree of the adoption of Sun Tzu's principles of situation appraisal will directly impact on a firm's adoption of Sun Tzu's principles of strategy implementation.	Proven perfectly
H1b: The degree of the adoption of Sun Tzu's principles of situation appraisal will directly impact on a firm's adoption of Sun Tzu's principles of strategic control.	Proven perfectly

Table 5-1 (Continued)

Research hypotheses	Result
H2: The degree of the adoption of Sun Tzu's principles of strategy implementation will directly impact on a firm's adoption of Sun Tzu's principles of strategic control.	Proven perfectly
H3: The degree of the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control will directly impact on a firm's obtaining its key success factors.	Proven perfectly
H3a: The degree of the adoption of Sun Tzu's principles of situation appraisal will directly impact on a firm's obtaining its key success factors.	Proven perfectly
H3b: The degree of the adoption of Sun Tzu's principles of strategy implementation will directly impact on a firm's obtaining its key success factors.	Proven perfectly
H3c: The degree of the adoption of Sun Tzu's principles of strategic control will directly impact on a firm's obtaining its key success factors.	Proven perfectly
H4: The degree of adoption of Sun Tzu's principles of strategy implementation and strategic control will directly impact on a firm's obtaining its business performances.	Proven partly
H4a: The degree of adoption of Sun Tzu's principles of strategy implementation will directly impact on a firm's business performances.	Proven partly
H4b: The degree of adoption of Sun Tzu's principles of strategic control will directly impact on a firm's business performances.	Proven partly
H5: Key success factors will directly impact on a firm's business performances.	Proven partly
H6: There will be significant difference within the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors, and business performances among different firms and different industries.	Proven partly
H6a: There will be significant difference within the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors, and business performances among different firms.	Proven partly
H6b: There will be significant difference within the adoption of Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors, and business performances among different industries.	Proven partly

### 5.1.2 Discussion of Major Findings

This study focused on the empirical evaluations of Sun Tzu's principles of war used in strategy management, key success factors, and business performances and identified the interrelationships of the above constructs. Results of this study are as follows.

- (1) Interrelationships between Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control (H1~H2)

It is indicated that there are significant interrelationships between Sun Tzu's principles of situation appraisal and strategy implementation. Fennelly (1998) has addressed that through the strategic management, all firms scan the environment, develop and implement strategies to react to this environment, and seek strategic control system (performance-related information) to feed back to the process of formulation and implementation of strategy. Rowe (1994) also addressed that strategic control is an ongoing process used to adopt implementation in response to changes in the internal or external environment. Therefore, It can be shown that the interrelationships between situation appraisal, strategy implementation, and strategic control are positive and significant.

If firms scan the internal and external environments well, they will more emphasize on swiftness, adaptability, and deceptiveness in strategy implementation. Sun Tzu advocated that one should consider the internal and external environment factors before waging of war. These factors are moral influence, generalship, climate, terrain, doctrine, strengths, training, and discipline. These factors are relevant to the SWOT analysis. After assessing the internal and external factors, one will determine to attack or defend. If one determines to attack their competitors, he/she must take the swift actions, keeping flexible, and take deceptive activities to confuse the competitors. We can understand the meanings of strategy implementation from Sun Tzu's well known sayings:

In war prize the quick victory, not the protracted engagement.

For gaining strategic advantage in battle, there are no more than "surprise" and "straightforward" operation. They produce inexhaustible possibility.

At first be like a modest maiden, and the enemy will open his door; when ready, seem unready; when nearby, seem far away; and the enemy will be too late to resist you."

The results of this study also shows that there are significant interrelations between Sun Tzu's principles of situation appraisal and strategic control, including intelligence and security. Sun Tzu advocated that one should check the internal and external environment factors before setting up the fight. It means that one must know the information of oneself, the competitor, and the environment. After confirming who to fight with and where to fight, one will size the information by any ways and keep others from knowing our organization activities. As Sun Tzu said:

Unless you know the intentions of the rulers of the neighboring states, you cannot enter into preparatory alliances with them; unless you know the lay of the land (hsing) - its mountains and forests, its passes and natural hazards, its wetlands and swamps - you cannot deploy the army on it; unless you can employ local scouts, you cannot turn the terrain to your advantage.

