

**Asia-Pacific
Economic Cooperation**

**Human Resource Management Symposium
on SMEs, Volume 1**

APEC Human Resource Development Working Group

October 1999

CONTENTS

Date: 10/30, 1999

Venue A : International Conference Hall

Venue B : 1106 Conference Room

Keynote Address

- HRM: What Is Our Value-added Contribution to Business Competitiveness?** i
Arthur Yeung

VenueA Topic I: Globalizing HRM for SMEs

- A1-1. Linkages Between Local SMEs and Foreign Firms in the Economies Affected by the Asian Financial Crisis: The Cases of Korea, Malaysia and Thailand** A1-1
Philippe Regnier
- A1-2. The Asian Way of Hiring: A Cross-National Comparison** A1-15
Y. Paul Huo and Jason Heh Huang and Nancy K. Napier
- A1-3. Scale of Operations, Human Resource System and Firm Performance in East and Southeast Asia** A1-39
John J. Lawler and Shyh-Jer Chen and Johnngseok Bae

Topic II: Expatriation

- A2-1. The Prediction of Overseas Adjustment and Commitment of Expatriates Working at the Company's Subsidiaries of the Chinese Taipei in Mainland China** A2-1
Sheng-Ying Lii
- A2-2. High Level Management Development Strategy for Small and Medium Enterprise Investment of the Chinese Taipei in Mainland China** A2-21
Yuan-Ta Ko
- A2-3. The Business Strategy with the Tactics of T&D in SME - A Case Study in Service Industry** A2-31
I-Heng Chen and Chin-Kang Jen

Topic III: Enhancing Organizational Competences through HRM in SMEs (?)

- A3-1. Enhancing Organizational Competence through HRM Practices in SMEs: A Quantitative Analysis in APEC Region** A3-1
Stephen Yiu and Eleanor Cheung

- A3-2. A Comparative Study of President's Vocational Interests on Corporate Strategy, Organizational Structure and Performance Between Japanese Venture Companies and SME's in Chinese Taipei** **A3-11**
Hirohisa Nagai
- A3-3. An Organizational Citizenship Behaviors (OCB) Model and SMEs Employees' OCB** **A3-27**
Hun Chu and Jaebok Kim

Venue B Topic I : HRM of SMEs in Service Industries

- B1-1. The Regular and Part-time Manpower Planning for a Firm to Offer Information Services** **B1-1**
Chaug-Ing Hsu and Huei-Ju Huang
- B1-2. The Challenges and the Opportunities of E-commerce and International SMEs: Implications for HRM in APEC** **B1-21**
Chris Hall
- B1-3. Temporary Employment in US Small and Medium Enterprises** **B1-45**
Jyh-Jer Roger Ko

Topic II: HR Development

- B2-1. Training Practices and Their Effectiveness: The Experience of Small and Medium-size Enterprises in Chinese Taipei** **B2-1**
Tung-Chun Huang
- B2-2. Research of Core Competence for R&D Persons at IC Companies in Chinese Taipei** **B2-13**
Jon-Chao Hong and Ai-Ching Tseng
- B2-3. Malaysia's Financial Crisis and Contraction in Human Resource: Policies and Lessons for SMIs** **B2-27**
Rujhan Mustafa

Topic III: Enhancing Organizational Competences through HRM in SMEs (?)

- B3-1. Internal Capabilities, External Linkages, and Organizational Performance: A Study on Technology-based Korean Ventures** **B3-1**
Choonwoo Lee and Kyungmook Lee
- B3-2. The Role of Ethical Decision Making Styles in Judgments of Ethical OD Consulting Behavior** **B3-27**
Louis P. White
- B3-3. The Behavior and Mechanism Discussion of Intelligence- Integration in Small and Medium-sized Enterprises** **B3-43**
Zhou Zhen and Luo Jin Lian and Zhang Yi

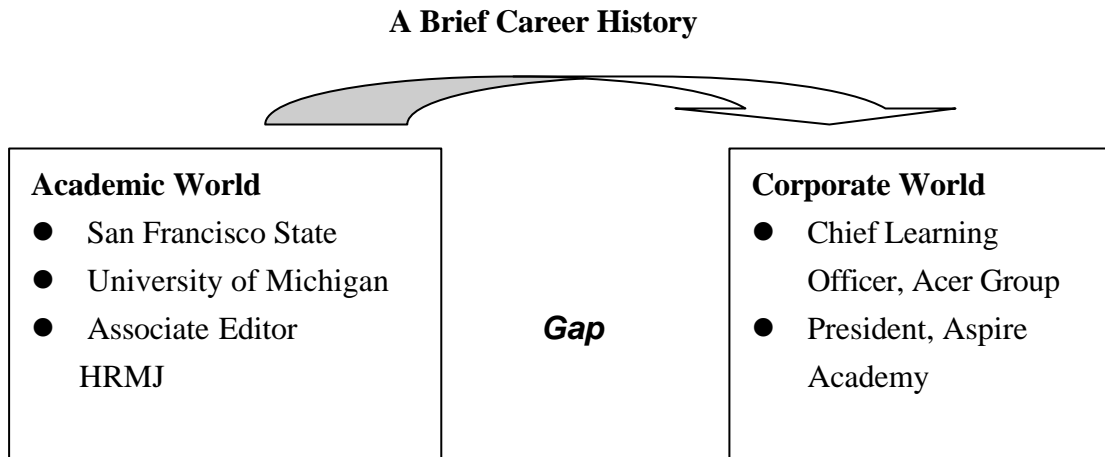
KEYNOTE ADDRESS

**HR MANAGEMENT: WHAT IS OUR VALUE-ADDED
CONTRIBUTION TO BUSINESS COMPETITIVENESS?**

Arthur Yeung

President, Aspire Academy (Chinese Taipei)

HR MANAGEMENT: WHAT IS OUR VALUE-ADDED CONTRIBUTION TO BUSINESS COMPETITIVENESS?



How is HR Being Advocated in Academic World?

THEORETICAL ARGUMENT:

- 80's: Linking HR with business strategies
 - Key advocates: Noel Tichy, Jim Walker, Lee Dyer
- 90's: People as source of sustainable competitive advantage
 - Key advocates: Jeffrey Pfeffer, Dave Ulrich, Mark Huselid

EMPIRICAL SUPPORT:

- Relationship between HR practices and financial performance
 - **Industry specific: Arthur (1994); MacDuffie & Krafcik (1992)**
 - **US companies: Huselid's research, US Department of Labor**
- Support for People-Customer-Shareholder Interrelationship
 - **Sears (5% --> 1.3% --> 0.4%)**
 - **Nortel, Service Master, American Express, AT&T, Eastman Kodak, Taco Bell, MCI**



EMPLOYEES

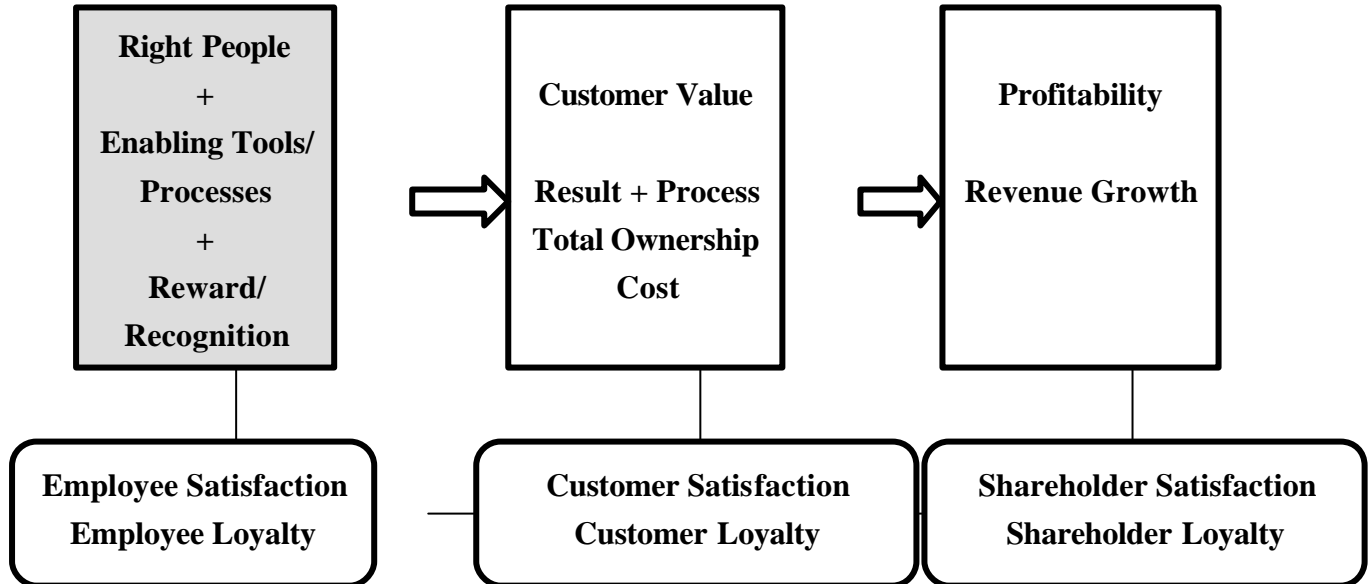
EMPLOYEES

SHAREHOLDERS

People-Customers-Shareholders Chain

SHAREHOLDERS

CUSTOMERS



How is HR Generally Perceived in Corporate World?

- A staff function that takes care of operational HR practices and administrative issues
- A function that is disconnected from business need
- A cost center where resources can be managed more efficiently
- A department that can be outsourced
- A department that creates a lot of paperwork

“TAKING ON THE LAST BUREAUCRACY”

Thomas Stewart, Fortune

January 15, 1996

Key argument: HR function should be abolished

- 80% of HR work is routine administrative tasks that can (and should) be either



outsourced or automated (payroll, benefits administrative, recruiting, training)

- Strategic HR redistributes to line managers and other strategic functions

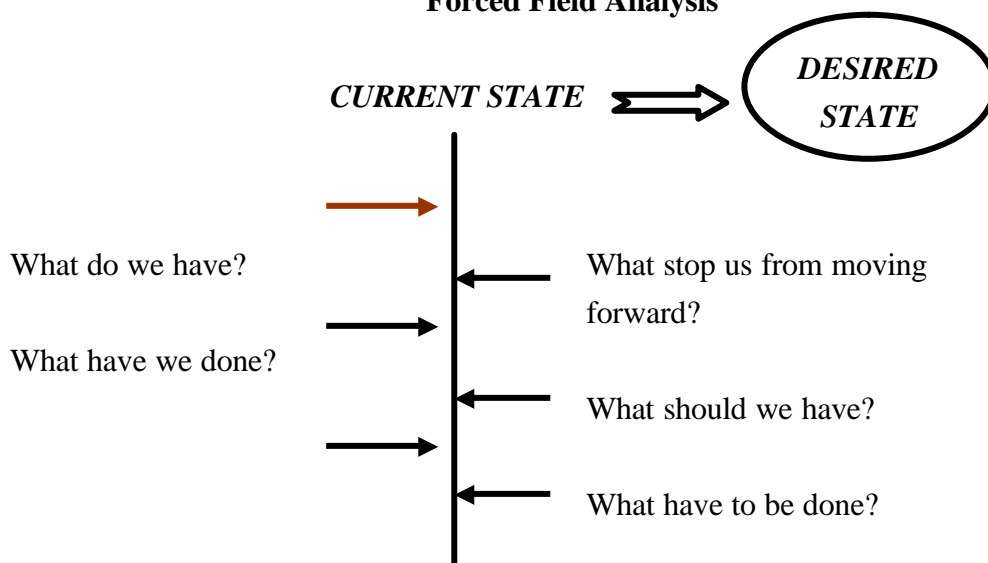
Why??

- HR is disconnected with business needs
- HR's ability to reinvent itself is doubtful

Why the Gap???

- | | | |
|--|---|--|
| <ul style="list-style-type: none"> ● Management philosophy of top management/ business owner
→ What really matter? ● Time horizon:
Survival/opportunistic mode
vs. sustainable success |  | <p><i>Expectation
and opportunities
for HR</i></p> |
| <ul style="list-style-type: none"> ● Competencies of HR professionals ● Mindset of HR professionals |  | <p><i>Credibility of
HR professionals</i></p> |

Forced Field Analysis





Suggestions for Enhancing the Value-Added Contribution of HRM

1. Amplifying and reinforcing what we know

- ? Popularize the research findings that demonstrate the relationship between HR and business success (Translation may be needed)
- ? Continue similar research in APEC business environment, especially Asian societies
- ? Track success stories and case studies
- ? Form Clearing House

2. Change the mindset of top management/ business owners

- ? “Leaders developing leaders”-- Organize CEO Forums so that they can learn from more progressive CEOs
- ? Offer “Strategic HR Program for Senior Line Executives”
- ? Involve CEOs in HR Partnership (e.g., Asian Strategic HR Partnership)

3. Facilitate the competency migration of HR professionals

- ? Form HR support and benchmarking group (e.g., Asian Pacific HR Partnership, Asian Strategic HR Partnership)
- ? Offer systematic HR program to help HR professionals to be more strategic
- ? Provide HR consulting and coaching services for HR professionals that need assistance
- ? Modify the curriculum of university education to reflect the changing nature of HR

Summary

1. In the last 2 decades, HR researchers have made significant progress in demonstrating the strategic roles of HRM (both theoretically and empirically)
2. However, to turn our knowledge into real business contribution, more systematic efforts are required

3. By working together, we can make a difference!

**LINKAGES BETWEEN LOCAL SMEs AND FOREIGN FIRMS
IN THE ECONOMIES AFFECTED BY THE ASIAN FINANCIAL
CRISIS :THE CASES OF KOREA, MALAYSIA AND THAILAND**

Philippe Regnier

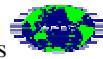
Modern Asia Research Centre

(GIIS, GIDS, University of Genva, Switzerland)

and

SASIN Graduate Institute of Business Administration

Chulalongkorn University (Thailand)



**LINKAGES BETWEEN LOCAL SMEs AND FOREIGN FIRMS
IN THE ECONOMIES AFFECTED BY THE ASIAN FINANCIAL CRISIS :
THE CASES OF KOREA, MALAYSIA AND THAILAND**

ABSTRACT

A stimulating but theoretical hypothesis could propose that the more internationalized local SMEs were before July 1997, the more resilient they might have been to the East Asian Crisis, especially compared with the purely domestic market oriented SMEs.

Based on a SME survey conducted for UNCTAD in Korea, Malaysia, and Thailand during the first semester of 1999, the above hypothesis was tested in the case of local SMEs linked to foreign affiliates:

1. The export-oriented SMEs have been generally more resilient than the non-internationalized SEMs, which have been dramatically affected by the sharp decline of domestic demand.
2. Only a small percentage of those SMES linked to foreign affiliates (through subcontracting or other contractual arrangement) have been able to sustain the crisis better than expected. There are many qualitative data research problems to be addressed before being able to be more specific and focused.
3. An even smaller proportion of those SMEs financially linked to foreign partners (through direct FDI inflows and joint ventures) have been particularly resilient. Although small entrepreneurs do welcome in principle more FDI for a prompt recovery of the whole national economy, a vast majority of SMEs prefer to remain locally family owned and are not prepared to open up their equity to foreigners. In times of rising globalization pressure, it remains to be seen (a) whether domestic oriented SMEs or internationalizing SEMs are better suited to the economic and social needs of the economies affected by the recent crisis, and (b) how the two approaches can be reconciliated considering that only a minority of SMEs are able to expand overseas.

Among various factors, the internationalization of SMEs has to cope with various HRD constraints and weaknesses. This is particularly true in the case of Thailand. A crux of human resource development for Thai SMEs is the way national competitiveness can be built by the learning process of management and the upgrading of technology and know-how. Theoretically, learning to master the management and improving of self-technology are important factors for Thai SMEs' capability to produce and export goods and services up to international standards, quality, and price wise. Thus, the country will be able to gain export market shares in order to sustain the currently timid economic recovery. Scientific and technological education, R&D, and vocational skills training are thus of central concern in the drive toward increased competitiveness for SMEs, which was already declining during the 1995-1996 before the crisis.

However, based on recent surveys, there are evidences of improperly developed and implemented public policy with the result of major weaknesses in HRD for most Thai SMEs such as:



- Shortage of graduates in technical subject-Shortage of technicians(blue collar workers)-
Low primary and secondary education of workers
- Availability and quality of vocational training programs Since late 1998, a new SME government strategy during 1999-2003 is being developed for the first time in Thailand, but it remains to be seen how government can come up with appropriate and concrete actions.
- The 1999-2003 target to strengthen 8,400 exiting SMEs and to cratenother 24,000 SMEs seems too ambitiuos?
- For the moment, with the help of Miyazawa plan funding, the Department of Industry Promotion under the MOI has created the SME institute and two the Automotive and Electronic Institutes. This came in addition to many fragmented, uncoordinated, and non-evaluated training programs in existance so far.
- Two of the most original instruments are (a) an international support mechanism for securing manpower for SMEs and (b) the creation of a standardized skill certificate in cooperation with the private sector.
- The biggest controversy is the proposal of higher education privatization. Doesm it mean that reduced public spending will concentrate more on primary and secondary education and vocational training in the future?

