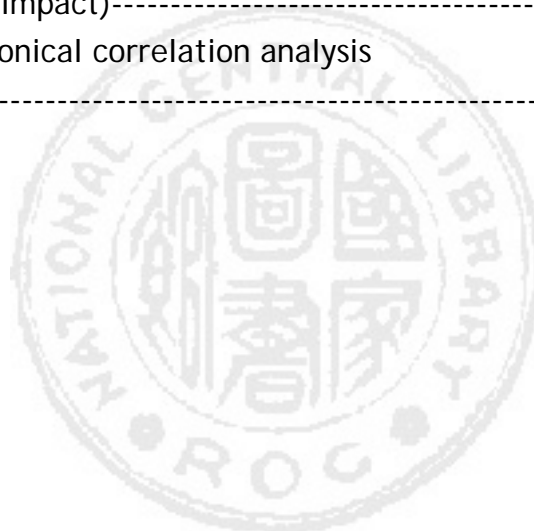


## Charts and Tables

| Charts   | Page |
|--|------|
| 1. Study processes-----  | 4    |
| 2. Study structure and analysis method-----  | 26   |
| 3. Disassembling performances' value-----  | 34   |
| 4. DCs and Revenues canonical correlation analysis-----                                | 35   |
| 5. DCs and Net Profit canonical correlation analysis-----                              | 36   |
| 6. DCs and ROI canonical correlation analysis-----                                     | 37   |
| 7. DCs and Revenues canonical correlation analysis<br>(Financial Crisis impact)-----   | 39   |
| 8. DCs and Revenues canonical correlation analysis<br>(WTO impact)-----                | 39   |
| 9. DCs and Net Profit canonical correlation analysis<br>(Financial Crisis impact)----- | 41   |
| 10. DCs and Net Profit canonical correlation analysis<br>(WTO impact)-----             | 41   |
| 11. DCs and ROI canonical correlation analysis<br>(Financial Crisis impact)-----       | 43   |
| 12. DCs and ROI canonical correlation analysis<br>(WTO impact)-----                    | 43   |



| Tables   | Page |
|--|------|
| 1. The main studies in the area of strategic groups-----                                   | 6    |
| 2. Comparison between strategic groups and<br>dynamic strategic groups-----                | 7    |
| 3. Contrasting conceptions of dynamic capabilities-----                                    | 9    |
| 4. The output value of the packaging machine in Taiwan-----                                | 15   |
| 5. The packaging machine total export value and rate of<br>increase in Taiwan-----         | 16   |
| 6. The top ten countries for importing packaging machine<br>from Taiwan-----               | 16   |
| 7. The packaging machine total import value and rate of<br>increase of Taiwan-----         | 17   |
| 8. The top five countries for exporting packaging machine<br>to Taiwan-----                | 17   |
| 9. Year 2001 ~ 2004 cross-strait trade status-----   | 22   |
| 10. Cronbach's alpha of strategy factors-----  | 24   |
| 11. Cronbach's alpha of dynamic capability factors-----                                    | 25   |
| 12. Acronym of strategies and dynamic capabilities-----                                    | 25   |
| 13. 4 factors each got from 3 periods after factor analysis-----                           | 27   |
| 14. 9 factors got after factor analysis-----   | 27   |
| 15. Final cluster centers for strategy groups-----   | 28   |
| 16. ANOVA for strategy groups-----   | 28   |
| 17. Performances of 8 groups in 3 periods-----   | 29   |
| 18. Classified new groups by Net Profit moving paths-----                                  | 30   |
| 19. ANOVA test between new dynamic strategic groups and<br>Samples' fundamental data ----- | 30   |
| 20. ANOVA test between new dynamic strategic groups and<br>performances -----              | 31   |
| 21. ANOVA test between new dynamic strategic groups and<br>dynamic capabilities-----       | 31   |
| 22. ANOVA test between new dynamic strategic groups and<br>strategies-----                 | 31   |
| 23. ANOVA test between new dynamic strategic groups and strategies<br>in 3 periods-----    | 32   |
| 24. Compare two impacts by Revenues-----   | 40   |
| 25. Compare two impacts by Net Profit-----   | 42   |
| 26. Compare two impacts by ROI-----  | 44   |
| 27. Major difference between two impacts in performances-----                              | 45   |
| 28. Hypotheses supported status-----   | 46   |

# Chapter 1 Preface

## 1.1 Study motive and questions

Enterprises stand and develop in speedy era needs dynamic capabilities to fit. And, "strategic groups" is a good way to understand and estimate the position and direction of enterprises. Researching strategic groups and dynamic capabilities in the degree of successful for business organizations has focused on big or published ones always. How about small and medium-sized enterprises? Do they have the same characters of strategy groups as big enterprises or they have their own unique ways to face the challenges everyday?

Strategic groups were introduced by Hunt (1972) to describe intra-industry structure, a level of analysis between the individual enterprise and the entire industry. Most studies of strategic groups have employed static analysis and assumed that groups are a stable element of market structure. With static analysis, however, research cannot examine if in fact groups are stable over time or investigate fundamental questions about group formation, evolution, and types of change. That's why we should use dynamic strategic groups' analysis, which examines change over time, may prove valuable for the analysis of strategic groups. In this way, we may find the answers for questions as, how about the strategic groups change in serial periods of time? How about enterprises changes in group over time compare with other enterprises or change between groups?

Dynamic capabilities were defined as "the enterprise's ability to integrate, build and reconfigure internal and external competencies to address rapidly changing environments" (Teece/Pisano/Shuen 1997: 516). Such capabilities should have great influences on performances of enterprises, but whether were there any influence on performances made by strategic adoption or strategic groups change from dynamic strategic groups' point of view?

Dynamic capabilities also were defined as "a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operating routines in pursuit of improved effectiveness." In pursit of growth of enterprises, external impacts are unavoidable. How

were the relationships between dynamic capabilities with expected impact and unexpected impact?

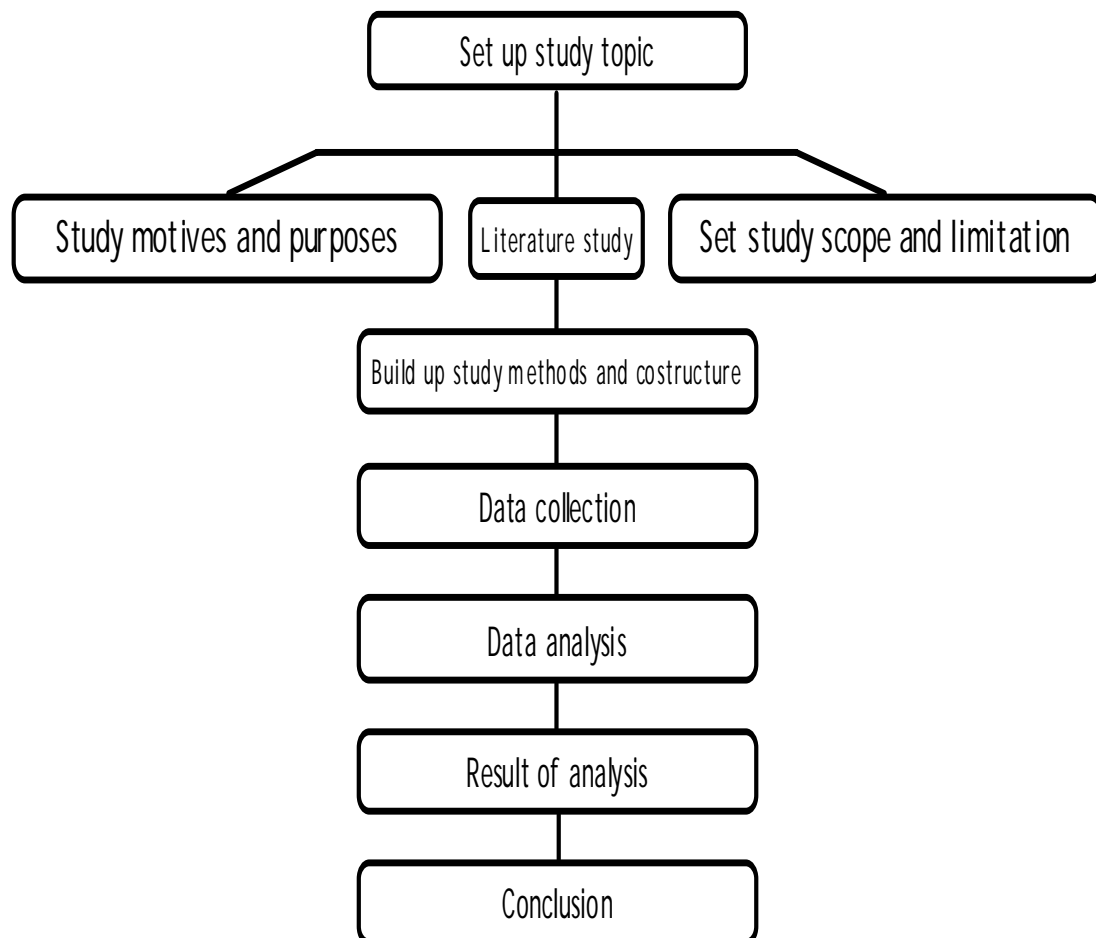
Above all were expressing that if enterprises with same dynamic capabilities and took same strategies, but the performances may will the same or different. We should use dynamic strategic group to analysis.

For answering above questions, we chose packaging industry in Taiwan as our study target.

### 1.2 Study scope

Most of respondents are member of Taiwan Packaging Association. Others all are in the business of packaging.

### 1.3 Study processes (Chart 1)



## Chapter 2 Literatures Review and Hypotheses

### 2.1. Strategic Group

Michael S. Hunt in his doctoral dissertation (1972) used "Strategic Group" to contribute to his explanation of the performance of the "white goods" industry in the 1960s.

Howard H. Newman (1973), in his doctoral dissertation, applied the same principles in a statistical examination of 34 four-digit "producer-goods" industries, all of which were related to "chemical processes".

Michael E. Porter (1973) also analyzed statistically a sample of 38 three-digit "consumer-goods" industries in his doctoral dissertation.

While Hunt focused on strategic difference among competitors in their principal markets and delineated groups according to asymmetry (homogeneity) of operations within the same basic businesses, Newman asserted that strategic groups can also be "defined and identified by the relationship between the industry at hand and the activities carried out by its member firms outside that industry" (Newman, 1978:418).

Porter (1973) proceeded by "using the relative size of a firm in its industry as a proxy for its strategic group membership", dividing firms in each industry into two categories defined as industry leaders and followers.

Caves and Pugel (1980) follow Porter (1973, 1979) in using firm size as an indicator of strategic group membership. They found that small firms were more profitable in some of the industries which they studied.

Kenneth J. Hatten (1974) paid great attention to the methodology for establishing intra-group homogeneity and variance between groups. He believed that it was difficult to decide which firms to group together (because one firm may be homogeneous with one or more other firms) although it could be done in accord with a prior theory using criteria such as size (as Porter did) or types of market served. He solved this problem by using a cluster program to determine the distance between firms. Then he conducted a regression analysis which demonstrated that important differences existed between the pooled estimates (the industry model) and the estimates made on the clusters (the disparate but internally homogeneous groups).

Table 1 The main studies in the area of strategic groups

| Study                                | Industry  | Basis for strategic group formation   |
|--------------------------------------|---|---|
| Hunt (1972)                          | "White goods"   | Product line basis<br>- degree of product diversification<br>- differences in product differentiation<br>- extent of vertical integration   |
| Newman (1973, 1978)                  | 34 four-digit "Producer goods" industries: Chemical Processes   | Degree of vertical integration  |
| Porter (1973)                        | 38 three-digit "Consumer goods" industries  | Relative size of firm: leader / follower  |
| Haten (1974)                         | Brewing industry  | Manufacturing variables: number, age, capital, intensity of plants<br>Marketing variables: number of brands, price and receivables/sales<br>Structural variables: eight-firm concentration ratio, firm size |
| Haten, Schendel and Cooper (1978)    | Brewing industry  | Manufacturing, marketing and financial variables (leverage, merger/acquisition behavior)  |
| Harrigan (1980)                      | Declining industry: Receiving tubes, Synthetic soda ash, Baby foods, Acetylene, Percolator, Cigar, Leather tanners, Rayon | Dimensions of firms' strategic posture; strategic mapping used to identify groups   |
| Caves and Pugel (1980)               | Relative size of firm   | Manufacturing industry sample   |
| Oster (1982)                         | 19 consumer goods industries from Compustat   | Product strategy-advertising/sale ratio   |
| Ramsler (1982)                       | Banking industry: 100 largest non-U.S. banks  | Product market differentiation, size, geographic scope  |
| Ryans and Wittink (1985)             | Airline industry  | Financial strategy clustering of residuals  |
| Baird and Leverage, Sudharsan (1983) | Computing/Electronic  | current ratio, return on assets, dividend payment ratio, times interest earned, size  |
| Primeaux (1985)                      | Textiles, Petroleum   | Size, Investment behavior   |
| Howell and Frazier                   | Medical supply and equipment  | Customer groups served; Customer needs served (due to Abell, 1980)  |
| Hayes, Spence and Marks (1983)       | Investment banking  | Logit analysis involving match between characteristics of individual customers; four main groupings identified  |
| Dess and Davis (1984)                | Paints and allied products  | A range of 21 marketing variables   |
| Crittenden (1984)                    |   | Target market, Product, Promotion, Price, Buying, Display   |
| Lahit (1983)                         | Finish knitwear industry 1969-1981  | Size: small, medium, large; Nature of the product group   |
| Hatten and Hatten (1985)             | Brewing   | Marketing strategy variables: Price, Advertising, Number of brands, National relative market share  |

Source: John McGee; Howard Thomas; "Strategic Groups: Theory, Research and Taxonomy"; Strategic Management Journal (1986-1998); Mar/Apr 1986

## 2.2. Dynamic Strategic Group

Most studies of strategic groups have employed static analysis and implicitly assumed that groups are a stable element of market structure. With static analysis, however, research cannot examine if in fact groups are stable over time or investigate fundamental questions about group formation, evolution, and types of change.

Dynamic analysis, which examines change over time, may prove valuable for the analysis of strategic groups. First, a dynamic analysis can verify whether or not an equilibrium exists and can assess the sensitivity of findings to diverse conditions (Tuma & Hannan, 1984). Static approaches, in contrast, implicitly assume that relationships are unchanging and emphasize equilibrium, so they may be misleading when those conditions do not hold. Second, dynamic analysis can provide additional insights through an examination of the events preceding an outcome. It is difficult to develop such an understanding by examining only contemporaneous data. (Mascarehhas, Briance, 1989)

Table 2  
Comparison between strategic groups and dynamic strategic groups

|                                 |                      |  |
|---------------------------------|----------------------|--|
| <b>Strategic Groups</b>         | Contemporaneous data | Emphasize relationships are unchanging and reach equilibrium     |
| <b>Dynamic Strategic Groups</b> | Serial data          | Emphasize relationships are changing and unstable in equilibrium |

### 2.3. Dynamic Capabilities

The term “dynamic” refers to the capacity to renew competences so as to achieve congruence with the changing business environment; certain innovative responses are required when time-to-market and timing are critical, the rate of technological change is rapid, and the nature of future competition and markets difficult to determine.