Between Sun Tzu's principles of strategy implementation and strategic control, the interrelationships are also significant. It has mentioned that one should be swift, adaptable, and deceptive in strategy implementation. But one should get enough and great information to make him be flexible in his actions in competition. Hence, one should not only seize the information from any way, but also keep the secrets from being disclosed. Sun Tzu said that one can get the information by espionage. In today's business operation practices, it may be considered as unethical and illegitimate. Even if there are such espionage activities, they must be kept secretive. But it goes without saying that keep secret is very important. As Sun Tzu said, "where a matter or espionage has been divulged prematurely, both the spy and all those he told should be put to death."

(2) Relationships between Sun Tzu's principles of situation appraisal, strategy implementation and strategic control, and key success factors (H3)

According to results of the canonical analysis, it indicates that Sun Tzu's principles of situation appraisal, strategy implementation and strategic control have significant influences on key success factors. As mentioned in previous researches (Wing and Perry, 2001), the ability to scan the environments will produce the KSFs to make the firms succeed. Some other scholars also addressed that strategy implementation and strategic control will lead to the KSFs (Grundy, 1996; Pavetti et al., 2001; Rousseau and Rousseau, 1999/2000; Bamber et al., 1999; Farrell and DeRose, 2000). These statements conclude similar results as compared to the results in this study.

These results show that if firm stress on scanning internal and external environment, keeping swift, adaptable, and deceptive in strategy implementation, doing strategic control with security and intelligence, they will get the key success factors, such as production, marketing, and delivery ability. The results are clear in Sun Tzu's *The Art of War*. He advocated that one will know which key success factors to focus on by situation appraisal:

He who knows the enemy and himself will never in a hundred battles be at risk; He who does not know the enemy but knows himself will sometimes win and sometimes lose; He who knows neither the enemy nor himself will be at risk in every battle.

In strategy implementation, the swiftness, adaptability, and deceptiveness will lead the firms to succeed. In Sun Tzu's words:

Therefore, in warfare rely on deceptive maneuvers to establish your ground, calculate advantages in deciding your movements, and divide up and consolidate your forces to make your strategic changes.

Thus, advancing at a pace, such an army is like the wind; slow and majestic, it is like a forest; invading and plundering, it is like fire; sedentary, it is like a mountain; unpredictable, it is like a shadow; moving, it is like lightning and thunder.

As to strategic control, it also has a significant impact on key success factors.

It is important to get the information or security of competitors to know others' relative strengths, therefore we can imitate or learn from them. It is also necessary to keep others from knowing our key success factors and so that we can keep the core competence for a longer period.

(3) Relationships between Sun Tzu's principles of strategy implementation and strategic control, key success factors and business performances (H4~H5)

As shown in previous literatures, Kanplan and Norton (1992) addressed that strategy implementation will advance firms to achieve higher business performances. Kim and Campbell (1995) proposed that strategic control will impact on business performances. Vasconcellos and Hambrick (1989) advocated that firms perform better than their competitors on key success factors will outperform the competition. These statements concluded the similar results with the results in this study.

The results of the regression models indicate that Sun Tzu's principles of strategy implementation have a significant impact on business performances. Among strategy implementation, deceptiveness has a significant influence on non-financial performances and swiftness has positive impacts on financial and non-financial performances. In strategic control, security has positive significant impacts on business performances. In key success factors, production and marketing ability has positive influences business performances. Therefore, in competing with others, if firms focus on taking actions swiftly, being flexible to response to the change, keeping secrets from being divulged, and being outstanding on production and marketing ability, they will succeed and perform higher.

(4) Differences within Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors and business

performances among different firms and different industries (H6)

According to the results of multivariate analysis of variance (MANOVA), there are significant differences among different firms and industries on Sun Tzu's principles of situation appraisal, strategy implementation, and strategic control, key success factors, and business performances.

This study takes four firms, Cample, TSMC, Formosa Plastics, and China Steel, as the samples to test the research hypotheses. It indicates that there are significant differences in Sun Tzu's principles of strategy implementation, strategic control, key success factors, and business performances among these four firms. The differences in situation appraisal are not significant. It could be inferred that nowadays the competition between firms is so intense that the situation appraisal is an essential part of organization operation among firms. It shows that TSMC adopts higher degree of Sun Tzu's principles of strategy implementation, strategic control, than other three firms. TSMC also performs best in every key success factors, except for delivery ability, and business performances. There is one thing needs to be emphasized that Formosa Plastics and China Steel, considered belonging to the traditional industry, perform badly in most part of the variables.