THEORETICAL INTRODUCTION

1. As mentioned already in the famous 1993 World Bank report on the so called «East Asian economic miracle » the internationalization of the East Asian emerging economies has progressed in rather spectacular terms in 1980-1996.

However, the degree of global interdependence between a such rapid growth and the inflows/outflows of foreign investment have become a very controverted issue since the outbreak of the East Asian financial crisis of 1997-98 (see UNCTAD World Investment Report, Geneva, 1998).

2. In order to remedy some of the main causes of the crisis, structural corporate and financial reforms are being introduced in the most affected economies of East Asia. They are targeting the necessary reforms of the domestic conglomerates and other big scale enterprises.

Whether already widely or less opened to foreign direct investment (FDI) before the crisis, those economies are requested to review the role of FDI as a potentially important contributor to the ongoing restructuring process. In this approach, FDI is envisaged as a strong instrument of globalization of the local firms, leading to the possible diminution of corporate and financial vulnerability vis-a-vis fluctuating domestic and regional markets.

3. The scale and degree of internationalization of the conglomerates and other big firms have been widely studied before the crisis, particularly in the four Asian dragons and neighbour emerging economies (such as Indonesia, Malaysia or Thailand). The restructuring contribution of FDI is already being envisaged for a number of key firms in countries such as Korea and Thailand.

On the contrary, indepth knowledge of the East Asian SME sector has remained extremely scarce (except in Japan) until the crisis. This is also true for the limited number of internationalized SMEs in the East Asian emerging economies.

4. Therefore, even if SMEs represent the vast majority of East Asian existing firms and are responsible for the bulk of employment, the impact of the crisis on this category of firms has been addressed - neither politically nor economically and financially - at least until the last quarter of 1998.

It is being realized only very recently that local SMEs have been primarily responsible for the dramatic rise of unemployment: some SMEs went simply bankrupt, many others reduced their overall activity and downsized their labour force in the course of 1998, and numerous self-employed activities were either temporarily frozen or disappeared.

5. As already mentioned under section 3, the existing knowledge on the relationship between local SMEs and foreign investment (FDI in particular) in the East Asian emerging economies has been very limited until the crisis.



Even if the domestic and external market scene was primarily dominated by big scale indigeneous and foreign firms, it can be yet assumed that a segment of the existing SMEs were directly or indirectly internationalized, and via (if indirectly) various forms of foreign firm affiliations, until the outbreak of the crisis.

6. This paper intends to propose a distinction between the few internationalized SMEs and the vast majority of them, working exclusively on the domestic market and through pure domestic channels.

Focusing on the first category of SMEs, a few central questions can be addressed such as **(a)** Has foreign investment (FDI in particular) played some role to mitigate the impact of the crisis on East Asian SMEs? **(b)** Is it true that those local SMEs having a relationship with foreign affiliates (through subcontracting or other contractual agreements) have better survived the crisis than the pure domestic-oriented SMEs?

7. A stimulating but pure theoretical hypothesis could be that the more integrated the local SMEs were vis-a-vis foreign affiliates, the more resilient they might have been to the 1997-98 crisis, and therefore potentially to new market fluctuations in the future as well.

If such an hypothesis would be demonstrated, then various forms of foreign investment could be further promoted locally by both the private and public sectors in order to restructure/forward linkages between local SMEs and foreign firms.

SURVEY METHODOLOGY

1. Definition

According to UNCTAD sources for instance (UNCTAD Division on Investment and Technology), FDI-linked SMEs can be defined as those SMEs having linkages with foreign affiliates. The involved linkages can have various forms such as contracting or subcontracting (components, parts, intermediary products, etc ...).

It can go as far as including the limited number of local SMEs having foreign equity in one form or an other together with foreign partners.

2. Survey

This paper is based on brief SME surveys conducted between mid-January and mid-April 1999 in Korea, Malaysia and Thailand. There was almost no existing data on the subject before those brief surveys were initiated locally.

2.1. In Korea, a sample survey was conducted by Korea University with the help of the Korean Chamber of Commerce and Industry (KCCI). A questionnaire was sent to 300 SME members of KCCI. 33 SMEs have returned it, with most of them having answered all questions. Among the 33 responding SMEs, 16 have had a foreign affiliation of some kind (sub-contract, licensing, daughter company, etc...), and 17 SMEs did not have any kind of foreign affiliation.

2.2. In Malaysia, the sample survey has been derived from two sources. The first one relies on three national surveys carried in early and late 1998 and again in early 1999 by the Association of Chinese Chambers of Commerce and Industry of Malaysia (ACCCIM). The second source is based on a few direct surveys at SME sites conducted in February 1999 and meant to verify some of the results derived from the three ACCCIM surveys mentioned above.

In the ACCCIM surveys, the response was quite satisfactory. In the first two 1998 surveys, 130 and 113 enterprises replied out of a total of 600 questionnaires delivered nationally. In the early 1999 survey, 293 have replied out of 800 questionnaires. In all three surveys, over two thirds of the respondents are SMEs defined as enterprises employing not more than 150 workers and having a maximum turnover of RM 25 million.

2.3. In Thailand, a brief survey was initially conducted with the help of a questionnaire sent to 300 SMEs by the Faculty of Economics (Chulalongkorn University, Bangkok), with the help of the Ministry of Finance. But this first approach failed.

Then, 20 SMEs in three distinct manufacturing sectors having a strong foreign market exposure (textile and garment electrical and electronic products, automobile parts) were directly surveyed at the SME production site in March 1999. Among the surveyed SMEs, 13% of them practise some forms of subcontracting with foreign affiliates, and even a smaller proportion has some minority or majority direct foreign equity participation.

3. Central Research Questions

Based on the results of the three country sample surveys, this paper tries to answer three central questions (see Part 2: Tentative Conclusions).

The three central questions are:

Q1: Have local SMEs with a relatively strong export orientation experienced a weaker decrease of production and sales than SMEs with an exclusive domestic orientation ?

Q2: Have local SMEs linked to foreign firms in various forms such as assistance and subcontracting linkages (except direct investment and ownership linkages) been more resilient to the crisis than the vast majority of local SMEs not linked to foreign firms ?

Q3: Have local SMEs linked to FDI and some ownership participation of foreign investors been particularly resilient to the crisis ?

PART 1: CURRENT STATE OF SME NATIONAL DATA

Local SMEs are expected to have been affected by the financial crisis, and the financial and corporate sector reforms in particular (at least in Korea and Thailand) through direct and indirect channels interplaying at the same time.



Direct channels refer to: (a) an overall slowdown of the economic activity, (b) a strong financial crunch induced by foreign exchange and financial turbulences, (c) a strong and transitional depreciation of the national currency.

Indirect channels refer to: (d) business relations with domestic conglomerates (especially the chaebols in the Korean case) and other local big scale firms, (e) business relations with foreign affiliates and companies established in the country (including equity participation or ownership relations in some local SME cases), and (f) favorable/neutral/or unfavorable government policy towards local SMEs.

This paper is essentially interested to assess the validity of one of the three indirect channels, which is mentioned above under (e).

KOREA

First, manufacturing SMEs have suffered far more from the crisis in 1998 and early 1999 than non manufacturing SMEs on the one hand, and than manufacturing/and non manufacturing big firms on the other hand. Compared to 11,589 SME bankruptcies in 1996 (7 only for big firms), the figure has sharply raised to 17,168 in 1997 (58 big firms) and to 22,828 in 1998 (39 big firms).

Second, manufacturing SMEs operating in light industries have been even more affected by the crisis, than those involved in heavy and chemical productions.

Third, the very substantial contraction of SME manufacturing production and the double multiplication of the SME bankruptcy ratio have not been accompanied by a strong contraction of SME exports, which has been even much slower than the overall export contraction of the whole economy. Therefore, it can be said that SMEs have reacted more flexibly to the crisis and to the transitory currency depreciation than big firms, as far export performance is concerned. As a result, the share of SMEs in Korea's total trade has been expanding at least marginally from 41,8 % in 1996 to 42,6% in 1998 (and possibly to 45,7 % in 1999 based on the first months of the year!).

Fourth, even though national production seems to recover gradually in the first months of 1999, its dynamics has not been restored sufficiently yet, to have any significant positive impact on the production of manufacturing SMEs.

MALAYSIA

The financial crisis and the specific protectionist measures taken henceforth (contrary to Korea and Thailand) have affected most enterprises. On the one hand, SMEs are no exception in the sense that they have badly felt the contraction of the domestic market, the shrink in credit available and the devaluation of the ringgit (at least until its fixed rate pegging to the US dollar since autumn 1998). On the other hand, there has been also some other factors at play such as overdependence on domestic market exclusively (for over two thirds of SMEs), strong price dependence on raw material and component imports (affected by a devaluated ringgit and then fixed peg), uneffectivity of a new 10 bank syndicated loan scheme

initiated by the government and supposed to assist SMEs facing credit shrunk and high interest rates.

Since late 1998, the expansionary budget implemented by the government has produced an overall positive impact on the economy. However, this is for the moment a short term result, and its stimulating downstream effect on local SMEs is still marginally felt, though business plans of SMEs tend to be less gloomy for 28,7% of them against 14% only in the course of 1998. Yet, 60% of all surveyed SMEs are still predicting worse business performance in early 1999, against 53% early 1998 and 81% by the end of the same year.

THAILAND

The last SME survey conducted by the Ministry of Industry covers the period from September 1996 to September 1997. 94,5% of manufacturing SMEs are fully Thai-owned, while 5.5.% are joint-ventures with foreign investors.

The crisis has been initially private-driven and much linked to the overall mismanagement of the big financial institutions. SMEs have been particularly affected later on in 1998, when the crisis peaked and extended also to the overall real sector. So far, there is no data on the impact of the crisis on this category of enterprises, which were yet responsible for about two thirds of the total manufacturing output in 1996.

This is of little surprise as the government has failed in the past to give SMEs a right place in its macro-economic and industrial policies. In addition, a campaign to help local SMEs has gained momentum only since the fourth quarter of 1998, and some tentative supportive measures have only been announced since early 1999. Various public and private financial institutions are supposed to take the lead in extending preferential loans of Bt 52 billions to existing and newly created SMEs in the course of 1999.

PART 2: ME SAMPLE SURVEYS AND RESEARCH RESULTS

The following sections try to answer the three central questions Q1, Q2 and Q3 presented in the survey methodology.

However, the answers can be only assimilated to tentative conclusions at least for two reasons.

First, available data dealing with the impacts of the financial crisis on the real economy is still extremely scarce, and even more rare when it comes to the direct and indirect effects on local SMEs. Second, the sample SME surveys conducted in the three countries studied were very limited in scope and also in duration (January-April 1999).

The following research results do invite for wider and more in depth investigations.



Q1: Have local SMEs with a relatively strong export orientation experienced a weaker decrease of production and sales than SMEs with an exclusive domestic orientation ?

The answer is positive in the three countries under study.

Empirical data derived from the sample surveys tends to show **(a)** that the strong depreciation of the national currency had initially improved the international competitiveness of some but not all SME products, and **(b)** that the expansion of exports combined or not with preferential credit facilities (if and when put in place by government) had a positive impact on their sales and had compensated the decline of local demand, at least to a certain extend.

In the Korean sample, a trend could be identified: the stronger the export-orientation of the SME was initially, the more positive development in sales was experienced in 1998. In a number of cases, it cushioned fully or even more the downturn of domestic demand during the same period. In that respect, local exporting SMEs were relatively more efficient than big firms in adapting to new economic environments (such as drastic exchange rate fluctuations) so rapidly induced by the severity of the crisis.

In the Thai sample, it is interesting to note that most SMEs affiliated and non affiliated to foreign firms in the electric and electronic industry are export oriented, and that both categories have experienced positive effects derived from the sharp favourable change in the exchange rate. But a distinction between the two categories has to be made in the textile and garment sector, where all non-foreign affiliated SMEs surveyed have been less resilient to the crisis than the affiliated ones.

In the more specific Malaysian macro-economic context, both the ratios of SMEs exclusively export-oriented, and of SMEs working for export and domestic markets, have declined from 7% to 4,6%, and from 29% to 20,4% respectively. Due to the crisis but also to the protectionist financial regulations decided against foreign investors in September 1998, there is inbetween early 1998 and early 1999 an 11% increase in the number of SMEs working for the domestic market only.

The relative export performance of local SMEs during the crisis is not well enough documented for establishing a strong correlation between the totality or a segment of the local exporting SMEs and their direct or indirect export channels. Those may be indirectly facilitated - at least in some cases - by the export channels of foreign transnational corporations (TNCs) and foreign trading houses.

Before the crisis, a number of limited empirical studies (conducted for example by the Geneva-based International Trade Centre UNCTAD/WTO) tend to show that most East Asian exporting SMEs relied primarily on direct export channels. This is particularly true of the most export performing SMEs in the region, such as the SMEs in Chinese Taipei for instance.

Q2: Have local SMEs linked to foreign firms in various forms such as assistance and subcontracting linkages (except direct investment and ownership linkages) been more resilient to the crisis than the vast majority of local SMEs not linked to foreign firms?

The answer is much less clear than under the previous question. There seems to be some rather positive but very indirect impact, which is not well documented and precisely measured in quantitative and qualitative terms (at least from a SME viewpoint). It must be noted here that the foreign affiliate viewpoint has not been surveyed in the sample.

The Korean sample survey shows that a foreign affiliation did not materialize so much in the resilience of SME business performance during the crisis, even though it may have provided a certain degree of psychological security to some foreign-affiliated SMEs but not to all of them (depending on other variables such as the sector or sub-sector of activity, much or less affected by declining demand domestically and regionally). For example, an increase of sales during the crisis was experienced by a relatively similar proportion of foreign affiliated SMEs and non-foreign affiliated ones.

In the Thai sample survey, 12,9% of the interviewed SMEs practise subcontracting with foreign affiliates. The number one type of support received from foreign affiliates has been a relatively guaranteed and continued access to export markets.

Q3: Have local SMEs linked to FDI and some foreign investors' ownership participation been particularly resilient to the crisis?

First, some distinctions have to be made between some East Asian economies fairly opened to FDI before the crisis (such as Malaysia and Thailand) and some economies which have traditionally relied much less on FDI (such as Korea).

Second, even in the economies of the first category, data has shown that FDI has concentrated in certain sectors and primarily in the big scale industry (in domestic big firms or in majority/wholly owned foreign enterprises). The number of local manufacturing SMEs linked to FDI is still very limited and no complete, systematic and up-dated data was available before the outbreak of the crisis.

Third, considering the perceived importance of foreign investment even more since the outbreak of the crisis, most locally surveyed SMEs welcome FDI and foreign ownership participation, on the one hand. But on the other hand, two factors go in the opposite direction: **(a)** due to the small size of their paid-in capital, most SME owners (especially the numerous family-based ones) are rather reluctant to provide foreign investors with the possibility of controlling the management of their firm; **(b)** they may accept to limit the foreign ownership participation to a manageable minimum (which may be revealed as unattractive to the foreign investor) or even resist the psychologically perceived 'selling out' of the SME to foreign interests.

Interestingly enough, most SME owners surveyed **in the Korean case** are primarily interested in FDI for one single reason: some transfer of advanced management skills. Supply of foreign exchange, transfer of advanced technology, linkage to foreign partners in international markets come much behind as second bests in their answers.



In the Malaysian survey, there is no clear correlation between SME export resilience and foreign firm affiliation: some SMEs fully affiliated to Japanese investors have improved their export performance due to the weak ringgit, but at the same time they have to digest a sharp cost increase in the imports of raw materials and components (therefore, they are trying to outsource imports not from the USA any more but from neighbour East Asian economies). Some other SMEs fully owned by US foreign investors - but working primarily for the domestic market - have faced such drastic cost rises in imports and such sales drop, that they have closed some of their local production units and are trying to restructure and disinvest somehow, looking not for sole ownership anymore but for some form of joint venture with local partners. On the contrary, some 100% Malaysian owned exporting SMEs (less than 4% of total SMEs) have experienced only positive impacts from the crisis, thanks to a weakened ringgit. They have been increasing production at full steam, including expanding factory size and recruitment of additional employees.

There is some form of SME resistance to increased FDI ownership, which is specific to Malaysia in addition to the arguments presented in the above answer to Q3. Pro-Bumiputera New Economic Policy affiliated SMEs tend to be more domestic market oriented and somehow protected from real market conditions, in comparison to local Chinese or Indian SMEs, which tend to be far more internationalized. The anti-foreign campaign led by the Prime Minister since the outbreak of the crisis may also have some impact in SME behaviours toward the supposed dangers of FDI.