The term “capabilities” emphasizes the key role of strategic management in appropriately adapting, integrating, and reconfiguring internal and external organizational skills, resources, and functional competences to match the requirements of a changing environment. (David J. Teece, Gary Pisano and Amy Shuen, 1997)

Dynamic capabilities are the antecedent organizational and strategic routines by which managers alter their resource base-acquire and shed resources, integrate them together, and recombine them-to generate new value - creating strategies (Grant, 1996; Pisano, 1994). As such, they are the drivers behind the creation, evolution, and recombination of other resources into new sources of competitive advantage (Henderson and Cockburn, 1994; Teece et al., 1997). Similar to Teece and colleagues (1997), thus dynamic capabilities can be defined as:

The firm’s processes that use resources-specifically the processes to integrate, reconfigure, gain and release resources-to match and even create market change. Dynamic capabilities thus are the organizational and strategic routines by which firms achieve new resource configurations as markets emerge, collide, split, evolve, and die.

This definition of dynamic capabilities is similar to the definitions given by other authors. For example, Kogut and Zander (1992) use the term “combinative capabilities” to describe organizational processes by which firms synthesize and acquire knowledge resources, and generate new applications from those resources. Henderson and Cockburn (1994) similarly use the term “architectural competence” while Amit and Schoemaker (1993) use “capabilities”.

In general, A dynamic capability is a learned and stable pattern of collective activity through which the organization systematically generates and modifies its operation routines in pursuit of improved effectiveness.(Zollo & Winter, 2002)



Table 3  
 Contrasting conceptions of dynamic capabilities

|                       | Traditional view of dynamic capabilities                       | Reconceptualization of dynamic capabilities   |
|-----------------------|--|---|
| Definition            | Routines to learn routines                                     | Specific organizational and strategic processes (e.g. product innovation, strategic decision making, alliancing) by which managers alter their resource base. |
| Heterogeneity         | Idiosyncratic (i.e., firm specific)                            | Commonalities (i.e., best practice) with some idiosyncratic details.  |
| Pattern               | Detailed, analytic routines                                    | Depending on market dynamism, ranging from detailed, analytic routines to simple, experiential ones.  |
| Outcome               | Predictable  | Depending on market dynamism, predictable or unpredictable.   |
| Competitive Advantage | Sustained competitive advantage from VRIN dynamic capabilities | Competitive advantage from valuable, somewhat rare, equifinal, substitutable, and fungible capabilities   |
| Evolution             | Unique path  | Unique path shaped by learning mechanisms such as practice, codification, mistakes, and pacing.   |

Source: Kathleen M Eisenhardt; Jeffery A Martin; "Dynamic capabilities: What are they?"; Strategic Management Journal; Oct/Nov 2000

Dynamic capabilities can be defined as the firms' ability to integrate, build, and reconfigure internal and external competences to address rapidly changing environments. Dynamic capabilities thus reflect an organization's ability to achieve new and innovative forms of competitive advantage given path dependencies and market positions (Leonard-Barton, 1992)

There are many dimensions of the business firm that must be understood if one is to grasp firm-level distinctive competences/capabilities. In this paper we merely identify several classes of factors that will help determine a firm's distinctive competence and dynamic capabilities. The essence of competences and capabilities is embedded in organizational processes of one kind or another. But the content of these processes and the opportunities they afford for developing competitive advantage at any point in time are shaped significantly by the assets the firm possesses (internal and market) and by the evolutionary path it has adopted/inherited. Hence organizational processes shaped by the firm's asset positions and molded by its evolutionary

and co-evolutionary paths, explain the essence of the firm's dynamic capabilities and its competitive advantage.

By managerial and organizational processes, we refer to the way things are done in the firm, or what might be referred to as its routines, or patterns of current practice and learning. By position we refer to its current specific endowments of technology, intellectual property, complementary assets, customer base, and its external relations with suppliers and complementors. By paths we refer to the strategic alternatives available to the firm, and the presence or absence of increasing returns and attendant path dependencies. (David J. Teece, Gary Pisano and Amy Shuen, 1997)

We organize dynamic capabilities of enterprises in three categories: processes, positions and paths. From there, we try to find out the relation with performances.

## 2.4 Hypotheses

Based on those theories and findings, our first hypothesis, H1, is as follows:

*H1: Strategic groups exist in Taiwan packaging industry and change in membership and group number over time*

*H1-1: Strategic groups exist in Taiwan packaging industry*

*H1-2: Strategic groups change in membership and group number over time*

Enterprises who took same strategy to get into the business, the performances should be significant difference when time changed which were caused by different dynamic capabilities or strategies adoption. So our second hypothesis, H2, as follows:

*H2: The difference of performances were caused by different dynamic capabilities and strategies adoption*

*H2-1: The difference of performances were caused by different dynamic capabilities of enterprises*

*H2-2: The difference of performances were caused by different strategies adoption*

The performances of enterprises were affected by impacts. From dynamic capabilities point of view, the influences were made before and after impacts. Our third hypothesis, H3, as follows:

*H3: The performances of enterprises had significant and positive correlation with dynamic capabilities before and after impact, so as groups' performances change.*

*H3-1: The performances of enterprises had significant and positive correlation with dynamic capabilities before impact*

*H3-2: The performances of enterprises had significant and positive correlation with dynamic capabilities after impact*

*H3-3: The groups' performances change had significant and positive correlation with dynamic capabilities*

There are a lot of impacts during business running for enterprises. In this paper we chose external unexpected and expected economic events as impacts to enterprises. Under different types of impact, the performances of enterprises should be affected by dynamic capabilities. Our fourth hypothesis, H4, as follows:

*H4: Under impacts, the performances of enterprises had significant and positive correlation with dynamic capabilities before and after impact, so as groups' performances change.*

*H4-1: Under unexpected impact, the performances of enterprises had significant and positive correlation with dynamic capabilities before impact*

*H4-2: Under unexpected impact, the performances of enterprises had significant and positive correlation with dynamic capabilities after impact*

*H4-3: Under unexpected impact, the groups' performance change had significant and positive relation with dynamic capabilities*

*H4-4: Under expected impact, the performances of enterprises had significant and positive correlation with dynamic capabilities before impact*

*H4-5: Under expected impact, the performances of enterprises had significant and positive correlation with dynamic capabilities after impact*

*H4-6: Under expected impact, the groups' performances change had significant and positive relation with dynamic capabilities*

## Chapter 3 Taiwan Packaging Industry and Economic Events

### 3.1 Packaging industry in Taiwan

#### 3.1.1 Packaging machinery and equipments

Taiwan packaging equipment - Impulse Sealer made its first appearance in the 1970s when plastic bag needed to be sealed. In 1980s when export cartons needed to be strapped, the packaging machinery industry was beginning to take shape in Taiwan.

In the late 1980s, various kinds of packaging equipment were developed including Vertical Form-Fill-Seal Machine for powder or liquid, Horizontal Flow Wrapper, Bagging Machine, Vacuum Packaging Machine, and Cartoning Machine. Packaging equipment continued to be developed in a wide variety in the following years. It may be said that the industry had built up its foundation in the late 1980s and early 1990s. Packaging machinery industry came to be known in South Asia since then.

Supermarkets made their debut in the mid-1990s and spread throughout the nation. Consumer goods including foodstuffs were sold in a "self-service" method in these stores, making it necessary to pre-pack them so that a customer can take them to a cashier by himself. Demand for packaging equipment soared as a result. Since, however, packaging machinery manufacturers hadn't have enough experience to satisfy all the requirements of end users, they positively tied up with Japan and European manufacturers to raise their technical standards.

#### 3.1.2. Packaging Materials

Flexible and rigid films for packaging are most popular materials to be used. Rigid films mostly are monopoly thick film whether made locally or imported from overseas. Flexible films mostly are made locally by printing and laminating. Customers for packaging material request are higher in nowadays, such as gas or sunlight barrier characters. The technical engineering Taiwan can carry without any problem and owing competition, packaging material

suppliers in Taiwan can offer versatile design in small quantity which most of film makers in most countries refuse to accept.

Having such niche, packaging material from Taiwan to overseas is booming since late 1990s.

In our custom classifications, we cannot identify packaging materials from plastic and paper categories. So we summarize packaging machinery data as a brief introduction.

Packaging machine of Taiwan, Asian countries (especially Chinese economic zone ) are always the major targets, more than 60% in amount to compare with other areas over the years, sales target include China's Mainland (Hong Kong ) , Thailand , Indonesia , Malaysia , Philippine , Singapore , Japan , Korea S. ,etc. mainly, among them, highest in proportion in amount is exporting to China Mainland, lies between 20% to 40% every year.

The mode of production is always a main reason for international competitiveness of engineering goods of our country, because package machine manufacturers of our country are mostly small and medium-sized enterprises, in order to save the cost, form parts suppliers clusters in SCM, those who can supply mechanical processing, casting, heat treatment, controller, electrician of component line, etc. and then just assemble in the factory. Though this kind of mode can get the best resource and reduce the production cost, but not capable of working from the design, in addition, because too many small scale manufacturers, price competition worn out all energy, does not have surplus strengthen in quality improvement and product development. How to create and polish own brand, it's just a fairy tale. Till this day, overall image of pack engineering products of Taiwan, still too difficult to keep in step with the advanced country of Japan, America and Europe.

The output value of the package packing machine of Taiwan grew up steadily before 1997, Asian financial crisis took place in the second half of 1997, caused Taiwan package machine output value declined, thereafter recovered gradually, 2001 because economic depression caused package machine output value glided once again, recovered slightly 2002. (see Table 4)

Table 4 The output value of the packaging machine in Taiwan  
 Unit: New Taiwan Dollar of a hundred million

|                     | 1995  | 1996  | 1997  | 1998  | 1999  | 2000  | 2001  | 2002  |
|---------------------|-------|-------|-------|-------|-------|-------|-------|-------|
| <b>Output value</b> | 32.65 | 36.94 | 39.54 | 35.54 | 34.27 | 36.08 | 26.03 | 30.04 |

Source of the materials: Customs' imports and exports monthly magazine (HS84222,84223,84224)

The severe bottleneck which the package machine industry of Taiwan lies in the scope of the enterprise is too small at present, the fund and labor are insufficient, the ability for research and development of products is weak, the new ideas of often only depending on the boss alone or two brothers or the gains of visiting exhibition are the only way that is researched and developed. Not merely the speed that quality improves is slow, the products want to sell in other areas and also lack business personnel, so often seek the helping of the trader, so top ten major producers are traders in the statistical data. The person who engages in minority is unwilling to sell in other areas through the trader, so the boss has to be the sales man to run all over the world to find customers, has no time to improvement products quality, not mention the research and development for the future. It is mostly family enterprise in package machine industry, the apprentice system training runs still. Prices competition is the only sales method, the improvement of quality feels inadequate.

Generally speaking, the advanced national countries such as Japan, U.S.A., Germany and Italy, has no intention to cooperate with Taiwan no matter in the production technology or research and development of the package machine when China waves hands to them. The package machine has its certain technology and knack, so makers must innovate and research and develop and maintain the advantage constantly , if without the issuing of new products, its quality is raised to supreme extent still when the pressure of the price is unable to maintain the advantage , will lose international competitiveness gradually.

### 3.1.3. Export and analysis

From the Table 4 can find out the package packing machine export value in Taiwan in recent years besides once baffling at the time of Asian financial crisis, roughly keeping growing up steadily, the package machine export of Taiwan still regarded by countries of Asia as the main export market of

Taiwan in whole year of 2003, accounting for 64% of overall exporting value, among them the total export value has reached 56,189,000 dollars in only China (including Hong Kong ), account for 34% of 149,343,000 dollars of total export value (HS 84222 , 84223 , 84224 ), it is obvious that the export still concentrates on the single market-Asia excessively.

Export growth country for Philippine 117%, purchasing amount \$6,222,000; India 142% by a wide margin, purchasing amount \$3,544,000; Canada 83%, purchasing amount \$2,909,000; Iran 96%, purchasing amount \$1,692,000.

Table 5 The packaging machine total export value and rate of increase in Taiwan  
Unit: New Taiwan Dollar of a million

|                     | 1996  | 1997  | 1998   | 1999  | 2000  | 2001  | 2002  | 2003  |
|---------------------|-------|-------|--------|-------|-------|-------|-------|-------|
| Total export value  | 3,781 | 3,870 | 2,957  | 3,121 | 3,788 | 4,397 | 4,959 | 5,077 |
| Export growth value | 5.2%  | 2.4%  | -23.6% | 5.6%  | 21.4% | 16.1% | 12.8% | 2.3%  |

Source of the materials: Customs' imports and exports monthly magazine (HS84222,84223,84224)

Table 6 The top ten countries for importing packaging machine from Taiwan

| Rank | 1998        | 1999        | 2000        | 2001      | 2002        | 2003        |
|------|-------------|-------------|-------------|-----------|-------------|-------------|
| 1    | Hong Kong   | Hong Kong   | Hong Kong   | Hong Kong | Hong Kong   | China       |
| 2    | U.S.A.      | U.S.A.      | U.S.A.      | China     | China       | Hong Kong   |
| 3    | Japan       | Japan       | Japan       | U.S.A.    | Japan       | U.S.A.      |
| 4    | Thailand    | Malaysia    | Thailand    | Japan     | Malaysia    | Thailand    |
| 5    | Malaysia    | Philippines | Malaysia    | Thailand  | Britain     | Japan       |
| 6    | Philippines | Thailand    | Korea S.    | Malaysia  | Indonesia   | Philippines |
| 7    | Germany     | Australia   | Indonesia   | Indonesia | Thailand    | Malaysia    |
| 8    | Italy       | Singapore   | China       | Vietnam   | U.S.A.      | Vietnam     |
| 9    | Vietnam     | Indonesia   | Philippines | Singapore | Korea S.    | Indonesia   |
| 10   | Brazil      | Vietnam     | Vietnam     | Korea S.  | Philippines | Bermuda     |

Source of the materials: Customs' imports and exports monthly magazine (HS84222,84223,84224)

### 3.1.4. Import and analysis

In importing, declining sharply of package machine in Taiwan in the past five years (see Table 6). When Asian financial crisis took place in 1997, the total import value of the package machine of Taiwan did not reduce, increasing instead, since 2000, Taiwan has been depressed because of lacking of domestic demand. Except restrictions for IT industries, nearly all traditional industries moved to China. But it recovered gradually from 2003.