Based on this conclusion, this study further suggested that, due to the degree and form of competition may be different, the adoption of Sun Tzu's principles in strategy management, key success factors, and business performances will be different among firms in different industries. After testing the hypothesis H6b, it has show that here are significant differences in Sun Tzu's principles of strategy implementation, strategic control, key success factors, and business performances among firms in three different industries (tradition manufacturing, high-tech manufacturing, and service industries). The results seem to indicate that since the

manufacturing industries has higher level of adoptions on Sun Tzu's principles of situational appraisal, strategy implementation, and strategic control, their firms tend to perform better on key success factors and business performances than those of the service.



## 5.2 Managerial Implications

In this section, this study will make some suggestions for business managers and these could be helpful to them to conduct the business operations.

The above results could imply some managerial implication. Business managers are facing the dynamic environment nowadays, and encountering more and more difficulties in decision-making. How to compete in such a rough situation is become more and more important. This research found out some useful principles from Sun Tzu's *The Art of War* and these principles are helpful to managers in managing the business operations.

According to the results of this study, we could know that if managements want to do the situation appraisal, they could focus on the internal and external appraisal. It means that managers must compare the following factors with others: (1) the leader, (2) the managers, (3) corporate policy, (4) relative strengths, (5) education and training, (6) rewards and punishments system, (7) business climate, and (8) the geographic location. If managers carefully examine these criteria, they will know which competitive competence they have and how to improve the shortcoming to make themselves more competitive than others.

In these actions of strategy implementation, managers must take swift actions to make competitors have no time to prepare and defend. Meanwhile, managers must pay more attention on the reactions of employees. If employees are resistant to the rapid changes, the goal and the performances may not be completed. Also, if the firm runs too fast, the ability of grasping market conditions information could be weakened. Everyone knows that the competitive environment changes so rapidly, therefore, managers must make some alternative strategies to adapt to the changes. Only the firms getting well with the changes can survival and perform well. Also managers have to be more deceptive, and conceal their real intention, therefore, they can defeat competitors in the surprise way.

As Sun Tzu said that “know others and know yourself,” managers must seek any way to know the information of others and keep others from knowing our secrets. It is really hard for us to do what is said above. Therefore, managers have to follow the Sun Tzu’s principles of strategic control to make it work. In order to get other’s information, managers do not need to use spies or other immoral way, because these ways are not accepted by most people. But they must care about the essence of these principles. Managers can acquire information through the suppliers, the customers, the government, and so on. Also they can get more information of main competitors by hiring their high level managers. What managers must care about is to know much about their competitors. Not only managers have to seek ways to get the information of others, but also they have to keep their information from being known by others. If competitors know your strategies or secrets first, they will know how to fight back. Hence, managers must take actions to keep their strategies in secret and punish employees who disclose their firm’s secret.

To use Sun Tzu’s principles of war in business management will help firms get essential key success factors and get better business performances. Therefore, it is clear that every manager should study this classic, and he will know how to “win a hundred victories in a hundred battles”, or even “to subdue the enemy’s army with out fighting at all.”

### 5.3 Limitations

Although the research results are interesting, several limitations exist in this study. These limitations suggest areas and directions for future research. The translated meanings of principles of the Sun Tzu's *The Art of War*, the collection of research data, and the analysis methods all serve to temper the results of this study.

First, Sun Tzu's *The Art of War* was written in classic Chinese and it is hardly possible to translate the Sun Tzu's principles in vernacular perfectly. Therefore, some of the meanings may be misinterpreted or missed. Due to the constraints of time and versions of *The Art of War* availability, this study adopts the translation version from Ames (1993), the exactly correct translated meaning may need further validation.

Second, This study collected the research data through mailed questionnaires. It takes time and efforts to get the answers of the respondents. In the mean while, there are so many mailed questionnaires sent to large firms that the pleasure to respond the questionnaires is low. Therefore, the respond rate is low that results difficulty in testing the hypotheses.

Third, most of previous studies on Sun Tzu' *The Art of War* tended to adopt qualitative method with very few cases for their unit of analysis. Though the empirical validation in this study have made a breakthrough to the existing literature. However, the results still need to be replicated in a more general setting to establish external validity of the conclusions.

## 5.4 Recommendations for Future Research

### (1) The survey samples

This study took the firms as the survey samples. In the future research, the middle and small enterprises could be taken as the survey samples. Also the same questionnaire or an abbreviated form could be used in the other areas, such as the Mainland China, Japan and Korea where are deeply influenced by Chinese culture.