In the Thai sample survey, the foreign affiliated SMEs (5,5% of the total SMEs in manufacturing) tend to survive the crisis better than the ones without such an affiliation. The more foreign equity participation is involved in a local SME, the more likely assistance has been already provided or is envisaged from the foreign partners (through access to export market, technical assistance, loans and capital injection, etc...).

(a) The surveyed foreign affiliated SMEs in textile and garment are almost 100% foreign owned and totally export oriented: these two characteristics may explain alone why they have been much more resilient than all the others (except one non-foreign-affiliated SME surveyed, but already much export oriented).

(b) In the electrical and electronic sector, only one SME surveyed having a rather high foreign equity participation (49%) has been particularly resilient, thanks not only to classical technology assistance for export market access, but also to even more capital injection and financial participation during the peak of the crisis. The other foreign affiliated SMEs surveyed have all experienced both positive and negative effects of the crisis, even though their foreign affiliation is different from one case to the other (one SME is a family Thai-Singaporean venture, one has a licensing agreement, one has a 10% foreign equity).

(c) In the automobile parts sector, only one surveyed SME, producing junctions of break wires for both export and domestic markets, has over 51% of foreign equity. This SME had to reduce output and employment due to a sharp decrease in sales and profit, but the foreign partner has been providing some export market and cheap loan assistance. The other surveyed SMEs are non-foreign affiliated: all of them have mostly experienced negative

impacts of the crisis, even for the majority of them being involved both on domestic and export markets.

TENTATIVE CONCLUSIONS

C.1.

Combining the results to Q1, Q2 and Q3, the country surveys tend to indicate that **(a)** especially the export orientation of local SMEs and **(b)** less the foreign affiliation of local SMEs had a strong impact in terms of SME business resilience to the crisis.

The more strongly linked to export markets local SMEs were before the crisis, the more resilient they have been so far, whereas local SMEs relying both on export and domestic markets have generally performed less well (but still better than those local SMEs working for the sole domestic market).

Considering the various types and degrees of foreign affiliation, SMEs having a high ratio of direct foreign equity participation (49 % and over) before the crisis tend to be the most resilient ones during the crisis, due to various forms of assistance from the foreign partner, including additional capital injection and/or preferential loans in some cases. However, this rule proves to be not true for all SMEs belonging to this category, not even for those wholly or almost wholly foreign owned.

C.2.

Local SMEs with no foreign participation welcome in principle some form of FDI-affiliation, but want generally to limit it to a minimum. Local SMEs with some foreign ownership do not want - and despite the current crisis - any higher foreign contribution into their firm.

In both situations, the fear of losing management control is very central, for tangible financial and immaterial reasons. This refers to the psychological and sociological profile of the vast majority of local SME entrepreneurs, who generally lead family-based SMEs and lack a proper long-term industrial, marketing and management strategy.

In addition, despite the short term negative effects of the crisis, the financial situation of most local SMEs has not yet reached a desperate bottom line. Most of them are struggling with various downsizing constraints (and are directly responsible for the rapid rise in unemployment) but not to an extent of closing down; a good number of them even sound rather confident about their medium-term perspectives in 1999-2001.

The number of bankruptcies in 1998 has more than doubled compared to the year 1996 (for example, in Thailand), but the direct and indirect real market fluctuations derived from the financial crisis may have primarily hit the most vulnerable domestic market-oriented SMEs.

C.3.

The small segment of total FDI inflows attracted by the local SME sector has



developed gradually during the 1980s and 1990s until the outbreak of the 1997-98 crisis. Though no precise data is available, it originated more from the Asian region (especially in terms of production delocalization from big and SME firms in Japan and some East Asian NIEs such as Korea and Chinese Taipei) than from Western Europe and Northern America.

Newly established and wholly foreign owned SMEs were created locally in a majority of such FDI cases. In other cases, FDI inflows have of course not targeted the most vulnerable and losing out SMEs (even before the crisis), but on the contrary the most promising ones, if they were psychologically and financially ready to welcome some foreign participation.

It may be concluded that any sound anti-crisis policy targeting the domestic-oriented SMEs mostly affected by the financial turbulence should know how to pick up the winners or the most resilient ones. Such SMEs should be encouraged to meet foreign affiliates and partners, who are ready to join their up-grading efforts in business, management and internationalization. The development of sustainable linkages between these SMEs and foreign partners would certainly contribute to their long-term development, which has been extremely neglected so far. Directly and indirectly, such sustainable linkages would also contribute to the overall corporate reform and real market recovery in the East Asian economies mostly affected by the recent crisis. The external and structural vulnerability of these economies could then be reduced overtime, at least in relative terms.

REFERENCES

- Asia-Pacific Economic Cooperation (APEC) (1994), The APEC Survey on SMEs 1994, Singapore, APEC Secretariat
- BUCKLEY Peter J. et al. (eds) (1997), International Technology Transfer by Small and Medium-Sized Enterprises, London, Macmillan
- FUJITA Masataka (1998), The Transnational Activities of Small and Medium-Sized Enterprises, New York and Dordrecht, Kluwer Academic Publishers
- OECD (1997), Globalisation and Small and Medium Enterprises, Volume 1: Synthesis Report, Paris, OECD Publications
- REGNIER Philippe (1998), Dynamics of Small Enterprise Development: State versus Market in the Asian Newly Industrializing Economies”, in Paul Cook, Colin Kirkpatrick and Frederick Nixson (eds), Privatization, Enterprise Development and Economic Reform: Experiences of Developing and Transitional Economies, Cheltenham and Northampton, Edward Elgar, 206-228
- REGNIER Philippe (1996), The Dynamic Asian Economies: Local Systems of SMEs and Internationalisation”, in OECD, Networks of Enterprises and Local Development, Paris, OECD Publications, Chapter 15, 225-232
- REGNIER Philippe (1994), Guidance Policies for SMEs in the Asian Newly Industrialised Economies”, in OECD, New Economic Partners: Dynamic Asian Economies and Central and Eastern European Countries, Paris, OECD Publications, 107-130
- UNCTAD (1999), Transnational Corporations, A Refereed Journal (published 3 times a year)
- UNCTAD (1998), Handbook on Foreign Direct Investment by SMEs
- UNCTAD (1998), The Financial Crisis in Asia and Foreign Direct Investment: An Assessment
- UNCTAD (1998), World Investment Report (annually)
- UNCTAD (1998), Trade and Development Report (annually)
- UNCTAD (1993), Small and Medium-sized Transnational Corporations: Role, Impact, and Policy Implications

**THE ASIAN WAY OF HIRING:
A CROSS-NATIONAL COMPARISON**

Y. Paul Huo

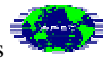
**School of Business and Public Administration
University of Puget Sound (USA)**

Jason Heh Huang

**Department of Business Management
College of Management
National Sun Yat-sen University (Chinese Taipei)**

Nancy K. Napier

**College of Business and Economics
Boise State University (USA)**



THE ASIAN WAY OF HIRING: A CROSS-NATIONAL COMPARISON

ABSTRACT

The rapid growth of the Asian economy prior to 1997 was partially attributed to the thriving small and medium-size enterprises in many Asian countries. The key to learn their secrets of success resides in a better understanding of the “Asian way” of managing human resources, particularly how they recruit talented new employees. With this purpose in mind, we analyzed the data on hiring practices gathered from nine different countries using the Best Practices (BP) Survey instrument. These nine countries include two clusters. The Asian cluster consists of Chinese Taipei, PRC, Indonesia, Japan, and South Korea. The North American cluster is made of three nations: United States, Canada, and Mexico. Hiring practices in Australia were also examined, as this country is geographically close to Far East yet has an Anglo-dominant culture. In contrast with the common belief that the recruiting practices are relatively uniform across different nations in comparison with other human resource subareas, we found significant cross-national differences in terms of recruiting criteria and procedures. Among all the ten items used in BP survey, only two were found to be universally important as they were consistently rated high for both "is now" and "should be" situations in almost all the nine countries. The other eight items reflected a high degree of culture-driven divergence and, for these items, we found significant gaps between "is now" and "should be" situations. Our results of data analysis also suggest that the Asian cluster is not as homogeneous as we expected in terms of the hiring criteria actually used.

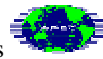


Selecting the most qualified persons to fill job vacancies seems to be a universal goal for both human resource and line managers around the world, as a mismatch between jobs and people in the first place could dramatically reduce the effectiveness of other HRM functions (Dunnette & Borman, 1979; Florkowski & Schuler, 1994; Mendenhall, 1987). However, few would expect the hiring practices used in different cultural environments to be the same. The success of some Asian economies has been partly attributed to the "Asian values," which emphasize thrift, hard working, family ties, and other time-honored virtues. Unfortunately, as researchers scramble to find explanations for the rapid expansion of the Asian economy before 1997 -- sometimes labeled as the "Asian miracle" -- little work has focused on the hiring practices commonly used in the Asia Pacific region, which could hold the key to understanding the secrets of success of Asian countries where small and mid-size enterprises have thrived for years.

Paucity of research in this subject area may have stemmed partially from a parochial orientation of conventional organization studies, which has been criticized as a major shortcoming of management research in North America (Boyacigilar & Nadler, 1991). Such a parochialism continued to drive the "mainstream" research even after HRM scholars gradually started to recognize the importance of strategic human resource management in the international context (Lengnick Hall & Lengnick Hall, 1988). Some researchers examined the human resource management issues from a

Paucity of research in this subject area may have stemmed partially from a parochial orientation of conventional organization studies, which has been criticized as a major shortcoming of management research in North America (Boyacigilar & Nadler, 1991). Such a parochialism continued to drive the "mainstream" research even after HRM scholars gradually started to recognize the importance of strategic human resource management in the international context (Lengnick Hall & Lengnick Hall, 1988). Some researchers examined the human resource management issues from a multinational enterprise's perspective and distinguished among various IHRM orientations (e.g., ethnocentric, polycentric, regiocentric, and global) in light of the extent to which key positions are filled by expatriates dispatched from the home country or recruits in the host countries (Adler & Ghadar, 1990; Bania, 1992; Dowling, Schuler, & Welch, 1994; Heenan & Perlmutter, 1979). In this vein of research, the focus of attention is still on the benefits and costs of various alternatives for either the entire multinational corporation or individual incumbents rather than the core characteristics of the recruiting system in each country or region (De Cieri & Dowling, 1999).

As we look into the Asian way of hiring, two fundamental questions have caught our attention. First, do significant differences exist between Asian countries and the rest of the world in terms of commonly used hiring practices? If so, what are these differences? Although few would expect human resource managers around the world to recruit new employees in the same way, it is reasonable to assume that certain practices are more ubiquitously used by organizations of various nationalities. Apparently, the degree of "ubiquity" characterizing each selection criterion is a critical issue that cannot be adequately addressed on the basis of pure theoretical arguments. Rather, it requires an empirical examination in the prevalence of each selection criterion



used in both Asia and the Western world.

The second question is whether people agree that there are some universally desirable selection criteria that can be used for recruiting new employees in any continent. This question would differ little from the first one if all selection criteria practically used in all organizations were also viewed as highly desirable by all organizational members. We know, however, by observing real organizations that such a consensus rarely exists; no matter how judiciously the personnel selection criteria were set by the human resource department, some employees would complain about the inequity caused by the hiring practices. Even in the most democratic organizations, personnel selection criteria are rarely set through a consensus generation process; more likely, they are a result of the trials and errors over the years, bound by legal requirements, and subject to many other institutional constraints. As such, the degree of "universality," or the extent to which a selection criterion is universally desirable, ought to be treated as a separate issue from ubiquity.

In this paper, we attempt to address these two issues by comparing the hiring practices in nine countries. Five of them are located in Asia, including Chinese Taipei, PRC, Indonesia, Japan, and South Korea. Three countries in North America, USA, Canada, and Mexico, were selected, too. These two clusters of countries may reveal a sharp contrast in hiring practices between two continents across the Pacific Ocean. In addition, we selected Australia as a middle-ground representative, as this country is geographically close to Asia Pacific region but has been known for its Anglo-dominant culture.

The fact that both developed countries and developing ones were included in our sample promises an interesting comparison, as IHRM practices in these two categories of nations could differ dramatically from each other (Napier & Vu, 1998). In general, small and medium enterprises thrive in developing countries while large multinational corporations tend to dominate the economies of developed ones. Similarities and dissimilarities of selection criteria that are either actually used or strongly preferred by employees in these places could, in our opinions, reveal valuable information about the convergence or divergence of personnel selection practices in either Asia or North America. The empirical study was part of a large-scale, multinational research project conducted by a consortium of international scholars with the purpose of identifying the "best" international human resource management practices (Von Glinow, 1993).

QUESTIONNAIRE DESIGN AND DATA COLLECTION

Data were gathered by more than twenty scholars from nine countries, using the Best Practices (BP) survey as the measure instrument. The idea of conducting a multiple-year, multinational project on HRM practices was conceived in 1990 by Mary Ann Von Glinow and her colleagues in North America. As a result of one year's worth of collective effort, a standardized questionnaire was developed for the purpose of making cross-national comparisons. Since then, this research consortium has grown into a team of over thirty international scholars (Teagarden et al., 1995).



Although the wording "best" was used for the sake of highlighting our intention to benchmark HRM practices globally, we did not presume that the same HRM practices could be uniformly applied in all countries or cultural environments. With this caveat in mind, members of the BP project team developed the questionnaire with a combination of deductive and inductive methods. A literature review was first conducted to identify important hiring-related factors that have been recognized by HRM researchers in the past. Based on the results of the literature review, we designed the draft of the questionnaire and used it to survey a small group of managers who attended executive education programs at two different universities in the U.S. As we conducted the pilot survey, the participants were encouraged to either suggest items that they considered important but were missing in the original questionnaire or identify items that they considered redundant or noncritical.

In the meantime, we consulted with several experts in the area of cross-national HRM research in order to obtain their feedback on the relevance of individual items. After gathering all the feedback we could solicit, the consortium members then reevaluated the suitability of each item. Some items were added, deleted, or consolidated before the final version was readied for the official survey.

At the conclusion of this evolutionary process, it became clear to us that HRM practitioners usually care about both the technical and social calibers when they screen the job candidates. The evaluation of technical skills has two aspects. First, recruiters want to find out whether the job candidate *is able to* or *has the potential* to meet the technical requirements. This aspect was addressed by two items in our survey:

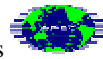
- A person's ability to perform the technical requirements of the job (Q1)
- A person's potential to do a good job, even if the person is not that good when they first start (Q8)

The second aspect concerns whether the technical skills are directly tested or inferred from the past job experience. Another two items address this issue:

- An employment test in which the person needs to demonstrate the skills (Q6)
- Proven work experience in a similar job (Q7)

Likewise, the social caliber of the job candidate may be assessed on the basis of either interpersonal or interorganizational skills. In the work place, a person who can mingle with other organizational members and fit into the organizational culture is usually preferred. Moreover, if the person is well connected to either internal or external constituencies, there would be a higher likelihood that he or she could easily assimilate with the task environment. This aspect is addressed by the following items:

- A person's ability to get along well with others already working here (Q3)
- How well the person will fit the company's values and ways of doing things (Q9)



-- Having the right connections (e.g., school, family, friends, region, government, etc.) (Q4)

Aside from the importance of various aspects of social caliber, another critical issue is how the employers actually *assess* a job candidate's social caliber. The assessment method could be used for screening the candidates and socializing insiders simultaneously (Sutton & Louis, 1987). We identified two major methods:

--A personal interview (Q2)

--Future co-workers' opinions about the person (Q10)

To be sure, these two methods may be used for assessing both technical and social skills. However, since technical skills can be reliably measured by many other means, in practice the major role played by these two factors is more likely social than technical (Guion, 1987).

Finally, most managers may hope that, once a job candidate is hired, he or she will stay with the organization long enough so that their investments on recruiting, training, and socializing this person may pay off. Although this factor is not directly related to either technical or social caliber, it could affect the total "yield" of a hire, which may be viewed as a special form of capital spending. Naturally, managers always care about whether the anticipated ROI during the life span of a piece of human asset could justify the amount of time and money invested up front. Thus, we added one more factor:

--The company's belief that the person will stay with the company (e.g., five years or longer) (Q5)

A five-point Likert scale, ranging from 1 (not at all) to 5 (to a very great extent) was used in grading the responses. One special feature of the BP survey is that respondents were asked to indicate the extent to which each one of these items affects the hiring decisions in their organizations in both "Is Now" and "Should Be" situations. Although we expected these two sets of responses to be correlated and both are subject to the influence of the national culture, we are convinced that the cultural impact on the "Is Now" condition is likely to be diluted by a large number of non-cultural factors, such as the past history of the organization, the industry structure, and the leadership style. By contrast, the "Should Be" condition is, theoretically, more susceptible to the impact of culture as it reflects organizational members' personal preferences. If we follow Hofstede's paradigm and define culture as "the collective programming of the mind which distinguishes the members of one human group from another" (Hofstede, 1980), it should not be surprising to find that people's preferences in this regard are heavily influenced by culture.