Table 7 The packaging machine total import value and rate of increase of Taiwan  
Unit: New Taiwan Dollar of a Million

|                    | 1996   | 1997  | 1998  | 1999  | 2000  | 2001   | 2002   | 2003  |
|--------------------|--------|-------|-------|-------|-------|--------|--------|-------|
| Total import value | 2,969  | 3,079 | 4,039 | 4,415 | 4,351 | 3,711  | 1,982  | 2,236 |
| Import growth rate | -22.4% | 3.7%  | 31.2% | 9.3%  | -1.4% | -14.7% | -46.6% | 12.8% |

Source of the materials: Customs' imports and exports monthly magazine (HS84222,84223,84224)

Table 8 The top five countries for exporting packaging machine to Taiwan  
in recent years

| Rank | 1998    | 1999    | 2000    | 2001    | 2002    | 2003    |
|------|---------|---------|---------|---------|---------|---------|
| 1    | Japan   | Japan   | Japan   | Japan   | Japan   | Japan   |
| 2    | Italy   | Italy   | Germany | Sweden  | Germany | Italy   |
| 3    | Germany | Germany | Italy   | Italy   | Italy   | U.S.A.  |
| 4    | U.S.A.  | U.S.A.  | U.S.A.  | Germany | Sweden  | Germany |
| 5    | Holland | Sweden  | France  | U.S.A.  | U.S.A.  | Sweden  |

Source of the materials: Customs' imports and exports monthly magazine (HS84222,84223,84224)

### 3.1.5. Competition and analysis

1. Advantage (Strength): Packaging machine manufacturers of Taiwan are nearly all small and medium-sized enterprises, because the type of operation of the manufacturer is comparatively flexible, can produce according market's need to fit the economic benefits. The elasticity in producing, make the price relatively have a competition advantage.

2. Weak tendency (Weakness): Manufacturer's scale of the package packing machine of Taiwan is small. Small and medium-sized enterprises are limited to the development-oriented attitude; it is difficult to have no matter in capital collection and technological break-through. The quality of the products is difficult to improve, business talents are deficient and cause sales volume to be unable to expand , the fund is difficult to accumulate , such cause and effect circulation makes the industry develop limitedly, industry's scale is difficult to expand .

3. Threat (Threaten): Because the land usage is limited in Taiwan, land and labor's price go up year by year, the production cost also increases thereupon , so if the packaging machine of Taiwan is unable to improve to

some extent on the quality and technology, will face the threat that gets from developing countries quickly.

4. Chances (Opportunities): The large land areas of Southeast Asia and China are always for exporting the target mainly of packaging machine of Taiwan, as its economy is being developed constantly, this two areas will be greater and greater to the packaging machine demand closely linked with people's livelihood industry, among them the relevant industry of area of Southeast Asia is dealt in by Chinese mostly, so Taiwanese manufacturer can continue protecting competition advantage in those areas.

### 3.2. Economic Events

#### 3.2.1 Asian Financial Crisis - An unexpected impact event

The Asian financial crisis, which spread from Thailand to other countries in the region during the second half of 1997, plunged the countries affected into deep recessions that brought rising unemployment, poverty, and social dislocation.

The Asian financial crisis was not caused by macroeconomic imbalances. The fundamentals of Malaysia, Indonesia, Philippines and Korea were and are sound. These economies have high domestic savings and investment rates, high rates of output growth, strong export performance, low inflation and more egalitarian economic policies than any other region.

Many knowledgeable commentators can be cited who have said that the size and the pace of capital outflows from the fast growing economies of East Asia had nothing to do with fundamentals.

The Director of the World Bank's office in Indonesia went so far to say, as he watched the decline in the value of the currency caused by the rapid pace of capital outflows, that 'This has nothing to do with economics.'

A real estate bubble burst in Thailand. The bubble had been created by huge inflows of external capital. Private capital flows into Thailand between 1988 and 1995 totaled 52% of GDP. The government took all the recommended measures to control the impact of these large inflows on the economy. The

most commonly used measures were designed to reduce the expansion of the domestic money supply through sterilized intervention. However, these measures did not reduce the scale of capital inflows which continued throughout 1996. Investment rates jumped to over 40% of GDP.

As is known to everyone, Southeast Asian countries exercise a fixed exchange rate system connected to US Dollars(\*). What we should understand is that, to adopt a fixed exchange rate, the first thing is to determine an exchange rate level. For instance, 20 years ago, the Thai government fixed the exchange rate of Thai Baht to US Dollars at a level of 24.70 Baht to one Dollar. And this rate got fixed, not allowed to float. Is this rate reasonable? 20 years ago, nobody knew. Now, this rate is not reasonable. It was too high 20 years ago, but it was too low today.

At this time, George Soros became aware of this common desire to increase the exchange rate of Dollars to Baht. He believed, according to the price level in Thailand, that the fixed exchange rate of one Dollar to 24.70 Baht was really too low, and to sell Baht out for buying in Dollars would make the seller of Dollars lose. Therefore, he borrowed a great number of Baht from the banks worldwide. The amount was so huge that I estimate it might be over 100 billion Baht. Then, he changed all these Baht to Dollars according to the fixed exchange rate of 24.70. After all the Baht were sold out, he began to scatter the rumors all over the world that the Baht would devalue, which made the Thai people begin to sell their Baht in big quantities. But whom the Baht were sold to? The foreigners had long since had the wish to increase the exchange rate of US Dollars to Baht. Therefore, they would not sell their Dollars to the Thai people at the fixed exchange rate of one Dollar to 24.70 Thai Baht. The Thai people had to sell their Baht to the Thai Government. The foreign exchange reserve of Thai government was soon run out. Even after the foreign exchange reserve of Thai government was empty, the demands for selling the Baht were not yet satisfied, so as to force the Thai Government to give up the fixed exchange rate. The exchange rate of US Dollars was soon increased to one Dollar for 29.45 Baht. At this time, Mr. Soros changed one portion of his Dollars back to Baht at the new rate of 29.45 and paid back the principal and interest to the banks. When he borrowed the Baht, he changed them to Dollars at the rate of 24.70. After the Thai Government gave up the fixed exchange rate, he changed back one portion of his Dollars at the rate of 29.45. In such a deal, he made a very considerable profit

This financial crisis is just like an active volcano, and the common wishes of the international communities for increasing the exchange rate of US Dollars to Thai Baht are like the lava boiling beneath. Mr. Soros is like the man who stirred the crater of the volcano with an iron bar. It was because Mr. Soros gave the crater a stir that the active volcano sprayed out in advance. Obviously, it was not Mr. Soros, but the lava beneath that caused the burst of the volcano. That is to say, it was the common wish of the international communities to increase the exchange rate of Dollars to Baht that caused the financial crisis. The volcano would have burst sooner or later even if Mr. Soros hadn't stirred the crater.

At the beginning of 1997, none of the macroeconomic indicators of Thailand were worse than at the start of 1996. The share of short term debt to total debt was lower than it was a year ago and the trade deficit was narrowing in the first quarter of 1997.

But beginning in July, there was a run on the currency.

As Mr. Steven Radelet who is an Institute Associate at the Harvard Institute for International Development and a Lecturer in the Department of Economics at Harvard University said, "The Asian Crisis was unexpected. The collapse of the economy in many East Asian countries is particularly unforeseen by anyone."

His conclusion for the crisis reason was "The excessive currency inflow and underdeveloped financial system are two underlying elements attributing to the meltdown of financial system in the region."

This was an unexpected event impacts South Asia economic fiercely; it had huge concern with Taiwan who exported packaging machinery and material to that area as a major market.

### 3.2.2. China got into WTO - An expected impact event

As expected, China has been a member of WTO since 11 December 2001.

As a result of the negotiations, China has agreed to undertake a series of important commitments to open and liberalize its regime in order to better integrate in the world economy and offer a more predictable environment for trade and foreign investment in accordance with WTO rules.

Among some of the commitments undertaken by China are the following:

- China will provide non-discriminatory treatment to all WTO Members. All foreign individuals and enterprises, including those not invested or registered in China, will be accorded treatment no less favorable than that accorded to enterprises in China with respect to the right to trade.
- China will eliminate dual pricing practices as well as differences in treatment accorded to goods produced for sale in China in comparison to those produced for export.
- Price controls will not be used for purposes of affording protection to domestic industries or services providers.
- The WTO Agreement will be implemented by China in an effective and uniform manner by revising its existing domestic laws and enacting new legislation fully in compliance with the WTO Agreement.
- Within three years of accession all enterprises will have the right to import and export all goods and trade them throughout the customs territory with limited exceptions.
- China will not maintain or introduce any export subsidies on agricultural products.

In 2000, China was the 7th leading exporter and 8th largest importer of merchandise trade - exports: 249.2 billion dollars (3.9% share), imports: 225.1 billion dollars (3.4% share). For commercial services China was the 12th leading exporter and the 10th largest importer - exports: 29.7 billion dollars (2.1% share), imports: 34.8 billion dollars (2.5% share). It's a booming market in China.

According to WTO statistics, mainland China's foreign trade surged by nearly 70% from US\$509.77 billion dollars in 2001 to US\$850.96 billion dollars in 2003, with an 18.24% gain in 2002 and a gain of 41.68% in 2003.

WTO membership has also benefited foreign direct investment (FDI) in the mainland, which has displaced the U.S. as the world's biggest recipient of such investment. According to the mainland's Ministry of Foreign Trade, about 10% of China's 250 million urban workers are directly employed by foreign enterprises. Another 80 million of so nationwide are directly employed in the foreign trade sector. The mainland is now the world's third largest trading nation, and it is considered to have the strongest growth

potential among emerging economies.

Trade between the two sides has grown at an unprecedented pace since mainland China joined the international trade. Taiwan has dramatically increased both its market share and investment level on the other side of the strait. And economic and trade relations between the two sides have quickly become unbalanced, posing a serious threat to the future economic stability and development of Taiwan. See Table 8.

According to the Bureau of Trade under the Ministry of Economic Affairs, mainland China absorbed 19.6% of Taiwan's total exports in 2001, and provided 5.5% of its total imports that year. The export ratio rose to 22.6% in 2002, 24.5% in 2003, and 25.8% in 2004, by which time the mainland China's displaced the U.S. as Taiwan's biggest export market. Imports from the mainland have grown at a more measured pace, but they still accounted for 9.9% of Taiwan's total import bill by 2004, making it the third largest supplier of goods to Taiwan.

Table 9 Year 2001 ~ 2004 Cross-Strait Trade Statics

Unit: million dollar

| Year           | Trade Amount | Annual Increase Rate | Percentage to Taiwan Trade Total Amount | Percentage to China Trade Total Amount |
|----------------|--------------|----------------------|---|--|
| 2001 (pre-WTO) | 29,963       | -7.4%                | 13.0%                                   | 6.34%                                  |
| 2002           | 37,413       | 24.9%                | 15.4%                                   | 7.19%                                  |
| 2003           | 46,319       | 23.8%                | 17.1%                                   | 6.86%                                  |
| 2004           | 61,639       | 331.1%               | 18.0%                                   | -                                      |

Source: Bureau of Trade of Ministry of Economic, Straits Business Monthly, No. 160, pp.10

So we take this economic event as an expected impact.

## Chapter 4 Data and method

We conducted a pre-testing survey in order to explore the efficient and effectiveness of questionnaire. The result appeared they were confirmed. So we developed a standardized questionnaire in order to explore critical strategic variables and dynamic capabilities.

### 4.1. Samples

We restricted the questionnaire to firms who are in packaging industry which fit the field we study. All data were collected through a questionnaire sent to the members of Taiwan Packaging Association and the visitors of Interpack 2005 (Apr.21-27, 2005) from Taiwan.

### 4.2. Pre-testing and Data collection

The survey was pre-tested with 10 members of Taiwan Packaging Association in a dinner party. 105 surveys mailed (randomly selected from members of Taiwan Packaging Association), 28 were returned. 110 surveys were made during Interpack in Germany. The effective response number was 78. Totally, the effective usable number was 106 (49.3 percent response rate).

### 4.3. Reliability and Validity

All responders who joined Interpack were key managers, CEOs or Owners of enterprises in Taiwan packaging industry, and all questionnaire were answered in a 45 minutes bus tour, which fit the requests of reliability for questionnaire. The questionnaire had been used by Yu Ya-Wen (2003, National Chiayi University), in her master thesis "The Exploration and Measurement of Dynamic Capabilities of Firms", in which, certified its validity.

#### 4.4. Variables and measures

All scales for Strategies and Dynamic Capabilities were five-point Likert-type, anchored by left-low to right-high.

Strategies were measured by 26-item scale and separated with two impacts (Financial Crisis and WTO) into three periods. Dynamic Capabilities were measured by total 63-item scale and classified into "Process"(39-item), "Position"(18-item) and "Path"(6-item).

As for performance, enterprise compared with other enterprises in five-point Likert-type, and with oneself in scale of 1-low to 3-high among three periods.

##### 4.4.1 Assumed independent variables:

These strategic activities were combined by factor analysis into four independent variables: (1) Differentiation Orientation (DO) (2) Cost Orientation (CO) (3) Market Orientation (MO) (4) Product Orientation (PO). The variables had reliable above the accepted level of alpha coefficient of 0.70. Table 10 Cronbach's alpha of strategy factors

| <b>Factors</b>                  | <b>Cronbach's Alpha</b> |
|---------------------------------|-------------------------|
| <b>Differentiation Oriented</b> | 0.902                   |
| <b>Cost Oriented</b>            | 0.831                   |
| <b>Market Oriented</b>          | 0.855                   |
| <b>Product Oriented</b>         | 0.825                   |

Source: Organized by this study

The perceived competitive advantages in relation to competitors and the perceived ability to master future challenges (dynamic capability) are assumed as independent variables as well. The ability to master major challenges is a dynamic capability due to the turbulent environment the organizations have to deal with.

Different items describing competencies and capabilities were used as key variables. Respondents estimated how far their organization was/is able to deal with the impact of FC and WTO on a scale from left-low to right-high.

We extracted dynamic capabilities variables by factor analysis into nine (9) variables: Internal Integration Capability (ic\_i) , External Integration Capability (ic\_e), Knowledge Management (lc\_km), Just In Time Learning (lc\_jit), Adjusting Capability (ac), Tangible Assets (pa), Intangible Assets (ia), Market Potentiality (mp), Path Dependency (pd). The variables had reliable above the accepted level of alpha coefficient of 0.70.