### (2) The methodology of the study

This study adopted a survey methodology to empirically test the underlying relationships and hypotheses. This “coarse-grained” approach is excellent in capturing statistically significant findings and exploring the “law of the marketplace” (Harrigan, 1983). However, it may lose some unexplained variances. Thus, it is recommended that a “fine-grained” methodology, such as intensive case study or in-depth interviews should be employed to find out the most useful principles which Sun Tzu had advocated in business management.

### (3) Other Chinese classics

There are many great Chinese scholars, such as Confucius, Mencius, Lao Tzu, Zhuang Tzu, and so on. They also develop many great thoughts. These thoughts would be very useful in business operations. Therefore, the future research can take these thoughts as the research variables and compare these mental philosophies in the real world business settings.

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## **Appendex**

# **SURVERY QUESTIONNAIRE FOR THIS STUDY**



## **Questionnaire of the Application of Sun Tzu's Principles of War to Strategy Formulation and Implementation**

Dear Sirs:

This academic questionnaire is to investigate how the Sun Tzu's principles of war to strategic management be applied by the firms in Taiwan. We hope to better understand that if the Sun Tzu's principles of war can be used in today's situation when managers do the situation appraisal, strategy implementation and strategic control, and how the firms perform on the key success factors and business performances. It is sincerely invited that you spend a few minutes to complete the questionnaire and return to us at your earliest convenience. No personal or corporate information will be made public. Please be assured that your answers will kept in strict confidence and take the time to fill out this questionnaire as accurately as possible. Your help is crucial to this research. We deeply appreciate your cooperation.

Thank you

Yours faithfully

**Chih-Hsiung Chou**  
**Student**  
**Institute of Business Administration**  
**National Cheng-Kung University**

**Wann-Yih Wu**  
**Professor**  
**Institute of Business Administration**  
**National Cheng-Kung University**

## Part . Principles for Situation Appraisal

In order to compete in the business world, we must acquire all the information then plot the most suitable strategy. As Sun Tzu said “know the other, know yourself, and the victory will not be at risk; Know the ground, know the natural conditions, and the victory can be total”. Therefore, we would ask you to consider what principles you adopt usually in the situation appraisal.

<ul style="list-style-type: none"> <li>● Please consider the level of adoption of the following principles in situation appraisal in your firm.</li> <li>● Please check the appropriate boxes.</li> </ul>								
Principles	Level of Adoption							Extracted from the Sun Tzu's Art of War (for your reference when you answer the questions)
	Nearly none						Nearly always	
	1	2	3	4	5	6	7	
1. The leader is wise and capable, and able to gain the more support of his subordinates so much so that they will be willing to accompany him through the thick and thin of battles. 領導者運用智慧與能力，使部屬與他的意願一致，並在作戰時同生共死。								(1)計篇：道者，令民與上同意也，故可與之死，可與之生，民弗詭也。 The way (tao) is what brings the thinking of the people in line with their superiors. Hence, you can send them to their deaths or let them live, and they will have no misgivings one way or the other.
2. The managers have the characteristics of wisdom, integrity, humanity, courage and discipline. 公司選定具有智、信、仁、勇、嚴特質的管理人員。								(1)計篇：將者，智、信、仁、勇、嚴也。 Command is a matter of wisdom, integrity, humanity, courage, and discipline. (2)謀攻篇：將能而君不御者勝。 The side on which the commander is able and the ruler does not interfere will take the victory.
3. The main points of management are effective policies, programs, operating procedures, channels of communication, lines of authority, and responsibility. 管理的要領在於制定有效的政策、方案、操作程序、溝通管道、職責與職權。								(1)計篇：法者，曲制、官道、主用也。 Regulation entails organizational effectiveness, a chain of command, and a structure for logistical support. (2)軍爭篇：無邀正正之旗，勿擊堂堂之陳。 Do not intercept an enemy that is perfectly uniform in its array of banners; do not launch the attack on an enemy that is full and disciplined in its formations. (3)勢篇：凡治眾如治寡，分數是也。 It is organization that makes managing many soldiers the same as managing a few.
4. The company has its relative strengths in terms of resources, such as manpower, management, money, machines, materials, methods of production (including technology), and markets served. These variables from the company's competitive edges are advantages to being big and strong. 公司在人力資源、管理、資金、機器設備、生產方法及服務等方面之競爭優勢是公司茁壯的競爭優勢來源。								(1)謀攻篇：十則圍之，五則攻之，倍則分之，敵則能戰之，少則能避之，不若則能避之。 When ten times the enemy strength, surround him; when five times, attack him; when double, engage him; when you and the enemy are equally matched, be able to divide him; when you are no match for the enemy, be able to avoid him.
5. With well-trained personnel, the firm engages in more activities with greater confidence. 有了訓練優良的員工，公司有充足的信心來進行各項競爭活動。								(1)行軍篇：兵非多益，惟無武進。 In war it is not numbers that give the advantage. If you do not advance recklessly. (2)勢篇：故能擇人而任勢也。 He is thus able to select the right men and exploit the strategic advantage (shih).
6. The company has a more effective disciplinary procedure and reward and punishment system, therefore it is more geared towards higher performances and in a stronger position to compete. 公司有賞罰分明的獎懲制度，績效表現會較好，競爭力也較高。								(1)行軍篇：數賞者，窘也；數罰者，困也。 Meting out too many rewards means the enemy is in trouble, and meting out too many punishments means he is in dire straits. (2)行軍篇：卒未親附而罰之，則不服，不服則難用也，卒已親附而罰不行，則不可用也。 If you punish troops who are not yet devoted to you, they will not obey, and if they do not obey, they are difficult to use. But once you have their devotion, if discipline is not enforced, you cannot use them either.
7. The firm takes into account the various changes in the business and economic environment just outlined and adapt its strategies accordingly. 公司考量外在的經營環境後，便採取適當的反應策略。								(1)計篇：天者，陰陽、寒暑、時制也。 Climate is light and shadow, heat and cold, and the rotation of the seasons.
8. Where the firm is located and positioned in the marketplace is one important fact when the firm considerate its competitive competence. 公司在評估其競爭能力時，將相對地理位置因素列入考量。								(2)計篇：地者，高下、遠近、險易、廣狹、死生也。 Terrain refers to the fall of the land, proximate distances, difficulty of passage, the degree of openness, and the viability of the land for deploying troops.