Although measuring organizational performance is not the main purpose of the BP project, we do believe that there is a positive relationship between the use of appropriate hiring practices and organizational effectiveness in general as perceived by



employees. For the purpose of measuring the perceived hiring effectiveness, we used three items:

- (a) The hiring practices help our company to have high-performing employees
- (b) The hiring practices help our company to have employees who are satisfied with their jobs
- (c) The hiring practices make a positive contribution to the overall effectiveness of the organization

These three items were also rated on a five-point Likert scale.

Results

Being aware of the potential systemic bias in the responses due to cultural differences, we decided not to directly compare the averaged item scores across nations. Instead, within each national/regional sample we merely identified three items with the highest ratings.

Comparison of the "Is Now" Conditions

Table 1 presents the means and standard deviations of the "Is Now" responses, with the three top-ranking items in bold face. The nine countries or regions covered in the data analysis include Australia (AUS), Canada (CAN), People's Republic of China (PRC), Indonesia (IND), Japan (JPN), South Korea (KOR), Mexico (MEX), Chinese Taipei (TWN), and the United States (USA). A quick glance at Table 1 reveals that two selection criteria stand out as the most commonly used ones in all settings. The first one is "a person's ability to perform the technical requirements of the job" (Q1) while the second one is "a personal interview" (Q2). The prevalence of Q1 should not be surprising as technical skills ought to be the ultimate yardstick of a person's qualification in a rational perspective. In fact, the more interesting finding is that Q1 was *not* among the top-three selection criteria actually used in Japan and Chinese Taipei. It probably reflects the predominance of non-technical criteria in these cultures, which will be discussed in greater detail later.

Insert Table 1 About Here

As an important personnel screening tool, job interview (Q2) was ranked among the top three factors in almost every country except PRC. Again, this fact indicates that few people would feel comfortable with making a job offer without seeing the candidate in person. Even in PRC, the relatively lower importance of Q2 may be due to practical difficulty rather than a deemphasis of personal acquaintance.

In the meantime, the other eight items seem to reflect significant cross-cultural differences, although a certain degree of clustering is also evident. For one thing, the

top three factors found in the people of Chinese Taipei and Japanese samples are identical. We think it is unlikely to be purely coincident. Rather, such a similarity may have reflected the cultural similarities, the intertwined histories in the past century, and close economic ties between these two countries. As a matter of fact, many industries in Chinese Taipei were started after World War II under the support of Japanese enterprises. Understandably, their human resource management systems were initially borrowed from Japan. The high importance of these three items (Q2, Q3, and Q8) also reflect the extra value placed on harmonious human relations by these two cultures.

Next to Q1 and Q2 in terms of prevalence of use is Q7, proven work experience in a similar job, which was ranked among top three by five countries. It is interesting to note that three of them are Anglo-culture countries (Australia, Canada, and the U.S.), although people in PRC also consider it very important.

Certain degrees of similarities were also found among other cultures, although the patterns of similarity are not very clear. For example, people in PRC, South Korea, and Indonesia seem to trust employment test (Q6) more than their counterparts in other nations do. Although the small sample size in most countries prevent us from confirming these similarities with full confidence, we do see potential effects of geographic proximity or cultural similarity on hiring practices in these countries or regions.

Comparison of the "Should Be" Conditions

Table 2 presents the means and standard deviations of "Should Be" ratings for the ten items in the nine countries. Overall, this table is similar to Table 1 only to the extent that Q1 and Q2 continue to be the most prevalent hiring criteria. The other eight items reflect varying patterns of similarities across different countries.

It is noteworthy that "a person's ability to perform the technical requirements of the job (Q1)" is ranked among top three "Should Be" conditions in *all* the nine nations, confirming the universal desirability of using technical skills as the selection criterion. As a "Should Be" condition, "a personal interview" (Q2) lost its top-three ranking status in Chinese Taipei and South Korea and continue to be out of the top-three category in PRC. Interestingly, all these three countries are located in East Asia. We should not infer from this finding that interpersonal relations are unimportant in these nations. Rather, it is more likely that managers in these countries have found other yardsticks to assess a person's non-technical characters, thereby making the use of interview less necessary.

Insert Table 2 About Here

Aside from Q1 and Q2, the eighth item, "a person's potential to do a good job" (Q8) is the third most prevalent "Should Be" factor in our multinational sample. It is



ranked as top three by four countries: PRC, Japan, South Korea, and Chinese Taipei. The "Asian flavor" is quite clear as all of them are located in Asia. In the meantime, since this item was ranked among top three only by respondents in Chinese Taipei and Japan for the "Is Now" condition, we can see a gap between ideal and reality in the other two countries; that is, this item is viewed as very important ideally but has not been treated as important in practice.

Other items are valued differently by countries in a way inconsistent with the "Is Now" conditions as well. For instance, a person's ability to get along well with others (Q3) is viewed as very important by South Korea, Chinese Taipei, and the U.S., but only in Chinese Taipei is it also considered one of the top three criteria in actually used hiring practices. Employment test (Q6) is among top-three criteria in PRC, Indonesia, and Mexico, but in our sample only PRC and Indonesia treat it as a top-three factor in practice. As mentioned earlier, "proven work experience" (Q7) was among the top-three criteria in five countries in light of "Is Now" condition, but it was not recognized as a top-three "Should Be" criterion in any country or region.

The ninth item (Q9), how well the person will fit the company's values and ways of doing things, was ranked among top three "Should Be" factors only by Australia and Canada, but neither country ranked it so high for "Is Now" situations.

It is also noteworthy that four items in the BP questionnaire were not ranked by any national subsample as top-three "Should Be" practices. These four items are: having the right connections (Q4), likelihood of staying in the company for the long haul (Q5), proven work experience in a similar job (Q7), and future coworkers' opinions about this person (Q10). All these factors are either relatively intangible or highly subjective. Understandably, even though they might affect the hiring decisions in practice, few people would suggest that they ought to be formally considered.

Comparison of Country Profiles

In order to make it easier to see the gap between "Is Now" and "Should Be" conditions, we also compiled a table that lists the top-three items on a nation-by-nation basis.

Insert Table 3 About Here

An interesting phenomenon that strikes us is, the "top three" profiles for Australia and Canada are identical. Apparently, this similarity can be attributed to the common cultural roots of these two nations as well as their historical ties with the British Commonwealth of Nations.

Table 3 also reflects the gap between reality and ideal in each nation. For instance, the actual hiring practices used in Japan seem to emphasize a person's potential and interpersonal skills, but the Japanese respondents did recognize the

importance of technical skills required by the job. That's why, although Q1 was not among their top-three "Is Now" factors, it was one of the top-three "Should Be" factors for recruiting. The commonality of Australian and Canadian "top-three" profiles also reflects a common gap between reality and ideal for these two nations. Specifically, proven work experience is an important selection criterion in these two nations in the "Is Now" situation. When it comes to the "Should Be" situation, however, a good fit with the company's values and ways of doing things becomes more crucial.

Likewise, in the case of Mexico, having the right personal connections is one of the top three hiring factors in practice, but the use of a more objective employment test is viewed as very desirable in a "Should Be" situation. A personal interview is a very crucial step in the actually used hiring procedure in Chinese Taipei, but people in Chinese Taipei respondents seem to believe that job-related technical skills ought to be a more important selection criterion.

Among other countries/regions, our Indonesian sample has shown a better match between reality and ideal -- the top three factors for the "Is Now" situation are also the top three for "Should Be" situation -- while the reality-ideal gaps for South Korea appear to be relatively large. One reason why these gaps deserve our attention is that they may point to the likely direction of change, or the trend, in a nation's prevalent hiring practices. For instance, although proven work experience is ranked by our U.S. respondents as one of the top three most important hiring factors, its position was replaced by the ability to get along with others already working here in the "Should Be" part. We should not be surprised if American human resource managers start to deemphasize the past work experience but give heavier weight to interpersonal skills in the future.

Effects of Recruiting Practices on Organizational Effectiveness

The last but not the least important question we try to answer is: Do hiring practices really matter? In other words, are those personnel selection criteria examined by us tied to the overall organizational performance? To address this issue, we did a multiple regression analysis with the three aforementioned measures of perceived effectiveness as the dependent variables. The results are shown in Table 4.

Insert Table 4 About Here

Although most factors are not statistically significant due to the inherent collinearity problem of using the five-point Likert scales, the F and R^2 values listed at the bottom of the table, reflecting the explained variation in the dependent variables, may still reveal useful information about the relative importance of hiring practices in affecting organizational effectiveness in each country. Overall, all samples yield significant F values for the three measures of hiring effectiveness.

In the meantime, hiring practices account for organizational effectiveness in



these nations by varying degrees. Since the sample sizes vary wildly across nations and smaller samples tend to yield larger R^2 values when everything else is equal, we have to use the F value and R^2 together to evaluate the power of these regression models. In light of these two indicators, Mexico, South Korea, and Chinese Taipei seem to demonstrate the highest impacts of hiring practices; that is, the relationship between hiring practices and perceived organizational effectiveness is clearest in these nations. Interestingly, Chinese Taipei and South Korea are two of the "four little tigers" in Asia while Mexico may be the new little tiger in North America. Although we do not have data gathered from two other little "tigers" in Asia (Hong Kong and Singapore), it seems likely that the best human resource management practices model would work best in those fast-growing, developing economies.

DISCUSSION

The empirical results of analyses generated from our multinational data set are more complicated than we expected and do not lend themselves to any coherent theoretical interpretations. As hypothesized at the beginning of this paper, if culture has any impact on recruiting practices, its impact is more likely manifested in the "Should Be" rather than "Is Now" conditions. Our empirical findings, however, do not seem to support this hypothesis. In fact, we suspect that the striking similarities among the U.S., Australia, and Canada in terms of "Is Now" conditions could be attributed to their common Anglo roots. Interestingly, the profile of Mexico differs from that of the U.S. or Canada despite the fact that it is also located in North America probably owing to its Hispanic cultural root.

Among Asian nations, the striking similarity between Japan and Chinese Taipei in terms of "Is Now" conditions may reflect the close historical and cultural ties between these two nations in the past one hundred years. Even when we compare the "Should Be" conditions, the similarities among Chinese Taipei, Japan, and South Korea are still impressive. However, the situation at the People's Republic of China seems to be one of a kind; its profile appears to be positioned somewhere between Asia and North America -- which may be attributed to a combination of fifty years of implementation of socialism and twenty years of economic reforms (Cyr & Frost, 1991; Holton, 1985; Warner, 1993; Zhu & Dowling, 1994).

Although little research in the past has directly focused on the cross-national difference of hiring practices, we could still find some partial explanations by examining the evolutionary process of human resource management practices in different countries. For instance, Shelton (1995) reviewed the HRM system in Australia and detected a perceived need to "move from a centralized industrial relations system to a decentralized system focused around enterprise-based employment agreements" (p. 52), which relies heavily on a massive increase in the extent and frequency of joint consultation between employers and employees at the enterprise level. If that is indeed the new trend in the Australian HRM system, we can easily understand why our Australian respondents have ranked the good fit with the corporate values and ways of doing things so high. As a matter of fact, in recent years federal legislation has been introduced to shift the focus of industrial relations to the enterprise level,

indicating that the Australian system has indeed moved toward decentralization (Gough, 1996).

We suspect that a similar transition is also going on in Canada. Moore and his colleagues conducted some surveys with human resource departments in Canada and noticed that the role of HR department has changed or grown since early 1990s. Such a development is often attributed to the HR department's taking on greater responsibilities and handling these in a more professional manner (Moore & Jennings, 1995; Moore & Robinson, 1989). As such, we may expect to see an increasing desire to recruit new employees whose personal value systems are compatible with the company's culture.

The heavy emphasis placed by Japanese companies on a person's potential and his/her ability to get along with others may be traced to their renowned life-time employment system. As noted by some researchers (e.g., Pucik, 1984), large Japanese organizations usually conduct recruitment and selection on a yearly basis and tend to hire a cohort of fresh school graduates annually in April rather than conduct recruitment throughout the year as vacancies arise. This phenomenon reflects the importance of *wa* (or harmonious human relations) in Japan and is perfectly consistent with our findings, since people from the same schools would find it easier to develop a smooth interpersonal relationship within a team due to their common educational backgrounds.

The relatively low weight given to job-related skills as a selection criterion that we observed should not be surprising, either, in light of findings of the past research on Japanese management. Morishima (1995) points out that important selection criteria used by Japanese firms revolve around trainability or ability to learn rather than the ability to execute tasks and duties. In a survey conducted by Fujiwara (1993), even for white-collar technical employees, fewer than 10% of the firms reported primarily emphasizing "technical expertise" for selection, with even smaller percentages for blue-collar workers and white-collar administrative employees. This might be the reason why Q1 was not ranked among the top three selection criteria by our Japanese respondents. Nonetheless, the technical-skill item was indeed ranked as a top-three criterion for the "Should Be" situation, probably because the deep recession experienced by the Japanese industry in the past ten years has urged Japanese managers to reevaluate their past hiring practices, thereby recognizing the importance of job skills as a factor in hiring decisions.

We also see some similarity between Korean and Japanese hiring systems. Although no lifetime employment system has been adopted by any large firms in South Korea, organizations in both nations seem to deemphasize proven work experience and prefer hiring new graduates out of schools. A study conducted by Koch, Nam, and Steers (1995) clearly shows that in Korea most applicants for white-collar jobs must pass company-sponsored entrance examinations that typically include English-language proficiency in addition to knowledge both in a major field and in general abilities or common sense. This is consistent with our finding that employment tests are considered crucial in the "Is Now" situation in South Korea. Koch et al. (1995) also found that employee referral is widely used for recruiting blue-collar employees in



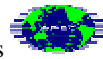
South Korea. This practice may explain why a personal interview has been found to be crucial in our Korean respondents' "Is Now" conditions -- oftentimes it is the only screening tool used by the employers in filling blue-collar positions.

Our findings with the Chinese Taipei sample are in general consistent with what has been reported by Farh (1995). However, Farh also points out that the hiring practices used in the public sector are dramatically different from the counterparts in the private sector. Since our sample of Chinese Taipei is primarily made of employees in the private sector, the findings are naturally more similar to what has been reported by the past studies in this sector. For instance, Huang (1992) has found that job interview is a very crucial part of the personnel selection process. We found that a personal interview is indeed among the top three "Is Now" hiring criteria in the sample of Chinese Taipei.

In spite of the striking similarities that we have found between Japan and Chinese Taipei in hiring practices, we can still see a couple of crucial differences between these two systems. First, because of a shortage of skilled technical employees, many employers in Chinese Taipei obtain experienced personnel by hiring them away from competitors with more attractive offers (Farh, 1995). This phenomenon is common not only in Chinese Taipei but also in all developing countries, particularly as employees consider the companies they work for as "training grounds" (Napier & Vu, 1998). By contrast, in Japan it is strictly a taboo for a large company to steal talented employees away from its competitors.

Second, although familism plays a central role in staffing for both the firms of Chinese Taipei and Japan, owners of many companies in Chinese Taipei tend to plug their relatives into important corporate executive positions while Japanese firms are less likely to do so (cf. Cheng, 1991; Farh, 1995; Peng, 1989). This phenomenon was not mirrored by our empirical findings about Chinese Taipei as it applies only to a few privileged organizational members. In a sense, the wording "familism" means different things in Japan and Chinese Taipei. In Chinese Taipei it implies primarily appointments of relatives and family members for crucial positions while in Japan it is largely referred to a "whole life concern" displayed by employers for their employees.

Finally, we found that the currently prevalent hiring practices in the U.S. seem to consider the job interview performance, technical skills, and proven work experience as the most important selection criteria. This is hardly surprising in light of the past research on American HRM systems (Jennings & Moore, 1995). Nonetheless, in our U.S. sample, "the ability to get along with others already working here" replaces "proven work experience" as one of the top-three hiring factors, probably reflecting a trend toward deemphasizing the past work experience. Indeed, a recent article in the *Fortune* magazine clearly points out that a person's past work experience is no longer highly valued in the U.S. industry as in the past, while a person's potential to become a competent manager in the future has become an increasingly important selection criterion (Munk, 1999).



CONCLUSION

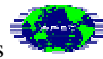
Any conclusion made at this juncture should be viewed as tentative. The BP project group is still in the process of collecting more data from more countries. We are convinced that the validity and reliability of our results will continually improve as we accumulate more data on this subject. In the meantime, we are afraid that in the field of international human resource management there is probably no such thing as a final conclusion anyway. As a former CEO of Apple Computer, John Sculley, once said: "In today's global economy, the only constant is change." It is plausible that the hiring practices in different nations are also undergoing major changes due to the globalization of modern industries. In spite of the lack of evidence supporting a coherent pattern of hiring practices that may be dubbed the "Asian way" of hiring, the trend toward convergence seems to be irresistible. This trend of convergence seems to be well in shape in light of the "Should Be" portion of our data. We also foresee an accelerated pace of global convergence in recruiting practices as a result of the advancement of contemporary information technology (e.g., Internet).