Table 11 Cronbach's alpha of dynamic capability factors

| Factors                         | Cronbach's Alpha | Factors             | Cronbach's Alpha |
|---------------------------------|------------------|---------------------|------------------|
| Internal Integration Capability | 0.948            | Tangible Assets     | 0.929            |
| External Integration Capability |                  | Intangible Assets   |                  |
| Knowledge Management            | 0.931            | Market Potentiality |                  |
| JIT Learning                    |                  | Path Dependency     | 0.894            |
| Adjusting Capability            | 0.946            |                     |                  |

Source: Organized by this study

Table 12 Acronym of strategies and dynamic capabilities

| Strategies                      | Acronym |
|---------------------------------|---------|
| Differentiation Orientation     | DO      |
| Cost Orientation                | CO      |
| Market Orientation              | MO      |
| Product Orientation             | PO      |
| <b>Dynamic Capabilities</b>     |         |
| Internal Integration Capability | ic_i    |
| External Integration Capability | ic_e    |
| Knowledge Management            | lc_km   |
| JIT Learning                    | lc-jit  |
| Adjusting Capability            | ac      |
| Tangible Assets                 | pa      |
| Intangible Assets               | ia      |
| Market Potentiality             | mp      |
| Path Dependency                 | pd      |

Source: Organized by this study

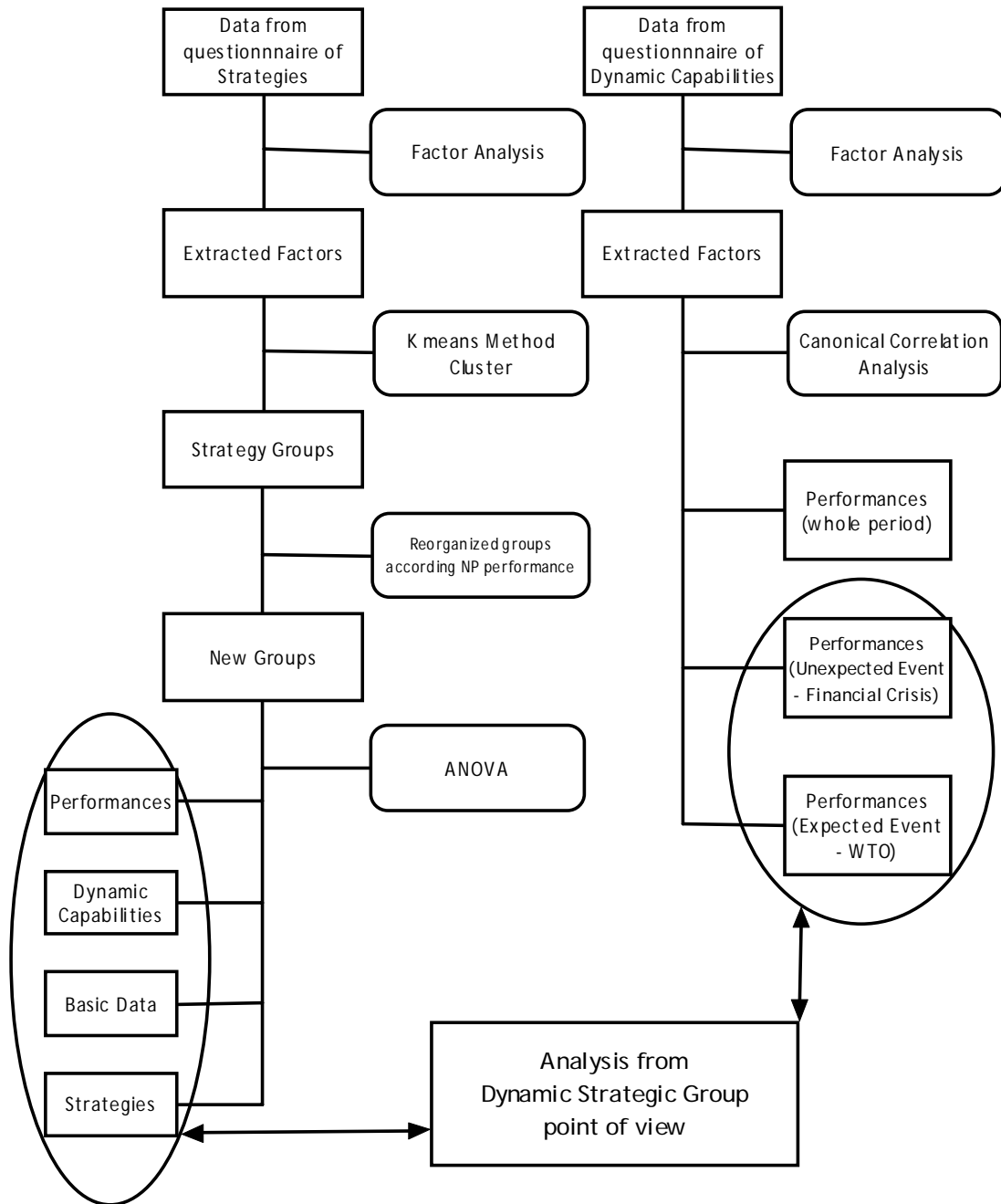
#### 4.4.2. Assumed dependent variables:

Performances were treated as dependent variables. The respondents were asked to compare the performances with of their own firm to their competitors and firms in packaging field. We used a 5-point scale ranging from left-low, right-high. And, respondents were asked to compare performances with themselves among 3 periods with number 1, 2, and 3 (1-low, 3-high).

#### 4.5. Data analysis

The data analysis starts with factor analysis both in strategies and dynamic capabilities. In strategies, we clustered 8 groups by K-Means. After that, we used Net Profit as the factor of performances to classify all samples in five (5) different moving paths. Finally, we explored the relation between dynamic capabilities and performances by canonical correlation analysis.

Chart 2 Study structure and analysis methods



Source: Organized by this study

## 4.6. Results

### 4.6.1. Strategic groups

#### 4.6.1.1. Factor analysis

##### 4.6.1.1.1. Factor analysis - Strategic groups

Table (C-1) gives an overview of Cronbach's Alpha of each factor which was got from factor analysis for 3 periods in strategies. All four factors, we named as Differentiation Orientation, Cost Orientation, Market Orientation and Product Orientation, had reliable above the accepted level of alpha coefficient of 0.70 (Except Product Orientation in Period 2).

Table 13 4 factors each got from 3 periods after factor analysis

| Factors  |       | Differentiation Oriented | Cost Oriented | Market Oriented | Product Oriented |
|----------|-------|--------------------------|---------------|-----------------|------------------|
| Period 1 | Items | 8                        | 7             | 5               | 4                |
|          | Alpha | 0.904                    | 0.879         | 0.823           | 0.785            |
| Period 2 | Items | 11                       | 5             | 4               | 2                |
|          | Alpha | 0.918                    | 0.847         | 0.770           | 0.559            |
| Period 3 | Items | 8                        | 5             | 6               | 4                |
|          | Alpha | 0.913                    | 0.823         | 0.852           | 0.824            |

Source: Organized by this study

##### 4.6.1.1.2. Factor analysis - Dynamic capabilities

Table (C-4) gives an overview of Cronbach's Alpha of each factor which was got from factor analysis of process: Integration (16-item) - Internal Integration, External Integration; Learning (11-item) - Knowledge Management, JIT Learning; Replacement (11-item) - Adjustable Capability; Position (17-item): Tangible Assets, Intangible Assets, Market Potentiality, and Path(6-item): Path Dependent. All factors had reliable above the accepted level of alpha coefficient of 0.89.

Table 14 9 factors got after factor analysis

| Dynamic Capabilities | Extracted Factors  | Alpha |
|----------------------|--|-------|
| Process              | Integration Capability<br>(Internal Integration Capability, External Integration Capability) | 0.948 |
|                      | Learning Capability<br>(Knowledge Mangement, JIT Learning)                                   | 0.931 |
|                      | Adjusting Capability   | 0.947 |
| Position             | Tangibe Assets, Intangible Assets, Market Potentiality                                       | 0.929 |
| Path                 | Path Dependency  | 0.894 |

Source: Organized by this study

#### 4.6.1.2. Cluster

Arbitrarily, we set strategic groups into 8 groups we could get by cluster analysis (K-Means Method) in order to get more detailed information about samples changing in groups.

Table 15 Final cluster centers for strategy groups

|                             | Cluster |         |        |       |         |         |         |        |
|-----------------------------|---------|---------|--------|-------|---------|---------|---------|--------|
|                             | 1       | 2       | 3      | 4     | 5       | 6       | 7       | 8      |
| Differentiation Orientation | .9676   | -1.2587 | -.5706 | .0586 | 3.5069  | 1.2368  | -2.5557 | -.2971 |
| Cost Orientation            | .8131   | -4.0732 | -.7677 | .0475 | -2.2455 | -.8056  | 1.7587  | .1751  |
| Market Orientation          | -.8538  | -1.2221 | -.5987 | .7125 | -.8581  | -3.6423 | -1.3262 | -.3893 |
| Product Orientation         | -.2283  | 2.3991  | -.6702 | .0539 | -2.2940 | 1.4428  | -1.6464 | 1.3612 |

Source: Organized by this study

Table 16 ANOVA of s strategy group

|                             | Cluster     |    | Error       |     | F      | Sig. |
|-----------------------------|-------------|----|-------------|-----|--------|------|
|                             | Mean Square | df | Mean Square | df  |        |      |
| Differentiation Orientation | 16.292      | 7  | .431        | 310 | 37.835 | .000 |
| Cost Orientation            | 15.520      | 7  | .503        | 310 | 30.849 | .000 |
| Market Orientation          | 25.731      | 7  | .311        | 310 | 82.802 | .000 |
| Product Orientation         | 18.563      | 7  | .415        | 310 | 44.714 | .000 |

Source: Organized by this study

All strategic factors have significant difference with clustered 8 groups.

| Hypothesis |   | Supported |
|------------|---|-----------|
| H1-1       | Strategic groups exist in Taiwan packaging industry | <b>V</b>  |

#### 4.6.2. Strategic groups changed in membership and group number

We checked Performances of 8 groups in 3 periods as follows:

Table 17 Performances of 8 groups in 3 periods

| Performances | Revenues     |              |              | ROI          |              |              | Net Profit   |              |              |
|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|--------------|
|              | 1            | 2            | 3            | 1            | 2            | 3            | 1            | 2            | 3            |
| 1            | 2.50<br>(16) | 3.07<br>(15) | 3.59<br>(17) | 3.69<br>(16) | 2.80<br>(15) | 2.53<br>(17) | 3.31<br>(16) | 2.60<br>(15) | 3.65<br>(17) |
| 2            |              |              | 4.00<br>(1)  |              |              | 4.00<br>(1)  |              |              | 3.00<br>(1)  |
| 3            | 2.21<br>(28) | 2.82<br>(22) | 2.44<br>(18) | 3.11<br>(28) | 2.50<br>(22) | 2.33<br>(18) | 3.82<br>(28) | 2.55<br>(22) | 2.50<br>(18) |
| 4            | 2.64<br>(50) | 3.04<br>(51) | 3.13<br>(55) | 3.74<br>(50) | 3.08<br>(51) | 2.42<br>(55) | 3.36<br>(50) | 3.10<br>(51) | 3.44<br>(55) |
| 5            |              |              | 2.00<br>(1)  |              |              | 2.00<br>(1)  |              |              | 3.00<br>(1)  |
| 6            |              | 3.00<br>(1)  | 3.00<br>(1)  |              | 3.00<br>(1)  | 3.00<br>(1)  |              | 1.00<br>(1)  | 4.00<br>(1)  |
| 7            | 5.00<br>(1)  | 1.00<br>(1)  | 2.00<br>(2)  | 1.00<br>(1)  | 1.00<br>(1)  | 1.50<br>(2)  | 3.00<br>(1)  | 1.00<br>(1)  | 2.50<br>(2)  |
| 8            | 3.00<br>(1)  | 3.00<br>(16) | 2.91<br>(11) | 3.46<br>(11) | 3.13<br>(16) | 2.91<br>(11) | 3.00<br>(11) | 3.25<br>(16) | 3.27<br>(11) |

Source: Organized by this study

The outcome showed majority of samples did not affected by events impact in performances, because there was no significant change in the samples

number and value through all periods.

Group 2 and 5 appeared at the third period. Value of group 2 was rather high and group 5 was rather low. It showed that after events impacted, strategic group created and formed a better performance strategic group, so as a worse performance strategic group.

The majority of samples did not affected by events impact in performances by changing strategic group. But new strategic groups were created.






| Hypothesis |  | Supported |
|------------|--|-----------|
| H1-2       | Strategic groups change in membership and group number over time | <b>V</b>  |

#### 4.6.3. Dynamic Strategic Groups - Organizing new groups by Net Profit performance

We intend to reorganize all samples by picking one performance - Net Profit as key outcome and check all relation of samples with it along all periods. In this way, we could conduct a dynamic relation between new groups and Performances, Samples Fundamental Data, Dynamic Capabilities and Strategies.

We compared Net Profit of samples between periods to get 5 types of moving path and we grouped as new groups G1~G5. G1: Net Profit keeps high always; G2: Net Profit keeps low always; G3: Net Profit was from low to high; G4: Net Profit was from high to low; G5: Net Profit was up and down

Table 18 Classified new groups by Net Profit moving paths

| Code  | Paths             | Symbols   | No. of Samples | Percentage (%) |
|-------|-------------------|---|----------------|----------------|
| G1    | Keeps high always |  | 46             | 43.40          |
| G2    | Keeps low always  |  | 12             | 11.32          |
| G3    | From low to high  |  | 23             | 21.70          |
| G4    | From high to low  |  | 16             | 15.09          |
| G5    | Up and down       |  | 9              | 8.49           |
| Total |                   |   | 106            | 100.00         |

Source: Organized by this study

The majority was G1, following was G3. It showed that 65.09 % samples could

keep their Net Profit at high or from low to high after being impacted by two events. It fits the character of small and medium-sized enterprises, which are dynamic, less burden and durable.

#### 4.6.3.1. Relation between 5 new dynamic strategic groups with samples' fundamental data, Strategies and Performances

We took ANOVA tests to check the relations in between them. Number ranked according groups mean value from high (1) to low (5).

##### 4.6.3.1.1

Table 19 ANOVA test between new dynamic strategic groups and samples' fundamental data

| Fundamental Data | Persons | Annual Amount | Age * | Education | Working Years | RnD |   |   | L/R |   |   |
|------------------|---------|---------------|-------|-----------|---------------|-----|---|---|-----|---|---|
|                  |         |               |       |           |               | 1   | 2 | 3 | 1   | 2 | 3 |
| <b>Period</b>    |         |               |       |           |               |     |   |   |     |   |   |
| <b>G1</b>        | 1       | 1             | 2     | 1         | 2             | 3*  | 3 | 2 | 3   | 2 | 3 |
| <b>G2</b>        | 4       | 4             | 1     | 5         | 1             | 5*  | 5 | 3 | 5*  | 5 | 5 |
| <b>G3</b>        | 3       | 3             | 4     | 3         | 4             | 4*  | 2 | 5 | 2   | 3 | 1 |
| <b>G4</b>        | 2       | 2             | 3     | 4         | 3             | 2*  | 1 | 1 | 1*  | 1 | 4 |
| <b>G5</b>        | 5       | 5             | 5     | 2         | 5             | 1   | 4 | 4 | 4   | 4 | 2 |

\* p < .05

Source: Organized by this study

We found only "Age" has significant difference with new groups. And the eldest group G2 had the worst performances.