## Part . Principles for Strategy Implement

Sun Tzu would prefer that open combat be avoided and only used as a measure of last resort. If combat is unavoidable, it is important to ensure one's invulnerability. According to Sun Tzu "The victorious army only enters battle after having first won the victory, while the defeated army only seeks victory after having first entered the fray." Invulnerability to defeat can be attained through careful and detailed prior combat preparations and planning and by the strategy implementation state. Therefore, we would ask you to consider what principles you adopt usually in the strategy implement.

<ul style="list-style-type: none"> <li>Please consider the level of adoption of the following principles in strategy implementation in your firm.</li> <li>Please check the appropriate boxes.</li> </ul>			
Principles	Level of Adoption		Extracted from the Sun Tzu's Art of War (for your reference when you answer the questions)
	Nearly none	Nearly always	
	1	2 3 4 5 6 7	
1. Attacking at the most appropriate and suitable moment. 選定適當的時機才進行攻擊。			(1)形篇：驚鳥之擊，至於毀折者，節也。 That a bird of prey when it strikes can smash its victim to pieces is due to its timing.
2. Attacking in the correct timing to make our force to exploit the advantages of the situation. 選定正確的時機使我方在攻擊時產生相對的優勢。			(1)虛實篇：凡先處戰地而待敵者佚，後處戰地而趨戰者勞。 Generally he who first occupies the field of battle to await the enemy will be rested; he who comes later and hastens into battle will be weary.
3. Achieving synergy of actions to overwhelm the enemy and to deny the enemy the benefit of time to develop effective defenses and retaliatory measures. 採取互相配合的行動來擊敗對手，讓競爭者來不及防備和反應。			(1)形篇：激水之疾，至於漂石者，勢也。 That the velocity of cascading water can send boulders bobbing about is due to its strategic advantage.
4. Aiming to complete the whole campaign within the shortest time possible. 在最短的時間內打敗競爭對手。			(1)作戰篇：久則鈍兵挫銳，攻城則力屈，久暴師則國用不足。 If battle is protracted, your weapons will be blunted and your troops demoralized. If you lay siege to a walled city, you exhaust your strength. If your armies are kept in the field for a long time, your national reserves will not suffice.
5. Being flexible in our actions with respect to strategic and tactical variations in order to gain maximum advantage of changing circumstances. 保持彈性以便能因應環境的變化而改變競爭的策略或戰術。			(1)虛實篇：夫兵形象水，水之行，避高而趨下；兵之勝，避實而擊虛。 (2)勢篇：戰勢不過奇正，奇正之變，不可勝窮。 The positioning (hsing) of troops can be likened to water: Just as the flow of water avoids high ground and rushes to the lowest point, so on the path to victory avoid the enemy's strong points and strike where he is weak. For gaining strategic advantage (shin) in battle, there are no more than "surprise" and "straightforward" operation. They produce inexhaustible possibility.
6. Constantly searching for new and innovative ways of meeting the challenges offered by the ever-changing circumstance. 不斷地尋求創新的方法以因應不斷變遷的環境。			(1)虛實篇：故其戰勝不復，而應形於無窮。 Thus one's victories in battle cannot be repeated- they take their form (hsing) in response to inexhaustibly changing circumstances. (2)九地篇：易其事，革其謀，使民無識，易其居，迂其途，使民不得慮。 He makes changes in his arrangements and alters his plans, keeping people in the dark. He changes his camp, and takes circuitous routes, keeping people forms anticipating him.