While the recruiting practices used in different countries are inching toward global convergence, we expect national cultures to continue affecting the hiring practices used in various countries (Yuen & Kee, 1993). Inasmuch as national cultures remain different, cross-national differences in HRM practices will continue to exist. As such, human resource managers still need to be culturally sensitive when devising the recruitment systems in various cultural environments. After all, the "best international human resource management practices" ought to be the ones *best* adapted to cultural and national differences.



REFERENCES

- Adler, N. J., & Ghadar, F. (1990). International strategy from the perspective of people and culture: The North America context. *Research in Global Business Management*, 1, 179-205.
- Bania, M. (1992). The ethnocentric staffing policy in multinational corporations: A self-fulfilling prophecy. *International Journal of Human Resource Management*, 3, 451-472.
- Boyacigiller, N., & Adler, N. J. (1991). The parochial dinosaur: organizational science in a global context. *Academy of Management Review*, 16, 262-290.
- Cheng, B. S. (1991). Familism and leadership in Taiwan. In C. F. Yang & S. Y. Kuo (Eds.), *Chinese and Chinese soul*. Taipei: Yeuan-Liou Publishing. (In Chinese)
- Cyr, D. J., & Frost, P. J. (1991). Human resource management practice in China: A future perspective. *Human Resource Management*, 30(2), 199-215.
- De Cieri, H., & Dowling, P. J. (1999). Strategic human resource management in multinational enterprises: Theoretical and empirical developments. In P. M. Wright, L.D. Dyer, J. W., Boudreau & G. T. Milkovich (Eds.), *Research in personnel and human resource management: Strategic human resources management in the twenty-first century*. Supplement 4. Stamford, CT: JAI Press.
- Dowling, P. J., Shuler, R. S., & Welch, D. E. (1994). *International dimensions of human resource management*. Belmont, CA: Wadsworth Publishing.
- Dunnette, E. D., & Borman, W. D. (1979). Personnel selection and classification systems. *Annual Review of Psychology*, 30, 477-525.
- Farh, J. L. (1995). Human resource management in Taiwan, the Republic of China. In L. F. Moore and P. D. Jennings (Eds.), *Human resource management on the Pacific Rim* (pp. 265-294). Berlin: Walter de Gruyter.
- Florkowski, G. W., & Schuler, R. S. (1994). Auditing human resource management in the global environment. *International Journal of Human Resource Management*, 5, 827-851.
- Fujiwara, M. (1993). Hiring and staffing. In M. Tsuda (Ed.), *Personnel management* (pp. 107-120). Tokyo: Mierva Publishing Co. (In Japanese)
- Gough, R. (1996). Australian employee relations in 1996: Change and continuity. *International Employment Relations Review*, 2(2), 91-116.
- Guion, R. M. (1987). Changing views for personnel selection research. *Personnel*



- Psychology*, 40(2), 199-213.
- Heenan, D. A., & Perlmutter, H. V. (1979). *Multinational organization development*. Reading, MA: Addison Wesley.
- Hofstede, G. (1980). *Culture's consequences: International differences in work-related values*. Beverly Hills, CA: Sage.
- Holton, R. (1985). Human resource management in the People's Republic of China. *Management International Review*, 30: 121-136.
- Huang, K. L. (1992). The past and the future of personnel management in Taiwan. Working paper. Department of Industrial and Business Management, National Taiwan University, Taipei.
- Jennings, P. D., & Moore, L. F. (1995). Human resource management in the United States. In L. F. Moore and P. D. Jennings (Eds.), *Human resource management on the Pacific Rim* (pp. 319-347). Berlin: Walter de Gruyter.
- Koch, M., Nam, S. H., & Steers, R. M. (1995). Human resource management in South Korea. In L. F. Moore and P. D. Jennings (Eds.), *Human resource management on the Pacific Rim* (pp. 217-242). Berlin: Walter de Gruyter.
- Lengnick-Hall, C. A., & Lengnick-Hall, M. L. (1988). Strategic human resource management: review of the literature and a proposed typology. *Academy of Management Review*, 13, 454-470.
- Mendenhall, M. R. (1987). Expatriate selection, training and career-pathing: A review and critique. *Human Resource Management*, 26, 331-345.
- Moore, L. F., & Jennings, P. D. (1995). Human resource management in Canada. In L. F. Moore and P. D. Jennings (Eds.), *Human resource management on the Pacific Rim* (pp. 61-89). Berlin: Walter de Gruyter.
- Moore, L. F., & S. Robinson. (1989). Human resource management present and future: Highlights from a western Canadian survey of practitioner perceptions. In A. Petit & A. V. Subbarau (Eds.), *Proceedings of the Administrative Sciences Association of Canada*. Montreal, PQ: Personnel and Human Resources Division, McGill University, pp. 100-110.
- Morishima, M. The Japanese human resource management system: A learning bureaucracy. L. F. Moore and P. D. Jennings (Eds.), *Human resource management on the Pacific Rim* (pp. 119-150). Berlin: Walter de Gruyter.
- Munk, N. (1999). Finished at forty. *Fortune*, 139(2), February 1, 50-66.
- Napier, N. K., & Vu, V. T. (1998). International human resource management in developing and transitional economy countries: A breed apart? *Human Resource Management Review*, 8, 39-77.

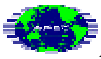


- Peng, H. C. (1989). The evolution of owner relationship in Taiwanese enterprise: A sociological analysis. Unpublished dissertation. Tung-Hai University, Taichung. (In Chinese)
- Pucik, V. (1984). White collar human resource management in large Japanese manufacturing firms. *Human Resource Management*, 23, 257-276.
- Shelton, D. (1995). Human resource management in Australia. In L. F. Moore and P. D. Jennings (Eds.), *Human resource management on the Pacific Rim* (pp. 31-60). Berlin: Walter de Gruyter.
- Sutton, R. I., & Louis, M. R. (1987). How selecting and socializing newcomers influences insiders. *Human Resource Management*, 26, 347-361.
- Teagarden, T. B., Von Glinow, M. A., Bowen, D., Frayne, C., Nason, S., Milliman, J., Huo, Y. P., Arias, M. E., Butler, M. C., Kim, N. H., Scullion, H., Lowe, K. B., & Drost, E. A. (1995). Toward a theory of comparative management research: An idiographic case study of the best international human resources management project. *Academy of Management Journal*, 38, 1261-1287.
- Von Glinow, M. A. (1993), Diagnosing "best practice" in human resource management practices. In B. Shaw et al. (Eds.), *Research in Personnel and Human Resource Management*, Supplement 3, Greenwich, CT: JAI Press.
- Warner, M. (1993). Human resource management with Chinese characteristics. *International Journal of Human Resource Management*, 4(1), 45-65.
- Yuen, E. C., & Kee, H. T. (1993). Headquarters, host-culture and organizational influences on HRM policies and practices. *Management International Review*, 33(4), 361-383.
- Zhu, C. J., & Dowling, P. J. (1994). The impact of the economic system upon human resource management practices in China. *Human Resource Planning*, 17(4), 1-21.

Table 1 A Multinational Comparison of "Is Now" Conditions on Hiring Practices

	AUS	CAN	PRC	IND	JPN	KOR	MEX	TWN	USA
Q1	4.10* (.73)	4.08 (.68)	3.76 (.82)	3.58 (.90)	3.01 (.97)	3.22 (.94)	3.39 (1.02)	3.53 (.86)	3.98 (.83)
Q2	4.22 (.76)	4.18 (.72)	3.27 (.83)	3.55 (.89)	3.62 (.91)	3.31 (.89)	3.77 (1.06)	3.55 (.78)	4.17 (.85)
Q3	3.47 (.97)	3.44 (.90)	3.34 (.78)	3.13 (.87)	3.13 (.88)	3.18 (.95)	3.03 (1.07)	3.50 (.84)	3.45 (1.09)
Q4	1.74 (1.01)	2.06 (.96)	3.16 (1.00)	2.69 (1.22)	2.57 (1.09)	2.50 (1.03)	3.26 (1.21)	3.19 (.98)	2.66 (1.29)
Q5	2.73 (1.07)	3.06 (1.06)	3.25 (.91)	2.95 (1.04)	2.87 (1.05)	2.98 (1.02)	2.79 (1.24)	3.48 (.89)	2.76 (1.05)
Q6	2.31 (1.16)	2.34 (1.24)	3.54 (.81)	3.27 (1.09)	2.91 (1.05)	3.34 (.93)	3.02 (1.24)	3.49 (.80)	1.91 (1.01)
Q7	3.80 (.87)	3.82 (.83)	3.56 (.79)	3.05 (.98)	2.59 (1.10)	2.75 (1.01)	3.11 (1.17)	3.47 (.82)	3.68 (.93)
Q8	3.09 (.98)	3.10 (1.01)	3.35 (.87)	3.08 (.73)	3.14 (.94)	2.94 (.99)	3.15 (1.04)	3.71 (.81)	2.97 (.93)
Q9	3.61 (.96)	3.58 (.94)	3.31 (.85)	3.14 (.86)	2.94 (.89)	3.11 (.97)	3.23 (1.07)	3.39 (.83)	3.44 (1.11)
Q10	1.87 (.99)	1.94 (.98)	2.82 (.93)	2.46 (1.09)	2.12 (1.04)	2.22 (.98)	2.32 (1.18)	2.94 (.98)	2.42 (1.18)
N	436	124	521	237	502	234	479	237	143

* Standard errors are in parentheses.

**Table 2 A Multinational Comparison of "Should Be" Conditions on Hiring Practices**

	AUS	CAN	PRC	IND	JPN	KOR	MEX	TWN	USA
Q1	4.19* (.72)	4.31 (.64)	4.36 (.68)	4.16 (.66)	3.77 (.94)	4.16 (.69)	4.57 (.65)	4.21 (.68)	4.40 (.62)
Q2	3.99 (.85)	4.10 (.81)	3.56 (.85)	3.93 (.70)	4.00 (.77)	3.88 (.74)	4.30 (.88)	3.91 (.67)	4.19 (.78)
Q3	3.71 (.89)	3.94 (.76)	3.71 (.80)	3.82 (.77)	3.57 (.84)	4.12 (.75)	3.71 (1.20)	4.13 (.64)	4.14 (.71)
Q4	1.31 (.64)	1.41 (.61)	2.96 (1.20)	1.88 (1.06)	2.54 (1.15)	1.82 (1.05)	3.31 (1.32)	3.33 (1.01)	1.80 (.91)
Q5	2.72 (1.12)	3.10 (1.12)	3.58 (.91)	3.67 (.97)	3.27 (1.09)	3.99 (.93)	3.73 (1.20)	4.02 (.75)	2.93 (1.05)
Q6	3.25 (1.06)	3.03 (1.19)	3.96 (.72)	4.04 (.75)	3.11 (.93)	3.55 (.92)	4.42 (.74)	4.04 (.67)	2.80 (1.28)
Q7	3.82 (.87)	3.93 (1.00)	3.91 (.84)	3.50 (1.09)	3.00 (1.10)	3.31 (1.00)	4.23 (.89)	3.88 (.73)	4.01 (.80)
Q8	3.60 (.90)	3.58 (.96)	3.92 (.78)	3.82 (.70)	3.80 (.86)	4.12 (.75)	4.18 (.78)	4.31 (.58)	3.67 (.87)
Q9	3.99 (.84)	4.10 (.76)	3.76 (.81)	3.89 (.79)	3.20 (.94)	4.09 (.78)	4.23 (.86)	4.00 (.70)	4.10 (.82)
Q10	2.54 (1.11)	2.71 (1.14)	3.11 (1.01)	2.64 (1.16)	2.60 (1.09)	3.16 (.99)	3.18 (1.29)	3.50 (.91)	3.38 (1.02)
N	435	124	483	233	500	224	471	236	142

* Standard errors are in parentheses.

Table 3 Three Top-Ranking "Is Now" and "Should Be" Factors in Each Country/Region (In Order of Importance)

Nation/Region	"Is Now" Conditions	"Should Be" Conditions
Australia	(A) A personal interview (B) A person's ability to perform the technical requirements of the job (C) Proven work experience in a similar job	(A) A person's ability to perform the technical requirements of the job (B) A personal interview (C) How well the person will fit the company's values and ways of doing things
Canada	(A) A personal interview (B) A person's ability to perform the technical requirements of the job (C) Proven work experience in a similar job	(A) A person's ability to perform the technical requirements of the job (B) A personal interview (C) How well the person will fit the company's values and ways of doing things
PRC	(A) A person's ability to perform the technical requirements of the job (B) Proven work experience in a similar job (C) An employment test in which the skills	(A) A person's ability to perform the technical requirements of the job (B) An employment test in which the person needs to demonstrate the skills (C) A person's potential to do a good job, even if the person is not that good when they first start
Indonesia	(A) A person's ability to perform the technical requirements of the job (B) A personal interview (C) An employment test in which the person needs to demonstrate the skills	(A) A person's ability to perform the technical requirements of the job (B) An employment test in which the person needs to demonstrate the skills (C) A personal interview
Japan	(A) A personal interview (B) A person's potential to do a good job, even if the person is not that good when they first start (C) A person's ability to get along well with others already working here	(A) A personal interview (B) A person's potential to do a good job, even if the person is not that good when they first start (C) A person's ability to perform the technical requirements of the job

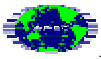


Table 3 Three Top-Ranking "Is Now" and "Should Be" Factors in Each Country/Region (In Order of Importance)
(*Continue*)

Nation/Region	"Is Now" Conditions	"Should Be" Conditions
Korea	(A) An employment test in which the person needs to demonstrate the skills (B) A personal interview (C) A person's ability to perform the technical requirements of the job	(A) A person's ability to perform the technical requirements of the job (B) A person's ability to get along well with others already working here (C) A person's potential to do a good job, even if the person is not that good when they first start
Mexico	(A) A personal interview (B) A person's ability to perform the technical requirements of the job (C) Having the right connections (e.g., school, family, friends, region, government, etc.)	(A) A person's ability to perform the technical requirements of the job (B) An employment test in which the person needs to demonstrate the skills (C) A personal interview
Chinese Taipei good	(A) A person's potential to do a good job, even if the person is not that good when they first start (B) A personal interview (C) A person's ability to get along well with others already working here	(A) A person's potential to do a good job, even if the person is not that good when they first start (B) A person's ability to perform the technical requirements of the job (C) A person's ability to get along well with others already working here
USA	(A) A personal interview (B) A person's ability to perform the the technical requirements of job (C) Proven work experience in a similar job	(A) A person's ability to perform the technical requirements of job (B) A personal interview (C) A person's ability to get along well with others already working here

TABLE 4 Relationships Between Hiring Practices and Effectiveness Measure

(A) Dependent Variable: Hiring practices help recruit high performing employees

	<u>USA</u>	<u>CAN</u>	<u>PRC</u>	<u>IND</u>	<u>JPN</u>	<u>KOR</u>	<u>MEX</u>	<u>TWN</u>	<u>USA</u>
Q1	.132**	.199*	.227***	.195**	.228***	.176**	.243***	.071	.393***
Q2	-.055	-.061	.005	.174**	.121**	.009	.023	.069	.035
Q3	.124*	.156	.010	.107	.117*	.118	.147***	.049	.116
Q4	-.269***	-.296***	-.072	.013	.025	-.081	-.081*	-.063	-.126
Q5	-.121**	-.020	.075	.145*	.087*	.164**	.053	.151*	.098
Q6	.164***	.273***	.163**	.218**	.094*	.230***	.209***	.139*	-.043
Q7	.089	.067	.102*	-.089	-.086*	.098*	.134**	.149*	.005
Q8	.101*	.024	.052	.127	.089	.003	.035	.018	.035
Q9	.165***	.177*	-.010	-.043	.019	.247***	.095*	.035	.141
Q10	.016	.165*	.081	-.011	.132**	.042	.023	.282***	.103
F	13.973***	6.160***	14.849***	10.909***	15.094***	23.449***	26.510***	14.678***	8.522***
R ²	.251	.355	.249	.343	.241	.517	.379	.409	.396
N	428	122	458	219	486	229	444	222	140

* p < .05
 ** p < .01
 *** p < .001

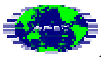


TABLE 4 Relationships Between Hiring Practices and Effectiveness Measures
(*Continue*)