##### 4.6.3.1.2.

Table20 ANOVA test between new dynamic strategic groups and performances

| Performances  | Revenues |   |    | Net Profit * |   |    | ROI |    |   |
|---------------|----------|---|----|--------------|---|----|-----|----|---|
|               | 1        | 2 | 3  | 1            | 2 | 3  | 1   | 2  | 3 |
| <b>Period</b> |          |   |    |              |   |    |     |    |   |
| <b>G1</b>     | 3        | 3 | 3* | 2*           | 4 | 3  | 1*  | 3* | 2 |
| <b>G2</b>     | 5        | 5 | 5* | 5*           | 5 | 5* | 5*  | 5* | 5 |
| <b>G3</b>     | 4        | 1 | 1* | 3            | 3 | 1* | 2   | 2  | 4 |
| <b>G4</b>     | 2        | 2 | 2  | 1*           | 2 | 2  | 4   | 1* | 1 |
| <b>G5</b>     | 1        | 4 | 4  | 4            | 1 | 4  | 3   | 4  | 3 |

\* p < .05

Source: Organized by this study

Net Profit had significant difference in all periods. Revenues showed up its significant difference at end of periods. On the contrary, ROI was insignificant at end of periods.

##### 4.6.3.1.3.

Table 21 ANOVA test between new dynamic strategic groups and dynamic capabilities

| Dynamic Capabilities | ic_i | ic_e* | lc_km | lc_jit | ac* | pa | ia* | mp | pd* |
|----------------------|------|-------|-------|--------|-----|----|-----|----|-----|
| G1                   | 2    | 2*    | 1     | 3      | 2   | 1  | 2*  | 4  | 2   |
| G2                   | 3    | 5*    | 4     | 4      | 5*  | 5  | 5*  | 5  | 5   |
| G3                   | 1    | 1*    | 2     | 1      | 1*  | 2  | 1*  | 3  | 1   |
| G4                   | 4    | 4     | 5     | 2      | 3   | 3  | 4   | 2  | 3   |
| G5                   | 5    | 3     | 3     | 5      | 4   | 4  | 3   | 1  | 4   |

\* p < .05

Source: Organized by this study

External Integration Capability (ic\_e), Adjusting Capability (ac), Intangible Assets (ia) and Path Dependency (pd) have significant difference with new groups.

#### 4.6.3.1.4.

Table 22 ANOVA test between new groups and strategies

|                                    |               | Sum of Square | df  | Mean Square | F     | Sig. |
|------------------------------------|---------------|---------------|-----|-------------|-------|------|
| <b>Differentiation Orientation</b> | Between Group | 10.625        | 4   | 2.656       | 4.812 | .001 |
|                                    | Within Group  | 55.750        | 101 | .552        |       |      |
|                                    | Total         | 66.374        | 105 |             |       |      |
| <b>Cost Orientation</b>            | Between Group | 4.794         | 4   | 1.199       | 1.765 | .142 |
|                                    | Within Group  | 68.584        | 101 | .679        |       |      |
|                                    | Total         | 73.378        | 105 |             |       |      |
| <b>Market Orientation</b>          | Between Group | 20.238        | 4   | 9.276       | 9.276 | .000 |
|                                    | Within Group  | 55.089        | 101 |             |       |      |
|                                    | Total         | 75.327        | 105 |             |       |      |
| <b>Product Orientation</b>         | Between Group | 12.520        | 4   | 5.088       | 5.088 | .001 |
|                                    | Within Group  | 62.138        | 101 |             |       |      |
|                                    | Total         | 74.658        | 105 |             |       |      |

Source: Organized by this study

According descriptive statistics showed G1 is highest and G2 is the lowest in mean of Differentiation Orientation (DO), Cost Orientation (CO), Market Orientation (MO) and Product Orientation (PO).

There is no significant difference in Cost Orientation between groups. But they are significant difference in Differentiation Orientation (F ratio: 4.812, p value of .001), in Market Orientation (F ratio: 9.276, p value of 0.000), and in Product Orientation (F ratio: 5.088, p value of 0.001).

In order to get a clearer picture of the relationship between Strategies and new groups, we took ANOVA tests for each period of Strategies and new groups, and summarized as Table 22.

Table 23 ANOVA tests between new groups and strategies in 3 periods



| Strategies | DO * |    |    | CO |    |    | MO * |    |    | PO * |    |    |
|------------|------|----|----|----|----|----|------|----|----|------|----|----|
| Period     | 1    | 2  | 3  | 1  | 2  | 3  | 1    | 2  | 3  | 1    | 2  | 3  |
| G1         | 1*   | 2* | 1* | 1  | 1* | 1* | 1*   | 1* | 2* | 1*   | 1* | 3* |
| G2         | 5*   | 5* | 5* | 5  | 5* | 5* | 5*   | 5* | 5* | 5*   | 5* | 5* |
| G3         | 4    | 3* | 2* | 4  | 3  | 2  | 4*   | 2  | 1  | 2*   | 2* | 2  |
| G4         | 2    | 1* | 4  | 3  | 2* | 3  | 3*   | 3  | 4* | 3    | 4* | 4  |
| G5         | 3    | 4  | 3  | 2  | 4  | 4  | 2    | 4  | 3  | 4    | 3* | 1  |

\* P < .05

Source: Organized by this study

We found Cost Orientation was significant difference in second and third periods, only the first period was insignificant. Because products cost nearly all are similar in material, labor and production cost in Taiwan, no one would pay much attention to cost save till impacts came.

#### 4.6.3.2. Summary

1. Age was an important factor that could affect the performances in enterprises. Age of employees were medium who had experience in working field and were familiar, at least not feel strange with IT facilities, passion still.
2. Strategies all had relation with performances of enterprises when we watch the performances with time periods.
3. Enterprises who could own higher Intangible Assets and learned experience from past to adjust their direction by integrating external environment could create enterprises with good performances.

So we got the support for the hypothesis of H2 that enterprises took same strategy to get into the business (G1 & G4, G2 & G3), but the performances were different caused by different dynamic capabilities and strategies adoption.

|      | Hypothesis  | Supported |
|------|---|-----------|
| H2-1 | The difference of performances were caused by different dynamic capabilities of enterprises | <b>V</b>  |
| H2-2 | The difference of performances were caused by different strategies adoption                 | <b>V</b>  |

#### 4.6.3.3. Comparison between G1 vs. G4 & G2 vs. G3

As we know members of G1 can keep high performances always, but G4 went down from high. G2 and G3 all were in bad shape, why G3 could climb up and G2 could not?

G1 and G4 all were in good performances, just G4 declined at the end. The reasons why G4 declines after events impact and G1 did not, from Strategies, Dynamic Capabilities and case Fundamental Data, we could tell that G1 was a bit elder than G4, and G1 was better in nearly all strategies value and good in "Process" - External Integration Capability and Adjusting Capability; "Position" - Intangible Assets and "Path" - Path Dependency.

G2 and G3 all were poor performances from the beginning, but G3 was getting better at the end. We could find the reasons that G3 was much younger than G2 and Strategies value in G3 were much better. In Dynamic Capability, "Process" - External Integration Capability and Adjusting Capability; "Position" - Intangible Assets and "Path" - Path Dependency all were significant difference with G2.

#### 4.6.4. Further Study of Dynamic Capabilities and Performances with Dynamic Strategic Groups

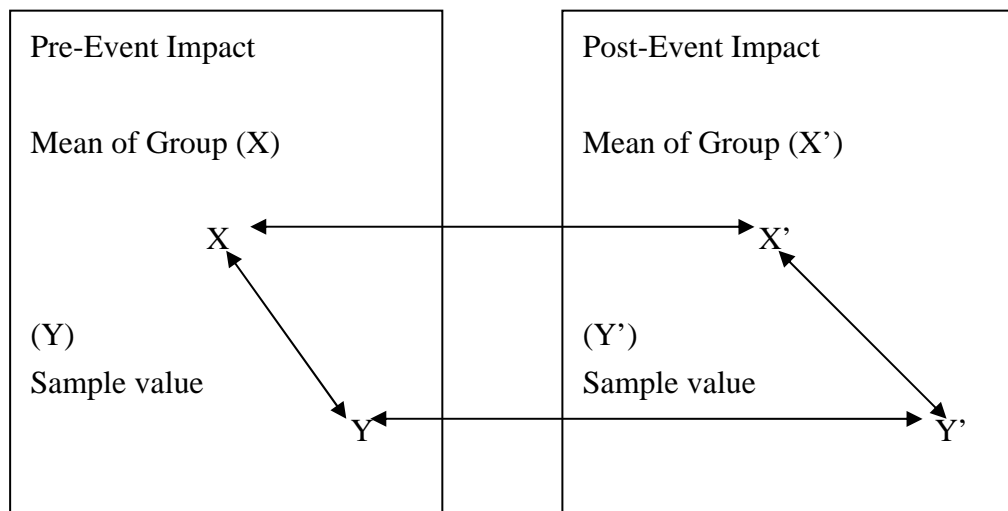
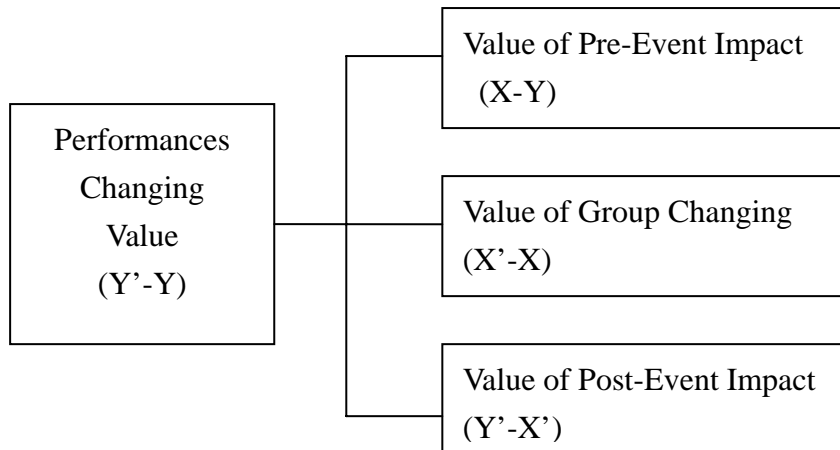
##### 4.6.4.1. Performances' value

For further understanding of the relation between Dynamic Capabilities and Performances, we separated the changing value of Performances ( $Y'-Y$ ) into three sub-values: Value of Pre-Event Impact Position ( $X-Y$ ), Value of Group Changing Position ( $X'-X$ ), and Value of Post-Event Impact Position ( $Y'-X'$ ). Pre-Event Impact Position means the sample position (difference between sample value and the mean value of group the sample in) in group before events impacted. Group Changing Position means the difference of group position changed. Post-Event Impact Position means the sample position (difference between sample value and the mean value of group the sample in)

in group after events impacted.

$$(Y' - Y) = (X - Y) + (X' - X) + (Y' - X')$$

By using Canonical Correlation Analysis to find the relation between Dynamic Capabilities and three sub-values (Value of Pre-Event Impact Position of each performance. Chart 3 Disassembling Performances value

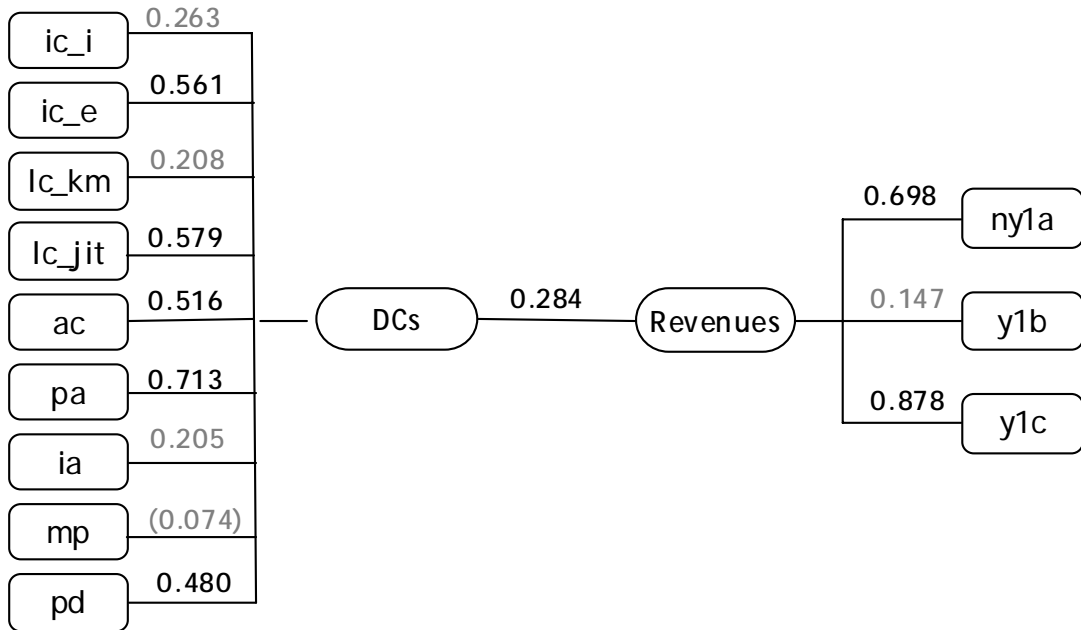


#### 4.6.4.2. Canonical Correlation Analysis

In order to specify the relation of performances with dynamic capabilities we conducted a series correlation analyses.

##### 4.6.4.2.1. Canonical Correlation of Revenues and Dynamic Capabilities (DCs) in all periods

Chart 4 DCs and Revenues canonical correlation analysis



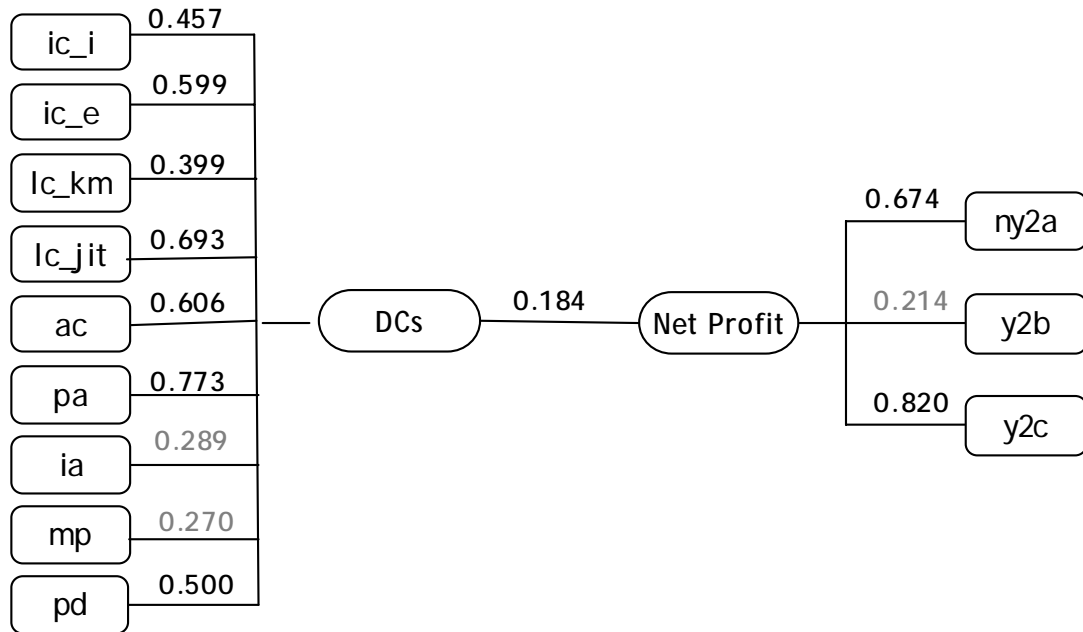
| Variate  | Square of structure correlation (R <sup>2</sup> ) | Adequacy Coefficient | Redundancy Coefficient |
|----------|---|----------------------|------------------------|
| DCs      | 0.284   | 21.683%              | 6.158%                 |
| Revenues | 0.284   | 42.662%              | 12.116%                |

Source: Organized by this study

1. Square of the structure correlation between DC and Revenues was 0.284.
2. DCs were poor predictors for group changing.
3. DCs of “Process” - External Integration Capability, JIT Learning, and Adjusting Capability; “Position - Tangible Assets and “Path” - Path Dependency had positive predictive power for Revenues before and after impact events.