7. Being very responsive to changes in situations, as well as able to take preemptive action. 及時採取行動來因應情勢的改變。			(1)九變篇：君命有所不受。 There are commands from the ruler not to be obeyed. (2)地形篇：故戰道必勝，主日無戰，必戰可也，戰道不勝，主日必戰，無戰可也。 Thus, if the way (tuo) of battle guarantees you victory, it is right for you to insist on fighting even if the ruler has said not to, where the way of battle does not allow victory, it is fight for you to refuse to fight even if the ruler has said you must.
8. Concerning about changes in the environment in the implementation of strategies. 注意環境的變動以成功地執行策略。			(1)火攻篇：時者，天之燄也，日者，月在箕、壁、糞、軫也。 The appropriate season is when the weather is hot and dry; the appropriate days are those when the moon passes through the constellations of the Winnowing Basket, the Wall, the Wings, and the Chariot Platform.
9. Anticipating the reaction of competitors so that men and resources can be accurately deployed for the decisive win. 預期競爭者的反應以利我方人力及資源的佈置。			(1)虛實篇：能因敵變化而取勝者，謂之神。 To be able to take the victory by varying one's position according to (yin) the enemy's is called being inscrutable (shen).
10. Achieving distinct advantages in combat through the use of baits, which can bring the competitor to where you want to fight. 引誘敵人到我們想要與其競爭的地方，藉此爭取競爭優勢。			(1)勢篇：故善動敵者，形之，敵必從之，予之，敵必取之，以此動之，以本待之。 Thus the expert at getting the enemy to make his move shows himself (hsing), and the enemy is certain to follow. He baits the enemy, and the enemy is certain to take it. In so doing, he moves the enemy, and lies in it for him with his full force.
11. Confusing the competitor about your real intention and lower the defenses of they enemy and indirectly encourage his arrogance. 隱藏我們真正的意圖而使敵人困惑，這樣敵人便會降低防備心。			(1)始計篇：故能而示之不能，用而示之不用，近而示之遠，遠而示之近。 Therefore, when able, seem to be unable; when ready, seem unready; when nearby, seem far away; and when for away, seem near. (2)九地篇：是故始如處女，敵人開戶，後如脫兔，敵不及拒。 At first be like a modest maiden, and the enemy will open his door; after ward be as swift as a scurrying rabbit, and the enemy will be to late to resist you.
12. By surprising competitors, the firm catches the competitor off guard and unprepared. 藉由奇襲使敵人來不及防備，因而戰勝敵人。			(1)軍爭篇：先知迂直之計者勝，此軍爭之法也。 He who first understands the tactic of converting the tortuous and the direct will take the victory. This is the art of armed contest.

## Part . Principles for Strategic Control

When a strategy is developed and implemented, we must also make the outcome under control. Therefore, we must collect, collate and analyze the information in the on hand and prevent the leakage of information in the of the. As Sun Tzu said “Thus the reason the farsighted ruler and his superior commander conquer the enemy at every move, and achieve success for beyond the reach of common crowd, is foreknowledge.” Therefore, we would ask you to consider what principles you adopt usually in the strategic controls.