(B) Dependent Variable: Hiring practices help improve job satisfaction

	<u>AUS</u>	<u>CAN</u>	<u>PRC</u>	<u>IND</u>	<u>JPN</u>	<u>KOR</u>	<u>MEX</u>	<u>WNTWN</u>	<u>USA</u>
Q1	.083	.164*	.134*	.189*	.226***	.082	.172***	.041	.221**
Q2	-.031	-.041	-.033	.116	.065	.050	-.075	.081	-.111
Q3	.132**	.175*	.071	.053	.099*	.066	.092*	.009	.217*
Q4	-.301***	-.213**	-.025	.024	-.019	-.055	-.069	-.056	-.221**
Q5	-.034	.065	.113*	.129*	.095*	.176**	.140***	.209**	.040
Q6	.112**	.158*	.123*	.069	.068	.197***	.200***	.199**	.054
Q7	.062	.114	.079	-.066	-.054	.115*	.100*	.048	.038
Q8	.144**	-.004	.015	.191**	.125*	.067	.088	.003	.113
Q9	.101*	.327***	.125*	.047	.010	.204**	.024	.048	.091
Q10	.091*	.109	.014	-.048	.150***	.077	.126**	.239***	.150*
F	13.206***	7.229***	10.488***	6.350***	13.048***	15.783***	18.046***	12.098***	6.438***
R ²	.240	.392	.191	.233	.216	.419	.294	.363	.331
N	428	122	453	219	485	229	444	222	140

* p < .05
 ** p < .01
 *** p < .001

TABLE 4 Relationships Between Hiring Practices and Effectiveness Measures
(*Continue*)

(C) Dependent Variable: Hiring practices help improve overall organizational effectiveness

	<u>AUS</u>	<u>CAN</u>	<u>PRC</u>	<u>IND</u>	<u>JPN</u>	<u>KOR</u>	<u>MEX</u>	<u>TWN</u>	<u>USA</u>
Q1	.054	.060	.215***	.223**	.201***	.141*	.256***	.101	.251**
Q2	-.022	.054	.028	.185**	.065	.039	-.039	.059	.040
Q3	.127**	.182*	.045	.044	.160***	.175*	.104**	.102	.122
Q4	-.288***	-.303***	-.088	.075	.003	-.013	-.034	-.004	-.277***
Q5	-.079	.010	.090	.129*	.072	.107	.018	.069	.042
Q6	.068	.248**	.077	.086	.114**	.170**	.180***	.194**	.012
Q7	.049	.127	.092	.059	-.064	.082	.124**	.124*	-.039
Q8	.160***	.023	.037	.170*	.122*	.059	.098*	.046	.054
Q9	.141**	.239**	.009	-.119	.018	.218**	.064	-.003	.216**
Q10	.113*	.144	.125*	-.077	.104*	-.021	.121**	.264***	.165*
F	13.370***	7.371***	13.018***	7.142***	14.406***	15.691***	24.554***	14.907***	9.075***
R ²	.242	.397	.224	.254	.233	.417	.362	.413	.411
N	428	122	460	220	485	229	443	222	140

* p < .05

** p < .01

*** p < .001

**SCALE OF OPERATIONS, HUMAN RESOURCE SYSTEMS
AND FIRM PERFORMANCE IN EAST AND SOUTHEAST ASIA**

John J. Lawler

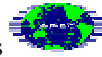
**Institute of Labor and Industrial Relations
University of Illinois at Urbana-Champaign (USA)**

Shyh-jeer Chen

**Institute of Human Resource Management
National Sun Yat-Sen University (Chinese Taipei)**

Johngseok Bae

**College of Business and Economics
Hanyang University (Seoul, Korea)**



SCALE OF OPERATIONS, HUMAN RESOURCE SYSTEMS AND FIRM PERFORMANCE IN EAST AND SOUTHEAST ASIA

ABSTRACT

Small and medium-sized firms are attracting considerable attention in East and Southeast Asia as they seem to be quite flexible and adaptive in seemingly ever more turbulent environments. The 1997 Asian financial crisis seemed to affect in particular countries characterized by larger scale firms. Downsizing and restructuring is now underway in companies in many parts of Asia. Another mechanism by which firms might achieve greater flexibility is through the introduction of high performance work systems (HPWSs). This study assesses the impact of HPWSs on firm financial performance, examining in particular if smaller scale operations might be an alternative to HPWSs. Data used were collected in Thailand, Chinese Taipei, and Korea. Results suggest HPWSs enhance firm performance regardless of firm size.

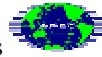


The rapid economic growth that had been enjoyed throughout much of eastern Asian for twenty years or more was seen by many to be sustainable for years to come. But 1997 brought economic crisis from Korea to Indonesia. Those who questioned the long-term viability of the “Asian miracle” (Krugman, 1994) seemed justified. What had been lauded as a fundamental cultural strength—a complex network of social relationships often rooted in Confucian values—was ruefully dismissed, at least in the West, as “crony capitalism.” Although the financial crisis was widespread, there were pockets of resistance—economies that experienced reduced growth but continued to prosper. Chinese Taipei and Singapore are two places that certainly fall into this category.

There are many reasons forwarded to explain the resistance of these two economies to regional problems. Neither country suffered from current account deficits associated with massive debt elsewhere in the region. The huge cash reserves of Chinese Taipei, for example, made it virtually immune from the speculative maneuvers of foreign exchange traders that undermined the currencies of Thailand, Korea, Malaysia, and Indonesia. Both Singapore and Chinese Taipei have governments that pursue disciplined economic policies and are places where the “rule of law” in business matters has strong institutional support.

One of the most significant differences, however, is to be found in the nature of business organization in Chinese Taipei and Singapore versus the countries that were hardest hit by the financial crisis. Singapore has promoted investment in cutting-edge, high-technology industries. Chinese Taipei is particularly noted for its small and medium-sized firms, both in the high-technology sector and in more traditional industries. One advantage of being small is that such organizations can be highly flexible and thus much more responsive to rapidly shifting and unpredictable economic conditions. The dominant indigenous businesses of Korea, Thailand, and Indonesia—the countries most adversely affected by the 1997 crisis—are quite often fairly large-scale companies, often with interests in multiple industries. Examples include the Korea’s *chaebols*, companies such as Siam Cement and the CP Group in Thailand, and the Lippo Group in Indonesia. Industrial restructuring is underway in much of the region, perhaps most notably in Korea, where the government pressing for divestitures and downsizing in many of the countries top-heavy *chaebols* (Ungson, Steers, and Park, 1997). That smaller scale businesses might enhance the Asian competitiveness in the same way as “downsizing” promoted recovery of the American economy in the 1980s is an intriguing if as of yet unresolved issue.

If Asian firms are going to move increasingly in the direction of smaller-scale operations, then we need to consider the human resource management implications of such changes. The purpose of this study is to examine the impact of a firm’s human resource (HR) system on organizational performance, with particular attention paid to the interaction of scale of operations and HR system. Data are drawn from companies in Thailand, Korea, and Chinese Taipei. We focus specifically on the impact of high performance work systems (HPWSs), which have proven to be quite effective in



Western economies and, like smaller-scale operations, can serve to enhance organizational flexibility. We address the following questions:

? To what extent are HPWSs transferable to East and Southeast Asian economies?

? If workable in East and Southeast Asia, do HPWSs have different effects on firm performance in small and medium-sized versus large firms? That is, if small and medium-sized firms are the wave of the future, are HPWSs as important to the success of these firms as might be the case in large firms?

? Are similarities or differences in the impact of HPWSs on firm performance different in the case of indigenous firms different than in the case of firms in general (i.e., both foreign-owned and indigenous firms)?

HUMAN RESOURCE SYSTEMS IN A GLOBALIZED ECONOMY

Human resource systems in East and Southeast Asian region have tended to be fairly hierarchical and non-participative. Collectivism as a dominant cultural value has often promoted a tendency toward conformity on the part of workers and reluctance to take initiative to solve problems and move the firm in new directions. Such systems are well suited to settings in which firms strive to be low-cost producers of well-established products, where efficiency is a more significant consideration than flexibility. And in the world market of the 1970s and 1980s that supported Asian economic expansion, this style of management provided an important source of competitive advantage for the export-oriented development strategies common throughout the region. But global market forces may now render the traditional Asian HR system obsolete, at least in many economic sectors. Though transition to flexible systems that empower workers, often at the lowest level of the organization, is culturally problematic, this approach may well be necessary to assure competitiveness in a fast changing global marketplace.

Globalization, Dynamic Environments, and High-Performance Work Systems

The literature on HPWSs is indeed extensive and our purpose here to motivate an understanding of its relevance to the East and Southeast Asian context rather than explore this literature in great depth. Osterman (1994) has explored this topic as thoroughly as any writer in the field. He contrasts the traditional employment system, with considerable emphasis on centralized control, numerous rules, narrowly defined employee skills, limited employee involvement in decision making, and low-levels of employee commitment to the firm, to “transformational” systems, with team-based production, employee empowerment, relatively few rules, broadly defined skill, high-commitment to the organization, and extensive and on-going training.

There are probably many factors at work that make the time ripe for HPWSs, but we will mention only a few of the leading contenders. These are rooted largely in the environments in which firms must operate and all lead to more dynamic and unpredictable environmental textures. First, and perhaps of greatest significance for this paper, would be the emergence of *highly integrated global markets* on both factor and



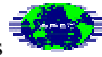
product sides. Globalization has clearly enhanced competitiveness, as firms that once enjoyed large and stable market shares in home markets must compete internationally to generate high returns; even if they do not leave their traditional markets, new competitors from just about anywhere else in the world may enter these markets.¹ The implication here is that higher-level managers may often lack the information necessary to exert top-down control in anything approaching an optimal manner. Rapid response is a key element in organization success, and this pushes the effective locus of decision making to lower levels in the organization. HPWSs become a way of effectively implementing decentralization of coordination and control.

Another factor promoting enhanced competitiveness internationally is a general trend toward *deregulation*. Excessive government intervention in the regulation of business activities is seen as anti-competitive and having a deleterious impact on consumer welfare. Closely related in many countries, including several of the eastern Asian countries considered here, is the process of privatizing state-owned enterprises. Both forces lead to greater market competition and favor firm adoption of HPWSs for many of the same reasons as globalization.

Finally, *rapid technological change* means that a large number of industries face much shorter operating cycles for products and production techniques. Staying ahead technological is now much more critical to success. This may involve sophisticated research and development activities by the firm, but even if it does not, firms must continually upgrade production capabilities, acquire new technical information, and transfer in new technologies. Again, greater reliance on lower-level employees in accomplishing these requirements favor HPWS implementation.

Much of the initial research on linkages between HRM practices and organizational performance focuses on the impact of individual practices on various organizational outcomes (Lawler, Anderson, and Buckles, 1995). This piecemeal approach has been increasingly supplanted by a more holistic approach as researchers have examined the joint effects of complexes of HRM practices that collectively define a firm's HR strategy or system. Although the conceptual literature on HR strategy dates back to mid-1980s (Dyer, 1985; Fombrun, Tichy, and Devanna, 1984), it has only been in the past several years that there has been a proliferation of empirical studies of the effectiveness of HR systems.

There is division among authors as to the viability of *contingency*, *universalistic*, and *configurational* perspectives in analyzing the impact of HR systems on firm performance (Delery & Doty, 1996). The universalistic perspective takes the position that a set of "best practices" can be identified that is equally applicable regardless of organizational setting. This research can be traced to conceptual work by authors such as Pfeffer (1994), who maintain that certain employment practices, such as internal career ladders, extensive training, worker discretion, extensive training, generally contribute to high levels of organizational performance. The contingency perspective holds that the effectiveness of employment practices is moderated by external factors, most usually the organization's business strategy. For example, human relations training might be more effective under what Porter (1980) terms a differentiator, as



opposed to a cost-leadership, strategy. The differentiator relies heavily on innovation and teamwork, so that the returns to human relations training could be conjectured to be greater under such circumstances. Finally, the configurational perspective holds that is, what is really important is the interplay among a set of HRM practices and that synergy created by mutually compatible HRM practices is what generates value for firms (Arthur, 1994). Configurational researchers look at the impact of bundles of HRM practices as a whole, rather than individual components, on firm performance. This is sometimes characterized as “internal fit” (or complementarity among the components of the HR system), while the contingency versus universalistic debate relates to the need for “external fit” (or complementarity between organizational conditions and the HR system). In fact, the configurational perspective is consistent with either the universalistic or contingency perspectives.

The contingency perspective has considerable theoretical appeal rooted in the Western literature dealing with organizational design and management (Thompson, 1967). In the case of HR systems, Schuler (1988) lays out a range of behavioral repertoires he suggests to be mandated by organizational strategic needs (e.g., risk taking versus risk avoidance, cooperation versus independent action, rule adherence versus innovation); these in turn are achieved through the selection of appropriate HRM practices from menus of options in such areas as staffing, assessment, training and development, and compensation. Begin (1997) offers an analogous framework, though one intended to understand organizational HR systems cross nationally. Here we see a multi-tiered set of system outcomes, ranging from employee competence to system integration and financial flexibility—all of which ultimately determine organizational performance—driving the selection of HRM system components (again arrayed in a menu-like framework similar to Schuler’s).

Despite the intellectual appeal of a tightly woven framework where optimal fit between organizational and HR system is the motivating force, much of what is written these days questions the veracity of the conventional contingency perspective. Critics of the contingency viewpoint maintain that most organizations, and certainly those highly active in the global marketplace, require flexibility and that this overrides other concerns, such as external fit. Such a viewpoint supports the general adoption of HPWSs, either in a piecemeal manner or as a unified system. For one thing, HPWSs promote the competence and commitment of employees and this readies firms to adapt to frequent change (Lado & Wilson, 1994; Ulrich, 1998; Ulrich & Lake, 1990). HPWSs promote viewing the world in more complex and varied ways, so that employees can make greater sense out of changing circumstances and respond appropriately (Lado & Wilson, 1994; Snell et al., 1996). HPWSs also put firms in a position to have a self-renewal process and thus adapt more adequately to turbulent environments (Nonaka, 1988; Teece, Pisano, & Shuen, 1997). Huselid (1995) also holds that turbulent environments require firms to rely increasingly on the discretionary contributions of their employees, including those in lower-level occupations. To this end, he maintains that HPWSs motivate workers in this direction by rewarding effective discretionary effort and help the firm to recruit and retain employees capable of acting autonomously. Finally, Wright and Snell (1998) provide a synthesis of the contingency and



universalistic perspectives that emphasizes the importance of flexible, responsive work systems.

There is an extensive body of empirical literature that examines the impact of HPWSs on firm performance. Delery and Doty (1996) test both the universalistic and contingency perspectives, finding that while the former has considerable explanatory value, the addition of interaction effects implied by the latter do not significantly improve the fit of the model. In particular, Delery and Doty found that firms utilizing HRM practices consistent with HPWSs generally outperform more traditional HR systems and this occurs regardless of business strategy. Other research in this (e.g., Arthur, 1994; Becker and Gerhart, 1996; Delaney & Huselid, 1996; Huselid, 1995; Huselid, Jackson, & Schuler, 1997; Youndt, Snell, Dean, and Lepak, 1996; Chadwick & Cappelli, 1998; Ichniowski, Shaw, & Prensushi, 1993; MacDuffie, 1995) has tended to generate similar findings, with much of this work supporting a configurational view. Thus, in general there is strong evidence supporting the efficacy of HPWSs in many if not most organizational contexts. However, further work is necessary to discern the extent to which contingency factors might moderate the HPWS-firm performance relationship.

High Performance Work Systems in Asia

Granted that HPWSs are effective in Western contexts in promoting organizational performance, it does not necessarily follow that they will be all that workable in the very different cultural settings of East and Southeast Asia. Work by Kirkman and Shapiro (1997) discusses cultural factors that might impact the effectiveness of self-managed teams, often a central feature of HPWSs. Applying Kirkman's and Shapiro's framework, the collectivist nature of Asian cultures would certainly increase the receptivity of workers in the region to the team aspect of HPWSs. However, the self-management aspect is another issue. The hierarchical nature of Asian cultures, in which those of lower status often tend naturally to defer to those of higher status, and in which higher status individuals expect such deference, would seem to militate against the effectiveness of these types of systems. Managers are apt to be disinclined to share power and subordinates may be disinclined to accept it.

Harmonious relationships are another cornerstone of East and Southeast Asian culture. But HPWSs require innovation and change, factors that might well promote at least significant degrees of short-term conflict. Thus workers might be quite uncomfortable with systems that require team members to raise questions about the wisdom on one another's proposals for solving a problem, which raises with the possibility of loss of face for someone. One might note that group problem solving has long been a part of Japanese employment systems. However, as Morishima (1998) observes, the Japanese system is really designed to generate what he terms "incremental knowledge"-knowledge necessary to solve fairly immediate problems within a limited domain. HPWSs often lead to the creation of "innovative knowledge," which may move the organization into entirely new directions or which at least deviates very substantially from the status quo. Conventional Japanese consensual decision making systems, Morishima argues, are ill-suited to this task as they require consensus that may

take considerable time to generate. Consensus is not always an aspect of HPWSs, as a team or group leader may make decisions after hearing various perspectives, even if there are highly divergent viewpoints within the group.