#### 4.6.4.2.2. Canonical Correlation of Net Profit and Dynamic Capabilities (DCs) in all periods

Chart 5 DCs and Net Profit canonical correlation analysis



| Variate    | Square of structure correlation ( $R^2$ ) | Adequacy Coefficient | Redundancy Coefficient |
|------------|---|----------------------|------------------------|
| DCs        | 0.184                                     | 24.185%              | 4.450%                 |
| Net Profit | 0.184                                     | 39.055%              | 7.186%                 |

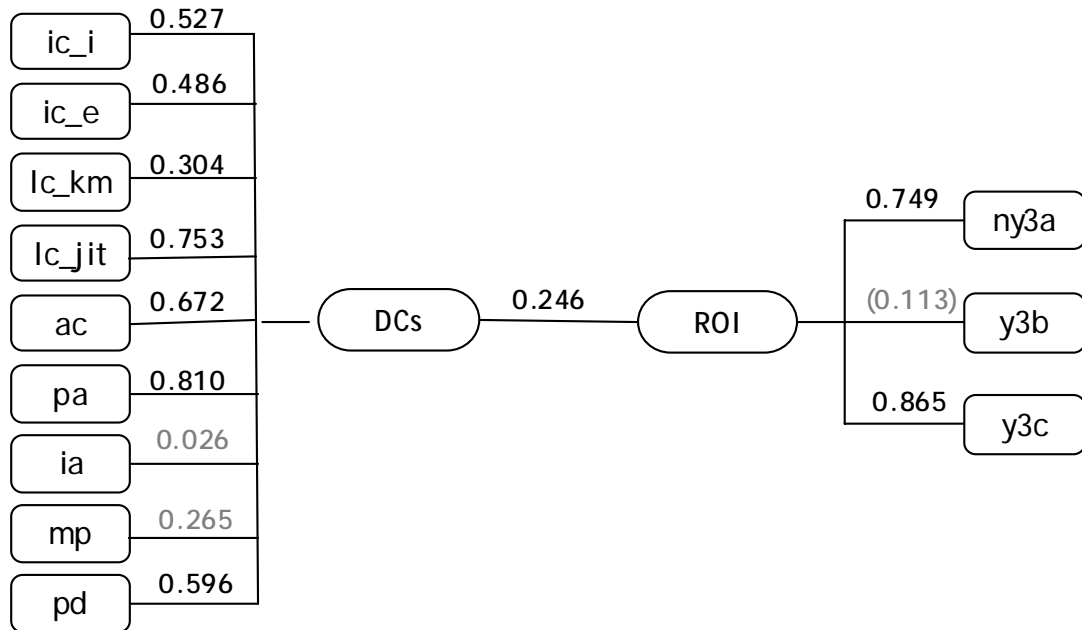
Source: Organized by this study

1. Square of the structure correlation between DC and ROI was 0.184.
2. DCs were poor predictors for group changing.
3. DCs of “Process” - Internal Integration Capability, Knowledge Management, External Integration Capability, JIT Learning, and Adjusting Capability; “Position” - Tangible Assets and “Path” - Path Dependency had positive predictive power for Net Profit before and after impact events.

#### 4.6.4.2.3. Canonical Correlation of ROI and Dynamic Capabilities (DCs)

in all periods

Chart 6 DCs and ROI canonical correlation analysis



| Variate | Square of structure correlation (R <sup>2</sup> ) | Adequacy Coefficient | Redundancy Coefficient |
|---------|---|----------------------|------------------------|
| DCs     | 0.246   | 25.953%              | 6.384%                 |
| ROI     | 0.246   | 44.116%              | 10.853%                |

Source: Organized by this study

1. Square of the structure correlation between DC and ROI was 0.246.
2. DCs were poor predictors for group changing.
3. DCs of "Process" - Internal Integration Capability, Knowledge Management, External Integration Capability, JIT Learning, and Adjusting Capability; "Position" - Tangible Assets and "Path" - Path Dependency had positive predictive power for ROI before and after impact events.

We had a conclusion that Dynamic Capabilities did have significant and positive correlation with performances of enterprises before impact (Canonical loading in Revenues was .698, Net Profit was .674 and ROI was .749. All were > .3). So we got the support to our hypothesis of H3-1.

| Hypothesis |  | Supported |
|------------|--|-----------|
| H3-1       | The performances of enterprises had significant and positive correlation with dynamic capabilities before impact | <b>V</b>  |

We also found dynamic capabilities also had significant and positive correlation with performances of enterprises after impact (Canonical loading in Revenues was .878, Net Profit was .820 and ROI was .865. All were  $> .3$ ) to prove our hypothesis of H3-2.

| Hypothesis |   | Supported |
|------------|---|-----------|
| H3-2       | The performances of enterprises had significant and positive correlation with dynamic capabilities after impact | <b>V</b>  |

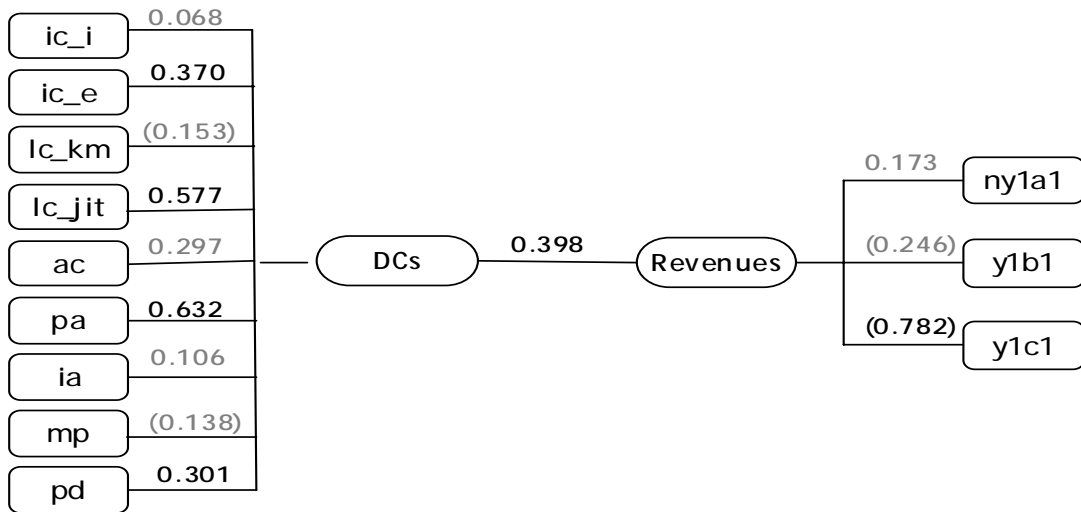
But in groups' performances change, we found they had no significant correlation with dynamic capabilities. (Canonical loading in Revenues was .147, Net Profit was .214 and ROI was .113, all were  $< .3$ ), which failed to support our hypothesis H3-3.

| Hypothesis |  | Supported |
|------------|--|-----------|
| H3-3       | The groups' performances change had significant and positive correlation with dynamic capabilities | <b>X</b>  |

Most of dynamic capabilities did have correlation with performances of enterprises before or after impacts. And the correlations were positive. We found dynamic capability of External Integration, JIT Learning, Adjusting Capability, Tangible Assets and Path Dependency all were have significant correlation with all performances. But for groups' performances change, we could not find they had such correlation with dynamic capabilities. Since the impacts we chose one was unexpected (Financial Crisis) and another one was expected (WTO). We made canonical correlation analyses as well separately.

#### 4.6.4.2.4. Canonical Correlation of Revenues and Dynamic Capabilities (DCs) before and after Financial Crisis and WTO Impacts

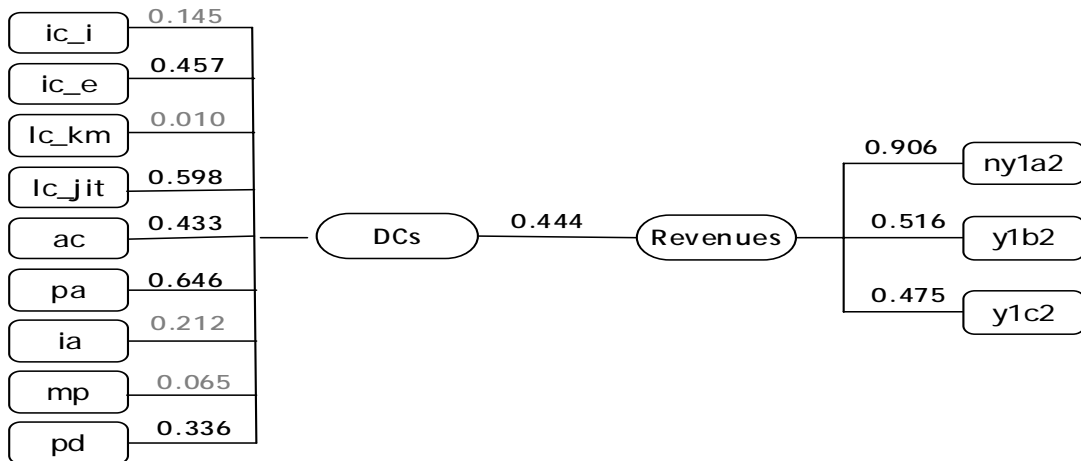
**Chart 7 DCs and Revenues canonical correlation analysis (Financial Crisis impact)**



| Variate  | Square of structure correlation ( $R^2$ ) | Adequacy Coefficient | Redundancy Coefficient |
|----------|---|----------------------|------------------------|
| DCs      | 0.398                                     | 14.491%              | 5.767%                 |
| Revenues | 0.398                                     | 34.238%              | 13.627%                |

Source: Organized by this study

**Chart 8 DCs and Revenues canonical correlation analysis (WTO impact)**



| Variate  | Square of structure correlation ( $R^2$ ) | Adequacy Coefficient | Redundancy Coefficient |
|----------|---|----------------------|------------------------|
| DCs      | 0.444                                     | 17.994%              | 7.989%                 |
| Revenues | 0.444                                     | 43.780%              | 19.438%                |

Source: Organized by this study



1. Square of the structure correlation between DC and Revenues as:  
Finance Crisis: 0.398; WTO: 0.444  
They were nearly the same. So DC and Revenues correlation had no difference in Finance Crisis and WTO impacts.
2. Group changing showed correlation between DC and Revenues in WTO impact, not in Finance Crisis impact.
3. Samples' Revenues had positive high correlation with Real Capital and JIT Learning after Finance Crisis impact. No correlation before Finance Crisis impact and group changing.  
Samples' Revenues had positive correlation with Real Capital and JIT Learning before and after WTO impact.

Table 24 Compare two impacts by Revenues:

| Impact         | R <sup>2</sup> | DC<br>d         | ic_i | ic_e | lc_km | lc_jit | ac   | pa   | ia | mp | pd   |
|----------------|----------------|-----------------|------|------|-------|--------|------|------|----|----|------|
|                |                |                 |      |      |       |        |      |      |    |    |      |
| Finance Crisis | 0.398          | ny1a1           |      |      |       |        |      |      |    |    |      |
|                |                | y1b1<br>0.69    |      |      |       |        |      |      |    |    |      |
|                |                | y1c1<br>(0.87)  |      | 0.37 |       | 0.58   |      | 0.63 |    |    | 0.30 |
| WTO            | 0.444          | ny1a2<br>(0.50) |      | 0.46 |       | 0.60   | 0.43 | 0.65 |    |    | 0.34 |
|                |                | y1b2<br>(0.99)  |      | 0.46 |       | 0.60   | 0.43 | 0.65 |    |    | 0.34 |
|                |                | y1c2            |      | 0.46 |       | 0.60   | 0.43 | 0.65 |    |    | 0.34 |

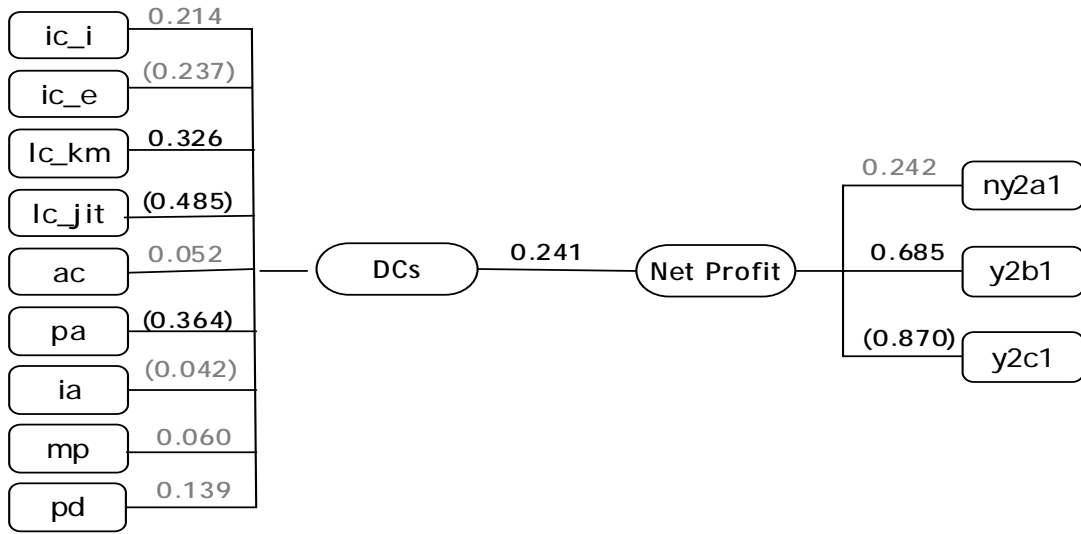
Source: Organized by this study

#### Sub-Summary:

1. Samples' Revenues in pre-event and groups performances changeand had no correlation with DC in Finance Crisis (unexpected event).
  2. WTO event was expected, so most DC had positive correlation before and after impact.
- 4.6.4.2.5. Canonical Correlation of Net Profit and Dynamic Capabilities (DCs)

before and after Financial Crisis and WTO Impacts

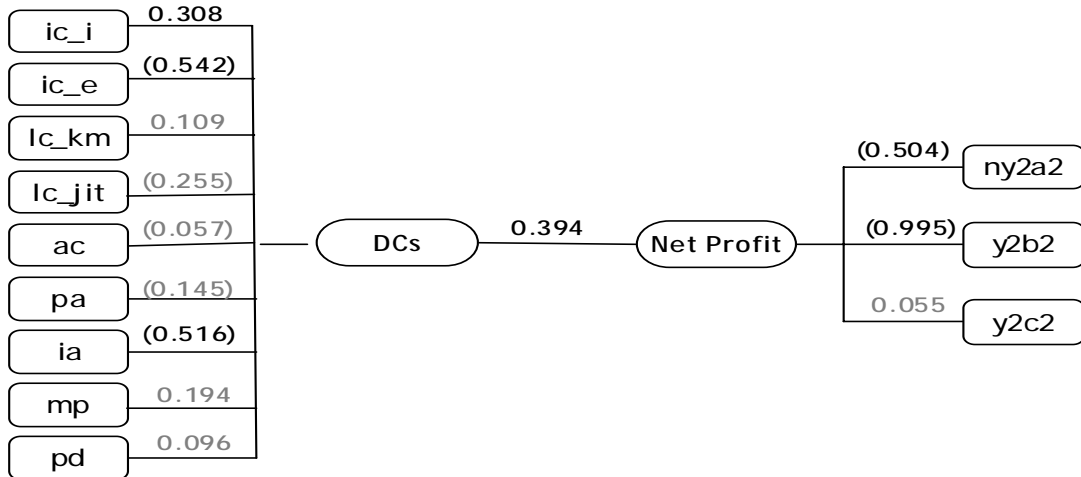
**Chart 9 DCs and Net Profit canonical correlation analysis (Financial Crisis impact)**



| Variate    | Square of structure correlation ( $R^2$ ) | Adequacy Coefficient | Redundancy Coefficient |
|------------|---|----------------------|------------------------|
| DCs        | 0.241                                     | 6.656%               | 1.604%                 |
| Net Profit | 0.241                                     | 42.770%              | 10.308%                |