● Please consider the level of adoption of the following principles in strategic control in your firm.								
● Please check the appropriate boxes.								
Principles	Level of Adoption							Extracted from the Sun Tzu's Art of War (for your reference when you answer the questions)
	Nearly none					Nearly always		
	1	2	3	4	5	6	7	
1. Using the local agents (i.e., local people and local organization) to get information on the characteristics of the local agent' homeland. 利用鄉間(例如：當地的人、機構)來獲得當地的資訊。								(1)用間篇：鄉間者，因其鄉人而用之。 Local spies are the enemy's own countrymen in our employ. (2)九地篇：不用鄉導者，不能得地利。 Unless you can employ local scouts, you cannot turn the terrain to your advantage.
2. Using inside agents (i.e., the employees or important people in enemy's organization) to spy on the state of affairs of inside agents' firm and to sow discord among loyal official, as well as between such officials and the leader. 利用內間(例如：競爭者內部的員工或機要人員)來獲得競爭者內部的資訊和離開競爭者部屬與領導者間之信任度。								(1)用間篇：內間者，因其官人而用之。 Inside agents are enemy officials we employ.
3. Using double agents (i.e., the intelligence agent from enemies) to know the competitor's secrets, to recruit and communicate with the other types of agents, and to assist in the infiltration of the competitor with other spies. 利用反間(例如：競爭者派來的情報人員)來獲得敵方的資訊，並藉以摧絡其他敵方的人員。								(1)用間篇：反間者，因其敵間而用之。 Double agents are enemy spies who report to our side. (2)用間篇：必察敵人之間來間我者，因而利之，導而舍之，故反間可得而用也。 It is necessary to find out who the enemy has sent as agents to spy on us. If we take care of them (yin) with generous bribes, win them over and send them back, they can thus be brought into our employ as double agents. (3)用間篇：五間之事，主必知之，知之必在於反間，故反間不可不厚也。 The ruler must have full knowledge of the covert operations of these five kinds of spies. And since the key to all intelligence is the double agent, this operative must be treated with utmost generosity.
4. Using doomed agents (i.e., our employees who likes to spread news) to spread fabricated information on the company that we leak out to the competitors to mislead them. 利用死間(例如：在本公司內喜歡到處散播消息的人)去競爭者的公司散播虛構的資訊藉以誤導競爭者的行動。								(1)用間篇：死間者，為誑事於外，令君間知之，而傳於敵間也。 Expendable spies are our own agents who obtain fake information we have deliberately leaked to them, and who then pass it on to the enemy spies.
5. Using living agents (i.e., our employees worked in the enemy's firm for a period then come back) to observe the competitor's movement, to understand their strengths and weaknesses, to pilfer their plans and state secrets, and to smuggling relevant information out of the competitor's territory. 利用生間(例如：本公司的員工去競爭者公司工作後再回本公司工作)去查知競爭者所擁有的資源、計劃或秘密。								(1)用間篇：生間者：反報也。 Unexpendable spies are those who return from the enemy camp to report.
6. Knowing that at a strategic level, the strategic plan should be guarded with utmost security. 公司的策略性計劃應保持極機密。								(1)九地篇：能愚士卒之耳目，使之無知。 He is able to blinker the ears and eyes of his officers and men, and to keep people ignorant. (2)九地篇：犯之以事，勿告以言；犯之以害，勿告以利。 Give the troops their charges, but do not reveal your plans; Get them to face the dangers, but do not reveal the advantages.
7. Taking active measure to protect secrets and not to leave them to some third party. 採取主動的防範措施以防止機密外洩。								(1)九地篇：是故政舉之日，夷關折符，無通其使。 For this reason, on the day a declaration of war is made, close off the passes, destroy all instruments of agreement, and forbid any further contact with enemy emissaries.
8. Using strong and punitive deterrents for those who disclose corporate secrets. 嚴厲懲罰洩露公司機密的員工。								(1)用間篇：間事未發，而先聞者，間與所告者皆死。 Where a matter of espionage has been divulged prematurely, both the spy and all those he told should be put to death.
9. Putting its competitors into a move difficult guessing game by being adaptable and flexible in the use of strategies. 利用策略的變化來保持公司的適應性及彈性，並且藉此使競爭者陷入猜疑的情境。								(1)九地篇：易其事，革其謀，使民無識。 He makes changes in his arrangement and alters his plans, keeping people in the dark. (2)九地篇：易其居，迂其途，使民不得慮。 He changes his camp, and takes circuitous routes, keeping people from anticipating him. (3)虛實篇：故形兵之極，至於無形。無形，則深間不能窺，智者不能謀。 The ultimate skill in taking up a strategic position (hsing) is to have no form (hsing). If your position is formless (hsing), the most carefully concealed spies will not be able to get a look at it, and the wisest counselors will not be able to lay plans against it.