Despite these limitations on the HPWS workability seemingly endemic to Asian culture, there is a reasonable amount of empirical work suggesting that HPWSs are potentially as effective in Asia as in the West. In Korea, for example, the industrial restructuring that began even before the 1997 financial crisis has led to the adoption of various elements of HPWSs in many Korean firms (Bae, 1997), which Bae and Lawler (forthcoming) found increased firm performance. They argued in part that this might be linked to cultural change in Korea, that with economic growth and exposure to Western cultures, Korean workers (at least the younger ones) are more individualistic and less deferential to authority, leading to a culture that has been termed “dynamic collectivism.” This seems likely to be a force in other East and Southeast Asian cultures that have undergone rapid growth in the past couple of decades. Other empirical studies have similarly shown HPWSs to be effective in Asian settings, including work in Japan by Morishima (1998), in Korea by Lee and Johnson (1998), in Chinese Taipei by Uen (1998), in Hong Kong by Ngo, Turban, Lau, and Lui (1998), and in India by Sivasubramaniam and Venkata Ratnam (1998). Some of the Asian studies find a contingency relationship between business strategy and HR system, while others only find a positive relationship between use of HPWSs and firm performance.

Despite cultural constraints, it appears that HPWSs have promise in Asia as a means enhancing firm effectiveness and thus promote economic recovery and further growth. However, to date, cross-national research on this topic in Asia has not taken place (i.e., all studies of the HPWS-firm performance relationship have been conducted in individual countries). Our work looks at this across three different countries, all of which have experienced high rates of economic growth but are very different in other respects. Korea and Chinese Taipei have reached high levels of economic development, while Thailand is at a much lower level. Korean firms tend to be large-scale operations, while Taiwanese companies are often small and medium-sized; Thailand has a mixture of both types of companies. The high technology sectors are well developed in Korea and Chinese Taipei, but much less so in Thailand. And these countries differ substantially geographically and in many ways culturally (e.g., a significant proportion of Koreans, including the business elite, are Christian, the people of Chinese Taipei generally follow traditional Chinese religious practices (Daoism and Mahayana Buddhism), while the Thais are mainly Theravada Buddhists. Finally, we examine HPWSs as implemented among lower-level (non-managerial) employees, as it is here that issues of empowerment and worker autonomy are most critical if an organization is really going to build what is truly a high performance work system. We thus have a varied sample to test the hypothesis that emerges from the previous discussion:

Hypothesis 1: Utilization of high performance work systems implemented among lower level (non-managerial) employees will increase firm performance.

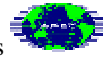


A related issue is whether any relationship between HPWSs and firm performance is moderated by firm business strategy. In particular, we might anticipate that HPWSs are better suited to differentiation strategies and more traditional HR systems are better suited to cost leadership strategies. We examine this possibility in our empirical work as we test Hypothesis 1.

Granted that HPWSs impact performance in Asian firms, there is the role that scale of operations might also play as a moderator of the importance of HPWSs. A lot of what has been written about HPWSs has been concerned with the ways in which such an approach can serve to make larger firms with bureaucratic control systems more responsive to turbulent environments. However, this might not be all that helpful in guiding policies in smaller scale operations. Redding (1995) describes some of the characteristics of the prototypical small and medium-sized Chinese enterprise: family owned and managed, centralized decision making with a dominant chief executive, paternalistic organizational environment, cost consciousness and a concern with efficiency, and extensive strategic adaptability resulting from a dominant decision maker. Thus, such organizations would seem to combine certain features necessary to function effectively in today's environment. As they are smaller scale, it is easier to institute change. Family management naturally leads to identification with the firm's goals on the part of the management group and a paternalistic stance toward employees in general, with employees offering loyalty and hard work in return, helping to make the organization operate as a unified whole. Unlike Japanese firms, where consensual decision making is a central process, the Chinese enterprises have a centralized decision maker who can quickly initiate change without a prolonged consideration of issues and options.

In such organizations, HPWSs might not add much value, since mechanisms are already in place to promote flexibility. Yet there are other considerations. Increasingly rapid change, both as result of globalization pressures and rapid technological change, may require technical expertise that is beyond the understanding of the family patriarch. Management has become increasingly professionalized within Asia as MBA programs have become commonplace. So more junior family members with professional training, as well as professional managers hired from outside the family, often resent their inability to influence decisions and the firm is denied their expertise. And lower level employees may have much to offer with regard to enhancing efficiency and resolving problems associated with major organizational changes. Finally, many of the newer small and medium-size firms being established in areas such as the high-technology sector are not conventional family enterprises. They are professionally management organizations in which the need for input from all levels is important and recognized. These competing arguments suggest the following hypothesis:

Hypothesis 2: The relationship between firm performance and utilization of high performance work systems among lower level (non-managerial) employees will be weaker in small and medium-sized firms than in large firms..



RESEARCH METHODS

The questionnaire developed for this survey assessed the various components of a firm's HR system, firm size, organizational strategy, firm performance, and other organizational characteristics (e.g., characteristics of the HRM subunit and the firm's geographical location). The questions focused on HRM practices with respect only to non-managerial employees. The questionnaires, which had been translated into Korean, Thai, and Chinese, were administered to individuals with principal responsibility for HRM in a random sample of firms in South Korea, Thailand, and Chinese Taipei. The sample consists of a total of 506 firms. These were randomly selected from leading business directories in each country and consisted of both indigenous and foreign-owned firms. Indigenous firms are defined as those wholly owned by nationals of the focal country or joint ventures with foreign firms that are controlled by nationals of the focal country.

The dependent variable used in this study is the firm's *financial performance*. We use a subjective measure of performance derived from a scale developed by Khandwalla (1977). Likert-items measured perceived financial strength, profitability, growth rate, and market share. The reliability (coefficient alpha) for the scale, composed of four items, is .77. Although objective measures of performance, such as return on investment based on accounting data, would seem a more appropriate measure, its use is problematic. First, the study involves companies in three different countries with distinct accounting standards, so there are comparability problems. Second, many companies in Asia are reluctant to disclose financial data, so the necessary information is often not available.

The principal independent variable in our study is the firm's *HR system*. This is based on four distinct scales: HR flow, work system, reward system, and employee upward influence. These have been described in detail elsewhere (Bae, Chen, and Lawler, 1998) and will thus be only briefly described here. Various Likert-items were used to measure HRM practices argued to reflect these underlying dimensions. In some instances, questions developed by other researchers were used, while some items were developed by the authors (see Bae, Chen, and Lawler (1998) for a description of the components of the scale) Firms that are high on the *HR flow scale* utilize extensive selection and training procedures and have relatively high job security. The scale is composed of six items with a reliability (alpha coefficient) of .71. The *work systems scale* covers job design and control types. Firms at the upper end of this scale tend to use broadly defined jobs with enriched designs, team-based work organization, and employee autonomy. Narrowly defined jobs and a greater presence of rules and formal controls characterize firms at the lower end of the scale (four items and alpha of .68). The *reward system scale* reflects the degree of the linkage of performance and pay level and the presence of employee ownership programs. Firms at the high end of the scale emphasize pay for performance, gain sharing, and/or profit sharing (six items and alpha of .70). The *employee influence scale* measures the extent to which employees as stakeholders are involved in decision making in job-related and organizational issues. High values represent high employee involvement and autonomy (four item and alpha of .71).



In all of these scales, high values represent aspects of HPWSs, while low values represent more traditional, bureaucratic employment systems. Not surprisingly, then, scales are highly intercorrelated and may, in fact, reduce to a single dimension (Bae and Lawler, forthcoming). Thus, we have also generated a composite index of the HRM system as a whole that is constructed by summing all four HRM policy area scales. This index ranges along a continuum from the traditional work system at the lower end to HPWS at the higher end. This composite index (i.e., the sum of the four subscales) has an alpha coefficient of .81.

Another important independent variable in the study is the firm's *organizational strategy*. This is measured in the same way as described by Bae and Lawler (forthcoming). Likert items are used to measure the extent to which the firm pursues a business strategy of differentiation (Porter, 1980). The scale consists of eight items with an coefficient alpha of .88.

Other control variables include firm age, firm size (number of employees), union status (a dummy variable that is coded 1 when the firm is unionized, 0 otherwise), and dummy variables indicating the firm's home country (Chinese Taipei served as the reference group, so that dummy variables representing Thailand and Korea appear in the regression analysis). Finally, data for this study were collected over several years, starting in 1996 and ending in 1999. Since we are analyzing firm performance, we might anticipate decreased firm performance after the 1997 Asian financial crisis. Therefore, a dummy variable is included indicated if the data for a case were collected prior to or after the onset of the crisis. Descriptive statistics for all of these variables appear in Table 1, along with the matrix of inter-correlations among the variables.

Table 1 About Here

DATA ANALYSIS

We use the conventional definition of small and medium-sized firms as those with 500 employees or less. Approximately 66% of the firms in this study fell into the "small and medium" category using this criterion. Firms in the study ranged in size from thirteen employees to 46,000 employees. Taking the set of firms studied as a whole (foreign and indigenous), the proportion of small and medium-sized firms was about the same in each of the three counties. However, the distribution was quite different in the case of indigenous firms. As might be anticipated, only a small proportion of the forty indigenous Korean firms in this study (25%) fell into the "small and medium sized" category and, just as expectedly, a substantial proportion of the 215 indigenous firms of Chinese Taipei (61%) fell into this category. However, Thailand had the largest proportion of small and medium-size firms (70% of the 29 indigenous Thai firms).

Differences in HR Systems

Our first task is to determine whether and to what extent firms differ in terms of their utilization of HPWS-related HR methods across the three countries studied here and as a function of the size of the firm. Small and medium sized firms of Chinese Taipei become the reference group here as we are concerned with the extent to which HR system differ in Korea and Thailand from those typical of what are presumed to be the most flexible and responsive of firms (i.e., the small and medium-size companies of Chinese Taipei).

A series of *t*tests indicates something about the differences in HR systems between groups of cases. When we compare all large to all small and medium-sized firms, we find that the large firms have a generally higher score on the HR systems scale (4.22 vs. 4.08; $t = 2.18$; $p < .05$).² This is somewhat surprising, since one might expect smaller firms to utilize less structured HR systems, although the greater informality available in small and medium-sized firms may substitute for the purposeful design of such systems. Indigenous firms across all three countries tend to rely to a greater extent on HPWSs than MNC subsidiaries (4.18 vs. 4.05; $t = 2.05$; $p < .05$). If we look only at indigenous firms, large firms are no more likely to use HPWSs than small and medium-sized firms (4.19 vs. 4.17; $t = .274$; no significant difference). However, indigenous firms of Chinese Taipei tend to rely much more heavily on HPWSs than either indigenous Thai or indigenous Korean firms (4.25 for people in Chinese Taipei versus 4.00 for pooled Thai-Korean; $t = 2.83$, $p < .01$).

Regression Analysis

Our concern here is to determine the extent to which small and medium-sized firms differ from large firms in terms of the role the organization's HR system might play in determining firm performance. In addressing this issue, we can gain insight into differences in HR system requirements needed by Asian firms, especially as smaller and more flexible firms play more significant roles in the regional economy. Results presented in Table 2 relate to this issue.

Table 2 About Here

We first regressed firm performance against the set of independent variables described above using the entire set of cases in the sample. These cases were broken down into two groups: small and medium-sized and large firms. This set of cases thus includes both foreign-owned and indigenous firms in all three countries in the study. The first column in Table 2 contains the results for the small and medium-sized firms, while the second contains the results for the large firms. In both instances, the overall analyses are statistically significant and explain reasonably high proportions of the variance in firm performance (given the cross-sectional and subjective nature of the data). The model explains about one-third of the variance firm performance for the



small and medium-sized firms and about one-quarter of the variance in the case of the large firms.

In both instances, both the composite HR system scale, which measures the extent to which a firm utilizes HPWS techniques, and the organizational strategy scale, which measures the firm's pursuit of a differentiation strategy, are significant and positive, as would be expected. The firm's age is also important in both cases, with older firms generally doing less well than newer firms. Again, the age relation would be expected, as new firms are presumably responding to high-growth market opportunities and older firms may be further along in a product's life cycle. One variable that did not seem to matter is the firm's size. Of course, the sample is broken down roughly by size, but this result suggests that within the two size categories, variations in firm size per se do not seem to matter. Although not reported here in detail, a separate analysis with the large and the small and medium-sized firms pooled showed similar results for the HPWS and organizational strategy variable, although firm size was positively related to firm performance. Yet a second size variable, controlling for the large vs. small and medium split, was not significant (even when the size variable was deleted). Thus being in one versus the other major size category did not seem to matter all that much with regard to firm performance.

This first analysis, containing both indigenous and foreign firms, suggests there is no difference between the two groups in terms of the importance of utilizing HPWSs to improve firm performance. In fact, the HPWS coefficients are virtually identical for both groups. In the case of large firms, reliance on an organizational strategy of differentiation has a somewhat stronger impact on firm performance than for small and medium-sized firms. However, this difference is not statistically significant (applying a t-test).

A more fundamental policy issue relates to the appropriate use of HPWSs in indigenous firms. That is, if indigenous East and Southeast Asian companies are more likely to "downsize," and if start-up firms are more likely to be smaller, more flexible organizations, and if there is something about these companies that distinguishes them from MNC subsidiaries (a reasonable assumption), then we should also examine these processes within the context of indigenous firms only. The third and fourth columns of Table 2 report results for the regression analysis utilizing only the indigenous firms.

The results here are somewhat different from the analysis done with the pooled data, though the differences are not all that substantial. Again, organizational differentiation strategy and reliance on a HPWS approach are positively and significantly related to firm performance. The HPWS coefficient is lower in the case of small and medium-sized firms and higher in the case of large firms than in the pooled sample. Thus, we might initially conclude that use of HPWSs is a relatively more important source of organizational effectiveness in large firms than in small and medium-sized firms, as posited in Hypothesis 2. However, the difference here is not statistically significant (applying a t-test) and the same holds in the case of the organizational strategy scale.

Finally, we did additional regression analysis in which an organizational business strategy-HPWS interaction effect was included to test the contingency perspective. The interaction effect was not found to be statistically significant under any of various model specifications. Thus, the results here are consistent with the universalistic perspective.

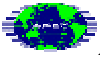
CONCLUSIONS AND IMPLICATIONS

This study evaluated two principal hypotheses. Hypothesis 1 posited that HPWSs should increase firm performance and the empirical analysis provides strong support for that position. This is true despite the fact that culture barriers exist to their introduction of HPWSs based on stereotypical notions of East and Southeast Asian culture. Furthermore, we found no support for a contingency relationship involving firm performance, HPWSs, and organizational business strategy. Thus, in general, companies need to pursue both business strategies emphasizing differentiation and implement HPWSs. Hypothesis 2 posited that HPWSs should have a weaker impact on firm performance in presumably more naturally flexible small and medium-sized firms, but that was not found to be the case in the empirical work (the estimated HPWS effect was weaker in the case of small and medium-sized indigenous firms, but this relationship was not significant).

Clearly, this study is only a start and work in other settings with more refined measures is in order. Also, research might focus on the effects of HPWSs on firm performance in other geographical settings. If HPWSs can serve to promote firm performance and do this as substantially as the results of this study indicate, then perhaps it would be useful to initiate the process of change in other countries and regions where economic development trails East and Southeast Asia. Of course, work is necessary to evaluate whether HPWS would transfer readily to such areas.

Our main findings, then, are that HPWSs seem to work well in promoting firm performance in East and Southeast Asia, that the relationship is not moderated by firm business strategy, and that the relationship does not depend on firm size. Thus, simply keeping a firm small, as in many traditional Chinese family enterprises, is in and of itself not a particularly effective source of organizational flexibility. While it might traditionally have been the case that a business-savvy family patriarch had the necessary skills and knowledge to guide a small or medium-sized firm through perilous waters, the continuing pressures of globalization and rapid technological change, coupled with secondary pressures such as deregulation of the marketplace, renders this model generally obsolete.

These results hold in the case of indigenous firms, so that this work has implications as a guide for local companies and for public policy makers interested in promoting the competitiveness of their respective countries' indigenous companies. Continuing pressures associated with globalization, technological change, and market deregulation suggest a continuing need for firms to utilize HPWSs in some form or the other. This applies equally in larger and smaller-scale operations. Small and medium-sized firms may become more common throughout Asia in future years, but the



traditional study of management in this type of Asian firm, in which a single leader makes most important decisions, will likely need to give way to systems in which there is more employee participation from the bottom on up.