Source: Organized by this study

**Chart 10 DCs and Net Profit canonical correlation analysis (WTO impact)**



| Variate    | Square of structure correlation ( $R^2$ ) | Adequacy Coefficient | Redundancy Coefficient |
|------------|---|----------------------|------------------------|
| DCs        | 0.394                                     | 7.590%               | 2.991%                 |
| Net Profit | 0.394                                     | 41.542%              | 16.368%                |

Source: Organized by this study

1. Square of the structure correlation between DC and Net Profit as:  
Finance Crisis: 0.241; WTO: 0.394  
DC had more correlation with Net Profit in expected impact than unexpected impact.
2. Group changing dramatically both in Financial Crisis and WTO, especially in WTO.
3. Samples' Net Profit had positive correlation with Real Capital and JIT Learning after Finance Crisis impact. No correlation before Finance Crisis impact.  
Samples' Net Profit had positive correlation with External Integration and Intangible Capital before WTO impact.

Table 25 Compare two impacts by Net Profit:

| Impact         | R <sup>2</sup> | DC              |      |        |       |        |    |        |        |    |    |
|----------------|----------------|-----------------|------|--------|-------|--------|----|--------|--------|----|----|
|                |                | d               | ic_i | ic_e   | lc_km | lc_jit | ac | pa     | ia     | mp | pd |
| Finance Crisis | 0.241          | ny2a1           |      |        |       |        |    |        |        |    |    |
|                |                | y2b1<br>0.69    |      |        | 0.33  | (0.49) |    | (0.36) |        |    |    |
|                |                | y2c1<br>(0.87)  |      |        | 0.33  | (0.49) |    | (0.36) |        |    |    |
| WTO            | 0.394          | ny2a2<br>(0.50) | 0.31 | (0.54) |       |        |    |        | (0.52) |    |    |
|                |                | y2b2<br>(0.99)  | 0.31 | (0.54) |       |        |    |        | (0.52) |    |    |
|                |                | y2c2            |      |        |       |        |    |        |        |    |    |

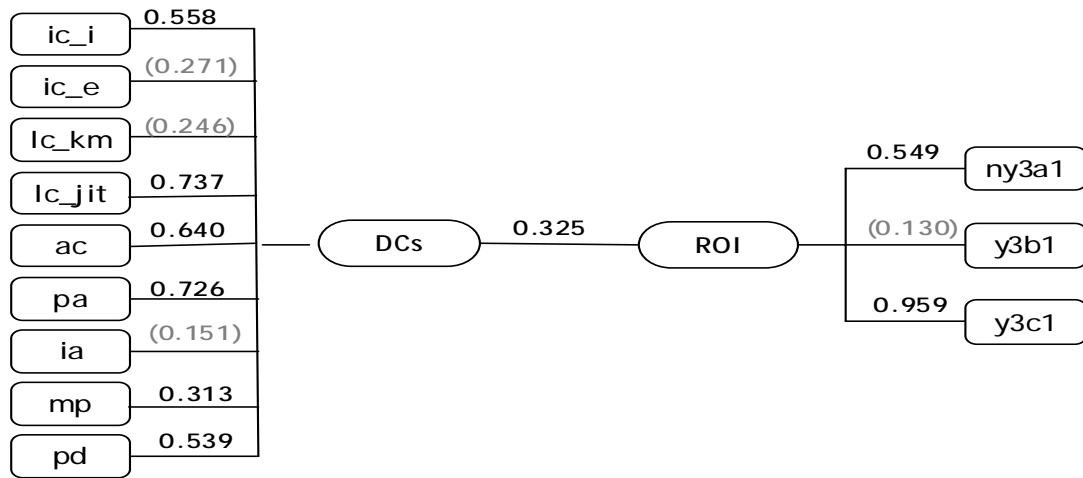
Source: Organized by this study

#### Sub-Summary:

1. When unexpected impact occurred, continuous and accumulated DC, such as JIT Learning and Real Capital have correlation with Net Profit. When expected impact occurred, External Integration and Intangible Capital have correlation with Net Profit.
2. Group changing were high in both impacts. It means enterprises all would make change to face impacts no matter it is expected or unexpected.

#### 4.6.4.2.6. Correlation of ROI and Dynamic Capabilities (DCs) before and after Financial Crisis Impact

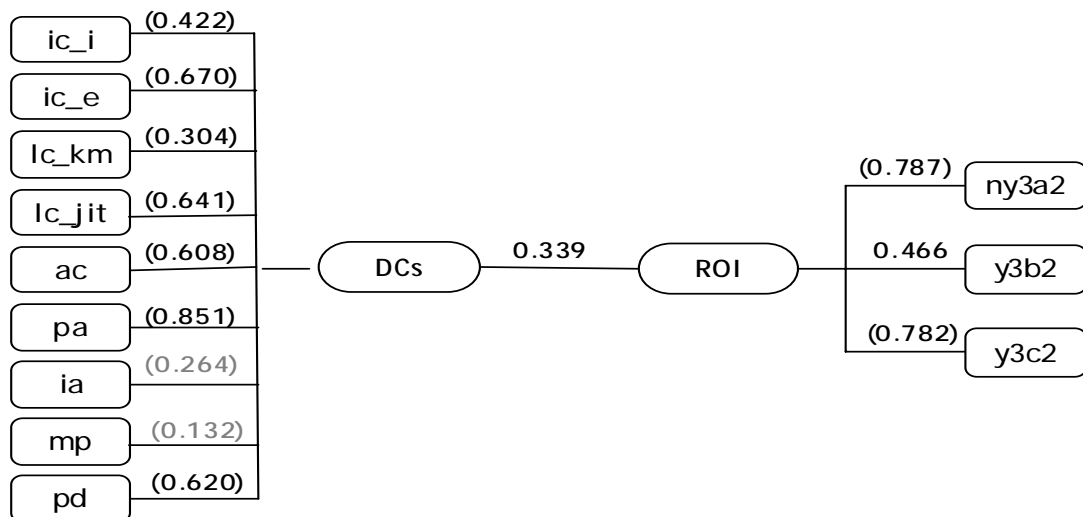
**Chart 11 DCs and ROI canonical correlation analysis  
(Financial Crisis impact)**



| Variate | Square of structure correlation ( $R^2$ ) | Adequacy Coefficient | Redundancy Coefficient |
|---------|---|----------------------|------------------------|
| DCs     | 0.325                                     | 23.304%              | 7.574%                 |
| ROI     | 0.325                                     | 41.256%              | 13.408%                |

Source: Organized by this study

**Chart 12 DCs and ROI canonical correlation analysis  
(WTO impact)**



| Variate | Square of structure correlation ( $R^2$ ) | Adequacy Coefficient | Redundancy Coefficient |
|---------|---|----------------------|------------------------|
| DCs     | 0.339                                     | 24.963%              | 8.463%                 |
| ROI     | 0.339                                     | 48.221%              | 16.347%                |

Source: Organized by this study

1. Square of the structure correlation between DC and ROI as:  
Finance Crisis: 0.325; WTO: 0.339  
They were nearly the same. So DC and ROI correlation had no difference in Finance Crisis and WTO impacts.
2. Group changing showed correlation between DC and ROI in WTO impact only, not in Finance Crisis impact.
3. Samples' ROI had positive correlation with most of DC, except in External Integration, Knowledge management and Intangible Capital before and after Finance Crisis impact.  
Samples' ROI had positive correlation with most of DC, except in Intangible Capital and Market Potentiality before and after WTO impact.

Table 26 Compare two impacts by ROI

| Impact         | R <sup>2</sup> | DC<br>d         | ic_i   | ic_e   | lc_km  | lc_jit | ac     | pa     | ia | mp   | pd     |
|----------------|----------------|-----------------|--------|--------|--------|--------|--------|--------|----|------|--------|
|                |                |                 |        |        |        |        |        |        |    |      |        |
| Finance Crisis | 0.325          | ny3a1<br>0.549  | 0.56   |        |        | 0.74   | 0.64   | 0.73   |    | 0.31 | 0.54   |
|                |                | y3b1            |        |        |        |        |        |        |    |      |        |
|                |                | y3c1<br>0.959   | 0.56   |        |        | 0.74   | 0.64   | 0.73   |    | 0.31 | 0.54   |
| WTO            | 0.444          | ny3a2<br>(0.79) | (0.42) | (0.67) | (0.30) | (0.64) | (0.61) | (0.85) |    |      | (0.62) |
|                |                | y3b2<br>0.47    | (0.42) | (0.67) | (0.30) | (0.64) | (0.61) | (0.85) |    |      | (0.62) |
|                |                | y3c2<br>(0.78)  | (0.42) | (0.67) | (0.30) | (0.64) | (0.61) | (0.85) |    |      | (0.62) |

Source: Organized by this study

Sub-Summary:

1. ROI belongs to long term result. We could find DC had strong correlation with ROI after both impacts.
2. ROI needs nearly all DC to run when enterprise meets impact, especially when the impact is expected.

We could find in expected event impact, DCs did have significant correlation with groups change.

4.6.4.2.7.

Summary:

Comparison between unexpected and expected impacts in performances

Table 27 Major difference between unexpected and expected impacts in performances

|  | Revenues   | Net Profit  | ROI  |
|--|--|---|--|
| Major difference between unexpected and expected impacts | Pre-event impact value and post-event impact value, even group change, all had positive correlation with DCs in expected impact. But not in unexpected impact. | In unexpected impact, post-event value had positive correlation with DCs, but in expected impact, pre-event value had such correlation. | Group change was not significant in correlation in unexpected impact, but it was significant in expected impact. |

Source: Organized by this study

From above analyses and description, we could find that dynamic capabilities did affect performances of enterprises entirely or partially under no matter the impact was unexpected or expected. So it supported our hypothesis H4 as follows:

|      | Hypothesis  | Supported |
|------|---|-----------|
| H4-1 | Under unexpected impact, the performances of enterprises had significant and positive correlation with dynamic capabilities before impact | X         |
| H4-2 | Under unexpected impact, the performances of enterprises had significant and positive correlation with dynamic capabilities after impact  | V         |
| H4-3 | Under unexpected impact, the groups' performances change had significant and positive correlation with dynamic capabilities               | X         |
| H4-4 | Under expected impact, the performances of enterprises had significant and positive correlation with dynamic capabilities before impact   | V         |
| H4-5 | Under expected impact, the performances of enterprises had significant and positive correlation with dynamic capabilities after impact    | V         |
| H4-6 | Under expected impact, the groups' performances change had significant and positive correlation with dynamic capabilities                 | V         |

## Chapter 5

### Conclusions

All hypotheses supported status in this study as follows:

Table 28 Hypotheses supported status

|      | Hypotheses   | Supported |
|------|--|-----------|
| H1   | Strategic groups exist in Taiwan packaging industry and change in membership and group numbers over time   |           |
| H1-1 | Strategic groups did exist in Taiwan packaging industry  | v         |
| H1-2 | Strategic groups change in membership and groups number over time  | v         |
| H2   | The difference of performances were caused by different dynamic capabilities and strategies adoption   |           |
| H2-1 | The difference of performances were caused by different dynamic capabilities of enterprises  | v         |
| H2-2 | The difference of performances were caused by different strategies adoption  | v         |
| H3   | The performances of enterprises had significant and positive correlation with dynamic capabilities before and after impact, so as groups' performances change. |           |
| H3-1 | The performances of enterprises had significant and positive correlation with dynamic capabilities before impact   | v         |
| H3-2 | The performances of enterprises had significant and positive correlation with dynamic capabilities after impact  | v         |
| H3-3 | The groups' performances change had significant and positive correlation with dynamic capabilities   | x         |
| H4   | Under unexpected and expected impacts, dynamic capabilities did affect performances of enterprises   |           |
| H4-1 | Under unexpected impact, the performances of enterprises had significant and positive correlation with dynamic capabilities before impact                      | x         |
| H4-2 | Under unexpected impact, the performances of enterprises had significant and positive correlation with dynamic capabilities after impact                       | v         |
| H4-3 | Under unexpected impact, the groups' performances change had significant and positive correlation with dynamic capabilities                                    | x         |
| H4-4 | Under expected impact, the performances of enterprises had significant and positive correlation with dynamic capabilities before impact                        | v         |
| H4-5 | Under expected impact, the performances of enterprises had significant and positive correlation with dynamic capabilities after impact                         | v         |
| H4-6 | Under expected impact, the groups' performances change had significant and positive correlation with dynamic capabilities                                      | v         |

Taiwan packaging industry is composed by hundreds of small and medium-sized enterprises with motive, hard working characters.

In this study, we realized employees in enterprises should be medium age who could have connection with latest Techknowledge and mature to be experienced with colleagues and work.

Strategy groups did exist in this field and had deep affection with performances of enterprises. The majority of samples did not affected by events impact in performances by changing strategy group. But new strategy groups were created. Dynamic strategy groups did exist in Taiwan packaging field.