**Part . Key Success Factors**

Compared to the industry average, how would you rate your firm's competitive advantages according to the following attributes?	Relatively	Relatively
	worse	better
	1 2 3 4 5 6 7	1 2 3 4 5 6 7
1. Image (goodwill, prestige, and attitude in the minds of the customers)..... 企業形象(商譽、名聲；公司在顧客心中的形象)		
2. Marketing Ability (ability to persuade customers, knowledge of marketing and buyer behavior)..... 行銷能力(說服顧客的能力；行銷及消費者行為的知識)		
3. Advertising and sales promotion..... 廣告與促銷		
4. Product research and development (activities directed towards modifying improving, adding new features to , and developing new products)..... 產品的研究與發展(修改產品、改變外觀及發展新產品的能力)		
5. Service (installation, coaching the customers in using the product, and repairs)..... 服務(指導顧客使用產品能力；公司維修的能力)		
6. A variety of products..... 產品線廣		
7. Low price of products..... 產品價格低		
8. Process research (engineering activities directed toward efficiencies in the way the products are manufactured)..... 製程研究(改善製程使生產更有效率的能力)		
9. Firm size (to exploit economies of scaled)..... 公司規模(產生規模經濟)		
10. Customer financing (financial arrangements offered by the organization to customers in order to increase their purchasing power or facilitate the terms of sale)..... 給予客戶融資的能力(融資給顧客進而提高其購買力的能力)		
11. Flexible ability of production..... 彈性的生產能力		
12. Distribution (transportation, warehousing, and expediting). (ability to maintain low distribution costs and to assure that deliveries are made on the right dates ... .. and in the right quantities) 配送能力(運輸、倉儲、配送；配銷成本降低及送貨準時且數量正確)		
13. Location of manufacturing facilities (efficient proximity to market; to transportation means; or to raw materials and labor)..... 生產設備的位置(接近市場、原料或勞工所在)		
14. Technical skills of manufacturing workforce (technical skills and level of expertise of workforce in the manufacturing plant)..... 工廠員工的技術能力		
15. Quality control (ability to maintain uniformly high level of output quality)..... 品質控管(保持製成品品質的穩定)		
16. Purchasing (ability to obtain access to low-cost or reliable sources of inputs)..... 採購(獲得低成本或可靠的原料)		
17. Labor relations (few stoppages and interruptions in plant production; low level of turnover, lateness and absenteeism)..... 勞工關係(工廠少罷工、少停工；員工流動率、出席率穩定)		
18. Others: _____ 其他(請舉例並簡單說明)： _____		

**Part . Business Performances**

Compared to the main competitor, how would you rate your firm's performances according to the following attributes?	Relatively				Relatively		
	worse				better		
	1	2	3	4	5	6	7
1. Growth of sales..... 銷售成長率							
2. Growth of profit..... 利潤成長率							
3. Return on investment..... 投資報酬率							
4. Productivity..... 生產力							
5. Brand awareness..... 品牌認知度							
6. Employees satisfactory..... 員工滿意度							
7. Customers satisfactory..... 顧客滿意度							
8. The speed of information transmitting within the organization..... 組織內資訊流程度							
9. The ability of grasping market conditions information..... 對商情資訊的掌握能力							
10. The extent of authorization..... 組織授權程度							

**Part . The Characteristics of the Conglomerate**

1. Industry: (Please illustrate main business)	Technological manufacturing		Ordinal manufacturing		Service industry	
2. History: (Years)	10	11-20	21-30	31-40	41-50	51
3. Annual average net sales: (New Taiwan Dollars/hundred million)	50	51-200	201-400	401-600	601-800	801
4. Employees: (People)	500	501-2,000	2,001-4,000	4,001-6,000	6,001-8,000	8,001

**Part . Personal Information**

Now that you have filled the questionnaire, we sincerely appreciate your time and efforts to answer the above questions. Your answer will be treated in strictly confidence. For our information, would you please indicate the following questions:

- 1. Sex:                    Male                    Female
- 2. Marriage:            Single                    Married
- 3. Age:(Year-old)      30                    31-40                    41-50                    51-60                    61
- 4. Education background:    Elementary school    Junior high school    Senior high school    Vocational school    University                    Graduate school
- 5. Position:            Top-level manager    Middle-level supervisor    Low-level director    Others:\_\_\_\_\_

Please check again to verify that you have filled all the items. Please staple the questionnaire and return the questionnaire through mail (the postage is paid). Thank for your time and good luck!