As to Dynamic Capabilities, no matter in Revenues, Net Profit or ROI, samples value change had significant correlation with Dynamic Capacities (except Intangible Assets and Market Potentiality) before and after events impact. But groups change all were insignificant correlation with Dynamic Capacities. So Dynamic Capabilities did affect the performances of enterprises, but did not affect the groups' value change. If we exam Dynamic Capabilities with events which we treat them as unexpected event (Financial Crisis) and expected event (WTO), then we realized that DCs did affect the groups' performances change in expected event.

The DCs which made differences in performances between unexpected and expected impacts were (1) Process: Internal Integration Capabilities, External Integration Capabilities, Knowledge Management and JIT Learning, (2) Position: Adjusting Capabilities and Tangible Assets, (3) Path: Path Dependency.

How efficiently and effectively internal coordination or integration is achieved is very important (Aoki, 1990). Likewise for external coordination. Knowledge identification, knowledge diffusion, knowledge integration and the enactment of the environment are critical for generating core competencies. Inherit and adopt evolutionary path is essential capability for enterprises.

Overall, this study provides a unique contribution to the packaging industry in Taiwan that enrich their dynamic capabilities (except Intangible Assets and



Market Potentiality) can increase their performances and can stand the impacts no matter whether the impacts are unexpected or expected. In this study, we learned a lesson that from the view of dynamic strategic groups we could get a more clear picture of how enterprises to get performances by using their dynamic capabilities and strategies adoption. As such, this study provides a better understanding of how a small and medium-sized enterprise should pay attention to.

## Limitations

As with previous studies, this study has its limitation. First, it was confined to firms competing in the same environment, namely the packaging industry. Second, the study was reduced to one of “business strategy” and not “corporate strategy” encompassing product-market and geographical diversification, and horizontal and vertical integration. Finally, impact events chose were too close to each other, it’s not so obviously to identify the impact result within such a short period of time.

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## Appendix - Questionnaire

### 一、基本資料

請在下方適當空格位置打“x”

1. 貴公司成立於1997年之前 是 否
2. 您是否為管理階層 是 否
3. 貴公司員工人數  
10人以下 10~20人 21~30人 31~50人 50人以上
4. 貴公司2004年營業額約新台幣  
1千萬以下 1千萬~2千萬 2千萬~3千萬 3千萬~5千萬 5千萬以上
5. 您的年齡 20~30歲 31~40歲 41~50歲 51~60歲 60歲以上
6. 您的學歷 國初中畢業 高中職畢業 專科大學畢業 碩士 博士
7. 您在此公司任職年數 3年以下 3~5年 6~8年 9~10年 10年以上

### 二、策略群組 Strategy Group

下方敘述主要確認 貴公司(廠)在不同時期,如亞洲風暴之前,亞洲風暴之後至中國進入 WTO 之前,及中國進入 WTO 之後所採策略. 請依 貴公司(廠)實際狀況勾選.

The following statements are meant to identify strategies of your firm took in different period, such as before Asian Economic Storm, between Asian Economic Storm and China gets into WTO, and after China gets into WTO. Please indicate which response most closely matches your business.

Periods:

時期

- A. Before Asian Economic Storm (~ 1996)  
亞洲風暴之前 (~ 1996)
- B. After Asian Economic Storm, before China gets into WTO ( 1997 ~ 2000 )  
亞洲風暴之後至中國進入 WTO 之前 ( 1997 ~ 2000 )
- C. After China gets into WTO (2001 ~)  
中國進入WTO之後 (2001 ~)

(Coefficient alpha = )

Performance value

Very little  
程度低

- Considerable high  
程度高

1. Establish your own brand name in market  
建立自有品牌知名度  
A  B  C
2. Products prices are competitive among competitors  
產品價格比同業具競爭力  
A  B  C
3. Product has high quality standard  
產品具有高水準品質  
A  B  C
4. Offer considered after service  
提供完善的售後服務  
A  B  C
5. Develop new products  
新產品的開發  
A  B  C

6. Increase producing efficiency  
提昇生產效率
- A                      B                      C
- 
7. Offer various products in order to serving more service  
提供更多的產品類型,給顧客較多的服務
- A                      B                      C
- 
8. Improve the function of current products  
改進現有產品之功能
- A                      B                      C
- 
9. Enhance the capability of gathering capital to minimize the loan from market  
增強自有資金之籌措能力以減少對外融資
- A                      B                      C
- 
10. Innovation in marketing skills and method  
行銷技術及方法之創新
- A                      B                      C
- 
11. Capability of producing special specification products  
生產特殊規格產品之能力
- A                      B                      C
- 
12. More sound distribution channels than competitors  
擁有比競爭對手更完善的配銷通路據點
- A                      B                      C
- 
13. Control sources of main components or materials  
對於主要原料供應來源的掌握
- A                      B                      C
- 
14. Experienced engineers or accumulated skill  
員工經驗豐富技術累積程度高
- A                      B                      C
- 
15. Concentrate to manage a or few special isolated market  
專心經營一個或少數特殊的區隔市場
- A                      B                      C
- 
16. Produce high quality product to serve high quality market  
針對高價位市場生產高級產品
- A                      B                      C
- 
17. Frequently use advertising and exhibition to promote  
經常利用廣告與參展等促銷活動
- A                      B                      C
- 
18. Establish well credibility  
建立良好的聲譽
- A                      B                      C
- 
19. Capability of predicting market needs  
市場需求的預測能力
- A                      B                      C
-



20. Innovation in producing engineering  
製程技術的創新
- A                      B                      C
- 
21. Invest in R&D to upgrade the R&D capability  
投入研發支出提昇研發能力
- A                      B                      C
- 
22. Reach economic producing quantity to level down production cost  
以大量生產降低生產成本
- A                      B                      C
- 
23. Export products to overseas  
從事經營外銷市場
- A                      B                      C
- 
24. Leading in professional technology among competitors  
在同業中專業技術的領先
- A                      B                      C
- 
25. More inventory than competitors  
對於產品有較高的存貨量
- A                      B                      C
- 
26. Lower running cost than competitors  
與同業比較擁有較低的營運成本
- A                      B                      C
- 

### 三、動態能力 Dynamic Capabilities

程序

Process

1. 是否持續投資於相關技術之研發以增進公司的吸收能力  
Continuously invest in related technical research to improve enterprise's adoption capability
- A                      B                      C
- 
2. 與外部相關單位是否擁有良好的溝通管道。  
Having good communication channels with related departments
- A                      B                      C
- 
3. 是否能將相關合作廠商所提供之產品或服務加以整合  
Integrating products or services from cooperated partners
- A                      B                      C
- 
4. 是否指定專責單位負責偵測、蒐集、處理及評估外部資訊  
Assign some responsible departments to detect, collect, process and evaluate information from outside.
- A                      B                      C
- 
5. 組織架構是否有利於部門之間的合作與溝通。  
Organization structure benefits the communication and collaboration between departments
- A                      B                      C
- 
6. 是否建立部門間資訊流通及合作之機制  
Having system to set up information flow between departments
- A                      B                      C
-

7. 是否運用跨部門團隊來執行公司的專案計劃  
To process project programs cross departments  
A B C
8. 對於可能發生的問題是否建立一套問題解決的機制  
Trying to set up a system to solve any potential crises  
A B C
9. 是否收集其他產業動態、技術及顧客之資訊  
Collecting trends, techniques and customers information in other industrial fields  
A B C
10. 是否投資與公司核心能力互補的技術或資產  
Investing in the complementary skill or assets of core capability  
A B C
11. 是否舉行跨部門會議討論及反應公司之問題  
Holding cross departments meetings to discuss problems in enterprise  
A B C
12. 是否嘗試將不同績效面向的能力加以整合  
Trying to integrate the capability of creating different positive effects  
A B C
13. 是否能將新的能力整合於原來的核心能力中  
Integrating new capabilities into original core capabilities  
A B C
14. 從外部獲得的新資訊是否能很快地加以利用  
Can use new information got from outside  
A B C
15. 員工由內部獲得的知識，是否能很快應用到日常工作中  
Staffs use information got from intra-enterprise on daily work  
A B C
16. 是否能重新組合公司的知識以應付環境的變動  
Reorganize enterprise knowledge to face environment changes  
A B C
17. 跨部門間是否有一套行政慣例使各部門之間得以有效合作  
There is a set of examples of administration for cross departments to work effectively  
A B C
18. 是否具有鼓勵學習的組織文化  
Organization culture possesses learning encouragement  
A B C
19. 所有文件是否皆具標準格式以利歸檔  
All documents filed with standard formats for file management  
A B C

20. 是否建立資訊交流機制，讓員工可迅速獲得新資訊並分享經驗  
Set up information interchange system in order to share new information and experience between staff  
A  B  C
21. 是否舉辦內部教育訓練或小組討論，使員工獲得工作相關技能  
Holding intra-trainings or team discussions to let staff have related skills.  
A  B  C
22. 是否從事「標竿學習」以提昇競爭力  
Empower "Benchmark Learning" to raise competitive competences  
A  B  C
23. 是否從內部挑選表現傑出單位，以供其它單位學習  
Select outstanding department from enterprise as learning example  
A  B  C
24. 是否藉由策略聯盟學習其它公司的核心能力或經驗  
Learning other core capabilities or experiences from strategic allies  
A  B  C
25. 是否依環境需求調整公司的學習重點，以改進公司不足處  
Adjusting leaning dirction to improve less in company  
A  B  C
26. 是否會持續探討行動成功或失敗之前的因果關係  
Keep on searching for the causes' relation of success or failure of activities  
A  B  C
27. 是否會重視內部發生的問題，並建立解決問題的機制  
Pay attention to the problems in enterprise and set up sytem to solve  
A  B  C
28. 遭遇問題是否會深入公司的規範或價值觀來進行偵測與修正  
Deep into enterprise regualtions and value vison to detect and modify when encounters problems  
A  B  C
29. 是否能快速的調整產能  
Speedy adjusting production capacity  
A  B  C
30. 是否能快速的調整供貨以應付市場需求  
Speedy adjusting prodcuts supply to fit market demands  
A  B  C
31. 是否預約供應商的產能來配合公司的生產  
Pre-order supplier's capacity to fit own production  
A  B  C
32. 是否使用專案團隊  
Utilizing project team  
A  B  C

33. 是否依據不同之任務需求調整員工工作內容  
Adjusting staff working contents according different jobs need  
A                      B                      C
34. 是否能依據環境變動或競爭之所需，調整組織結構  
Adjusting organization structure according environment changing or competition  
A                      B                      C
35. 是否能依據環境變動或競爭之所需，調整內部運作程序  
Adjusting intra-operation processes according environment changing or competition  
A                      B                      C
36. 是否與外部廠商合建立良好的關係網絡  
Establish good connection network with enterprises  
A                      B                      C
37. 是否能快速產生不同的應對策略，以應付環境變動  
Establish different strategies quickly to face environment changing  
A                      B                      C
38. 是否能快速改變所提供的產品組合，以應付環境變動  
Changing products portfolio quickly to face environment changing  
A                      B                      C
39. 是否能快速調整產品與市場之組合，以應付環境變動  
Adjusting portfolil of products and market quickly to face environment changing  
A                      B                      C
- 位置  
Position
40. 是否擁有專利技術  
Possessing patent skills  
A                      B                      C
41. 是否擁有獨特不易模仿的製造技術  
Possessing unique and difficult to imitate manufacturing skill  
A                      B                      C
42. 是否與顧客保持良好的關係  
Keeping good relationship with customers  
A                      B                      C
43. 是否與供應商保持良好的信任關係  
Keeping well-sound trusting relationship with suppliers  
A                      B                      C
44. 所欠缺技術或產品種類是否可獲得公司策略聯盟支援  
Missing skill or products can be supplied by strategic allies  
A                      B                      C
45. 推出新產品時，相關部門是否能給予有效的支援  
Related department support fully during new product's launch  
A                      B                      C

46. 是否可即時在金融市場中取得所需的資金  
Can get finance support from financial market in real time  
A  B  C
47. 是否比競爭對手擁有更多的資金  
Possessing more financial support than competitors  
A  B  C
48. 是否具有良好的形象  
Credited with good image  
A  B  C
49. 是否具有高知名度  
Credited with high noted  
A  B  C
50. 組織結構是否有助於核心能力的發展或產品、服務的創新  
Organization structure benefits development of core competences or innovations of product or service  
A  B  C
51. 組織運作例規是否有利於各項業務的推行，且是不易模仿的  
Organization processing regulations benefit business promotion and hard to imitate  
A  B  C
52. 組織文化是否有利於各項業務的推行，且是不易模仿的  
Organization culture benefits business promotion and hard to imitate  
A  B  C
53. 所處經營環境中的制度是否有助於核心能力之建立  
Operation system benefits core competences establishing  
A  B  C
54. 所處產業的政府政策與獎勵制度是否有利於公司的營運  
Government policies and award system benefit enterprises operation  
A  B  C
55. 所處市場是否仍擁有很大的獲利空間  
The market still has good margin of profit  
A  B  C
56. 所處市場相較於其他產業是否具吸引力 (如進入障礙高..等)  
The market is more attractive than other markets ( ex. High entrance barrier, etc.)  
A  B  C
57. 是否進行垂直整合  
Processing vertical integration  
A  B  C
- 路徑  
Path
58. 針對特定問題是否常參考過去的解決模式  
Referring historical problem solving pattern for specific problem  
A  B  C

59. 目前經營之狀況是否為過去決策的結果  
The operation condition is resulted by historical decisions  
A B C
60. 擬定策略是否常受過去成功或失敗經驗的影響及限制  
Historical success or failure experiences has major effect and limit in strategies set  
A B C
61. 是否持續發展過去成功的產品或服務  
Continously develop historically successful products or services  
A B C
62. 是否累積過去的成功經驗在未來加以應用  
In use of accumulating historically successful experiences for future  
A B C
63. 是否持續進行技術研發，當技術機會出現時可以快速採用  
Continuously process R & D and adapt it when skill chance appear  
A B C

### 三、績效評估 Performance Evaluation

與同業相較在A、B、C時期績效變動情形。

Compare performance with competitors during period A、B、C.

績效高低表示法 Performance value

low high

Please mark it according the value compares with competitors from left-low, right-high.

| 時期                          | A   | B   | C   |
|-----------------------------|---|---|---|
| 1. 營業額(Revenue)             | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 2. 淨利 (Net Profit)          | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 3. 投資報酬 (ROI)               | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 4. 研發投資比 (R&D/I)            | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |
| 5. 學習營收比 (Learning/Revenue) | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> | <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> |

自我在A、B、C時期績效變動情形依數值自小到大1、2、3表示。(數目1代表數值最低，數目3代表數值最高.)

Compare performance to oneself among periods.

Please write figure 1、2、3 represents vaule in periods from low to high

| 時期                           | A                        | B                        | C                        |
|------------------------------|--------------------------|--------------------------|--------------------------|
| 6. 營業額(Revenue)              | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 7. 淨利 (Net Profit)           | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 8. 投資報酬 (ROI)                | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 9. 研發投資比 (R&D/I)             | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |
| 10. 學習營收比 (Learning/Revenue) | <input type="checkbox"/> | <input type="checkbox"/> | <input type="checkbox"/> |