REFERENCES

- Arthur, J. 1994. Effects of human resource systems on manufacturing performance and turnover. *Academy of Management Journal*, 37: 670-687.
- Bae, J. 1997. Beyond seniority-based systems: A paradigm shift in Korean HRM? *Asia Pacific Business Review*, 3: 82-110.
- Bae, J., Chen, S., & Lawler, J., 1998. Variations in human resource management in Asian countries: MNC home-country and host-country effects.” *International Journal of Human Resource Management*, 9: 653-670.
- Bae, J. and Lawler, J. (forthcoming). Organizational and HRM strategies in Korea: Impact on firm performance in an emerging economy. *Academy of Management Journal*
- Barbash, J. 1987. *Elements of industrial relations*. Madison, WI: University of Wisconsin Press.
- Becker, B., & Gerhart, B. 1996. The impact of human resource management on organizational performance: Progress and prospects. *Academy of Management Journal*, 39: 779-801.
- Begin, James (1997). *Dynamic human resource systems: Cross-national comparisons*. Berlin: Walter de Gruyter.
- Bird, A., & Beechler, S. 1994. Links between business strategy and human resource management strategy in U.S.-based Japanese subsidiaries: An empirical investigation. *Journal of International Business Studies*, 26: 23-46.
- Chadwick, C., & Cappelli, P. (forthcoming). Alternatives to generic strategy typologies in strategic human resource management. In P. Wright, L. Dyer, J. Boudreau, & G. Milkovich (eds.), *Research in personnel and human resources management*. Greenwich, CT: JAI Press.
- Chadwick, C., & Cappelli, P. 1998. Investments or contracts? The performance effects of human resource systems under contingencies. Working paper , Wharton School, University of Pennsylvania, Philadelphia.
- Delaney, J. T., & Huselid, M. A. 1996. The impact of human resource management practices on perceptions of organizational performance. *Academy of Management Journal*, 39: 949-969.
- Delery, J. E., & Doty, D. H. 1996. Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal*, 39: 802-835.



- Dyer, L. 1984. Studying human resource strategy: An approach and an agenda. *Industrial Relations*, 23: 156-169.
- Fombrun, C.J., Tichy, N.M., & Devanna, M.A. 1984. *Strategic human resource management*. New York: Wiley.
- Huselid, M.A. 1995. The impact of human resource management practices on turnover, productivity, and corporate financial performance. *Academy of Management Journal*, 38: 635-670.
- Huselid, M.A., Jackson, S.E., & Schuler, R.S. 1997. Technical and strategic human resource management effectiveness as determinants of firm performance. *Academy of Management Journal*, 40: 171-188.
- Ichniowski, C., Shaw, K., & Prennushi, G. 1993. The effects of human resource management practices on productivity. Unpublished paper presented at the ILR School, Cornell University.
- Khandwalla, P. 1977. *The Design of Organizations*. New York: Harcourt Brace Jovanovich.
- Kirkman, B., & Shapiro, D. 1997. Resistance to teams: Toward a model of globalized self-managing work team effectiveness. *Academy of Management Review*, 22: 730-757.
- Krugman, P. 1994. The myth of Asia's miracle. *Foreign Affairs* 73: 62-78.
- Lado, A.A., & Wilson, M.C. 1994. Human resource systems and sustained competitive advantage: A competency-based perspective. *Academy of Management Review*, 19: 699-727.
- Lawler, J. Anderson, W., and Buckles, S. R. 1995. Human Resource Management and organizational Effectiveness, in G. Ferris, S. Rosen, and D. Barnum (eds.) *Handbook of Human Resource Management*. Cambridge, MA: Blackwell. PP.630-650.
- Lee, M.B., & Johnson, N.B. 1998. Business environment, high-involvement management, and firm performance in Korea. *Advances in Industrial and Labor Relations*, 8: 67-87.
- MacDuffie, J.P. 1995. Human resource bundles and manufacturing performance: Organizational logic and flexible production systems in the world auto industry. *Industrial and Labor Relations Review*, 48: 197-221.
- Morishima, M. 1998. Changes in Japanese human resource management: Implications for firm performance. Conference paper presented at Workplace Conflict and Cooperation: Prospects for Employee Representation, University of Illinois at Urbana-Champaign, May 1-2.

- Ngo, H., Turban, D., Lau, C., & Lui, S. 1998. Human resource management practices an firm performance of multinational corporations: Influences of country of origin. *International Journal of Human Resource Management*, 9:632-653.
- Nonaka, I. 1988. Self-renewal of the Japanese firm and the human resource strategy. *Human Resource Management*, 27: 45-62.
- Osterman, P. 1987. Choice of employment systems in internal labor markets. *Industrial Relations* 26: 46-67.
- Osterman, Paul 1994. How common is workplace transformation and who adopts it? *Industrial Relations* 26: 46-76.
- Pfeffer, J. 1994. Competitive advantage through people: Unleashing the power of the work force. Boston: Harvard Business School Press.
- Porter, M. E. 1980. Competitive strategy. New York: Free Press.
- Porter, M.E. 1980. *Competitive strategy: Techniques for analyzing industries and competitors*. New York: Free Press.
- Redding, G. 1995. Overseas Chinese networks: Understanding the enigma. *Long Range Planning* 28: 61-69.
- Schuler, Randall 1988. Human resource management choices and organizational strategy. In R. Schuler, S. Youndblood, V. Huber (eds.) *Readings in Personnel and Human Resource Management*. St. Paul, MN: West Publishing, pp. 24-39.
- Sivasubramaniam, N., & Venkata Ratnam, C. 1998. Human resource management and firm performance: The Indian experience. Paper presented at 1998 Annual Meetings, Academy of Management, San Diego.
- Snell, S.A., Youndt, M.A., & Wright, P.M. 1996. Establishing a framework for research in strategic human resource management: Merging resource theory and organizational learning. In G.R. Ferris (ed.), *Research in personnel and human resources management*, 14: 61-90. Greenwich and London: JAI Press.
- Teece, D.J., Pisano, G., & Sheun, A. 1997. Dynamic capabilities and strategic management. *Strategic Management Journal*, 18: 509-533.
- Thompson, James 1967. *Organizations in action*. New York: McGraw-Hill.
- Uen, J. F. 1998. The relationships between the configuration of human resource system and organizational performance in high-tech companies. Working paper, National Sun Yat-sen University, Chinese Taipei.
- Ulrich, D. 1998. Intellectual capital = competence × commitment. *Sloan Management Review*, 39:15-26.



- Ulrich, D., & Lake, D. 1990. *Organizational capability: Competing from the inside out*. New York: John Wiley & Sons.
- Ungson, G., Steers, R., & Park, S. 1997. *Korean enterprise: The quest for globalization*. Boston: Harvard Business School.
- Wright, Patrick M. and Snell, Scott A. 1998. Toward a unifying framework for exploring fit and flexibility in strategic human resource management. *Academy of Management Review*, 23: 576-772.
- Youndt, M.A., Snell, S.A., Dean, J.W., Jr., & Lepak, D.P. 1996. Human resource management manufacturing strategy, and firm performance. *Academy of Management Journal*, 39: 949-969.

¹ Granted, many countries still have trade barriers, but these are rapidly eroding.

²The composite HR system scale ranges in value from 1 to 6, with higher values indicating a greater tendency to utilize a HPWS.

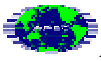


TABLE 1
DESCRIPTIVE STATISTICS AND CORRELATION MATRIX

Variables	Mean	SD	1	2	3	4	5	6	7	8	9
1. Firm Performance	4.36	0.83	1.000								
2. High Performance Work System	4.13	0.68	0.358	1.000							
3. Differentiation	5.42	0.96	0.422	0.534	1.000						
4. Unionized Firm	0.35	0.48	0.019	-0.004	-0.046	1.000					
5. Firm Age	21.39	15.02	-0.091	0.072	0.051	0.226	1.000				
6. Pre-Crisis	0.38	0.48	0.029	-0.239	-0.331	0.239	-0.120	1.000			
7. Korea	0.27	0.45	0.064	-0.312	-0.341	0.252	-0.066	0.790	1.000		
8. Thailand	0.10	0.31	-0.012	0.078	-0.184	-0.128	-0.047	-0.265	-0.209	1.000	
9. Employees	947.41	2983.41	0.092	0.010	0.003	0.241	0.290	0.141	0.153	-0.037	1.000

TABLE 2
REGRESSION RESULTS

	Small-Medium Firms		Large Firms		Small-Medium Indigenous Firms		Large Indigenous Firms	
	<i>B</i>	<i>t-value</i>	<i>B</i>	<i>t-value</i>	<i>B</i>	<i>t-value</i>	<i>B</i>	<i>t-value</i>
Constant	1.494	5.141 ^a	.639	1.037	1.757	4.177 ^a	.183	.235
High Performance Work System	.267	3.973 ^a	.276	2.088 [\]	.215	1.994 ^b	.362	2.005
Differentiation	.339	6.591 ^a	.446	4.817 ^a	.355	4.259 ^a	.453	3.588
Unionized Firm	-.139	-1.499	4.542E-02	.308	-2.936E-02	-.176	.116	.637
Firm Age	-8.704E-03	-2.437 ^b	-6.665E-03	-1.869 ^c	-1.152E-02	-2.435 ^b	-6.803E-03	-1.695
Pre-Crisis	-.360	-2.430 ^b	.409	1.982 ^b	-.332	-1.404	.421	1.573
Korea	.822	5.425 ^a	.192	.837	.605	1.942 ^b	.237	.801
Thailand	.141	1.045	.614	2.334 ^b	-1.407E-02	-.072	.643	1.875
Employees	1.186E-04	.353	2.017E-05	1.430	-5.862E-05	-.113	1.843E-05	1.165
Adjusted R2	.326		.254		.303			
F-Ratio	18.846		6.998 ^a		8.432 ^a			
N	295		141		137			

a=significant at .01 level; b = significant at .05 level; c = significant at .10 level.

**THE PREDICTION OF OVERSEAS ADJUSTMENT AND
COMMITMENT OF EXPATRIATES WORKING AT THE
COMPANY'S SUBSIDIARIES THE CHINESE TAIPEI IN
MAINLAND CHINA**

Sheng-Ying Lii
Department of International Business Studies
National Chi Nan University (Chinese Taipei)

THE PREDICTION OF OVERSEAS ADJUSTMENT AND COMMITMENT OF EXPATRIATES WORKING AT THE TAIWANESE COMPANY'S SUBSIDIARIES IN MAINLAND CHINA

ABSTRACT

This study investigates the impact of corporate entrepreneurship, expatriate's emotional quotient, locus of control, work role characteristics on the adjustment and commitment of expatriates working at the Taiwanese subsidiary company in Mainland china. Valid questionnaire responses were collected from 152 expatriates.

The main findings are as follows:

- 1.The variable affect the expatriates' adjustment in order is works role characteristics, locus of control, corporate ingenuity, and company size.
- 2.The variable affect the expatriates' continuous working commitment in order is work role characteristics, expatriate's EQ and locus of control.
- 3.The variable affect the expatriates' effort commitment in order is continuous working commitment, corporate endeavor, expatriates' EQ and rank.
- 4.The expatriates with external locus of control have better adjustment and poorer continuous working commitment.
- 5.There are positive correlation between expatriate's EQ and their perceived corporate ingenuity and endeavor.
- 6.There is negative correlation between work role characteristics and the expatriate's perceived corporate ingenuity and endeavor.
- 7.There is negative correlation between expatriate's EQ and work role characteristics.
- 8.The linear structure equation model of this study has an adequate goodness of fit.

Key Words: small to medium size corporation (SMC), Expatriate, Emotional Intelligence, Overseas Adjustment, Organizational Commitment



INTRODUCTION

Since 1991 Taiwan allow her citizen travel to Mainland China to visit their relatives, Taiwanese investment in Mainland China have been rapidly increasing. According to the 1999 report by Taiwanese Industry Association, there are more than forty thousand cases of Taiwanese investment in Mainland China. The main reason for Taiwanese investing in Mainland China is cheap land, labor and huge market (Lii, 1996). The labor cost in Mainland is about one tenth to fifteenth of Taiwanese labor cost. Taiwanese hi-tech labor cost is about one hundred times higher than that in Mainland China. Taiwanese investment help Mainland increase their management know-how and hire large number of Mainland Chinese employee, help maintain the social stability. Mainland China helps prolong Taiwanese business life for five to ten years longer. According to the 1998 official statistics of Peoples Republic of China (PRC), Taiwanese investment in Mainland China is more than 21 billion US dollars. Mainland China has become Taiwanese number one overseas investment area.

In the process of investing in Mainland China, human resources management has been the key factor for the success of Taiwanese investors. After forty years separation under different political and economic system, life style and the way of thinking across Taiwan Strait become different, Taiwanese expatriates working in their subsidiary company in Mainland China have difficulties in the ir life and work adjustment.

According to Lii (1996), the small to medium size companies encountered more difficulties than large size companies. Ninety eight percent of all the companies in Taiwan are SMC. Its number is about one million. The SMC have more than 98% of all the Taiwanese employment, and more than 50% of total foreign trade. The SMC are key factors for Taiwanese economic development and social stability. But the SMC is poor in their global operation and policy of expatriation. They lack long term execution and strategic planing. The immediate effect is high turnover and difficulty in transferring of overseas social network and field experience. Thus, render the slow down in business globalization.

Most SMC's overseas investment capital is from Taiwan. The success and failure of Taiwanese SMC investment in Mainland bear high degree of impact on Taiwanese economy and society. This study aims to explore the influential variables on the expatriate's overseas adjustment and organizational commitment. The results from this study should provide some reference information for improving Taiwanese corporate policy and operation on expatriate's recruitment and management.

LITERATURE REVIEW

The related studies on overseas adjustment

The definition of expatriate is the employee who is assigned to work outside parent country with the intention to go back to the parent country. They are either parent-country national (PNC) or third country national (TCN) (Grosse & Kujawa, 1992). In the initial stage of business internationalization, large number of expatriates is assigned.

The best approach is to use the parent country national. The reasons for having expatriates are:

- (1)The host country does not have enough people who have management know-how.
- (2)To develop the international business experience of parent company's employee.
- (3)To control the subsidiary company
- (4)To communicate with parent company, to execute the parent company's strategy.
- (5)To keep the industrial secret.

The expatriates are situated in an international environment, they must play bicultural or multicultural roles. Rahim (1983) indicated that the expatriates have to play the following roles:

- (1)The representative from parent company.
- (2)The manager for local subsidiary company.
- (3)The local resident.
- (4)The local citizen or citizen in both countries.
- (5)The expert.
- (6)The family member.

The different role expectation creates conflict, deepen the difficulty of overseas adjustment. Different countries, regions, people have different law, regulation, behavioral code and cultural custom. For fearing of violating custom or taboo, people in unfamiliar environment usually feel uneasiness or have anxiety. Oberg (1960) called this phenomenon as "culture shock". The adjustment process of the culture shock is called cross-culture adjustment. The first challenge facing the expatriate is cross-culture adjustment. It is so called overseas adaptation or adjustment.

The studies on work role characteristics.

Torbiorn (1982) indicated that the role of expatriate involved the expectation of parent company to the expatriate, and the influence of host country to the expatriate's behavior. The expatriate have encountered some common problems (Torbiorn, 1982; Ku, 1993):

- (1)The expatriate's role is ambiguous.
- (2)Because the geographical or language barrier, the communication between the expatriate and parent company or between the expatriate and host country is equivocal or inefficient.



(3)The expatriate's qualification or ability is insufficient, can not play the expatriate's role well.

(4)The incompatible of different role expectation.

Black & Mendenhall (1990) in his study of American expatriate in Japan found that there is no significant correlation between work role adaptation and overseas adjustment. They found that among the four work role characteristics (work role ambiguity, work role conflict, work overload and work role novelty), only the work role ambiguity can significantly predict overseas adjustment.

The related studies on locus of control

Some people feel they can control everything in their life. They think they control their own destiny. Their life depends on their own effort and not controlled by outside forces. These are so called "internal locus of control type". There are other kind of peoples they belief their life is controlled by chance, fate, opportunity and other outside unpredictable forces. These are so called "external locus of control type".

Rotter (1966) first suggested that locus of control is one dimension of personality. Rotter suggested that the internal locus of control person would put more effort into control their environment, and thus, gain better result. They will be more concerned with the information important to themselves and tried hard to obtain the information. They are better in obtaining and using the information than the person with external locus of control. Church (1982) in his study indicated that the person with internal locus of control can explain what and why thing happen from other people's point of view. Therefore, the people with internal locus of control have more effective interpersonal communication and better interpersonal relationship.

Mendenhall & Oddou (1985) based on previous empirical studies, pointed out that there are several major dimensions affecting the expatriate's overseas adjustment:

1. Self-oriented dimension

- (1)Replace reinforcement: Can adopt those recreational activities which are similar to the expatriate's own culture but with different content.
- (2)Reduce stress: Can reduce the stress brought by different culture.
- (3)Skill and ability: Own the ability necessary to carry out the overseas assignment.

2. Others-oriented dimension

- (1)Develop relationship: The ability to make long and sustained friendship.
- (2)Willing to communicate: The ability and willingness to take initiative to communicate with local people.

3. Cognitive dimension

The cognitive ability to understand why the local people have their own unique behavior and performance.

4. Cultural-toughness dimension

The ability to involve in different national culture.

Mendenhall & Oddou (1985) also suggested that the recruiting of expatriate should also consider these ability dimensions. They will make the expatriate better adjusted in their overseas assignment.

The related studies on emotional intelligence.

Emotional intelligence also called emotional quotient (EQ). Goleman (1996) mentioned that the study by Harvard University indicated that a person's achievement is determined 20% by IQ. The other 80% are determined by other factors. IQ or aptitude test can not accurately predict a person's achievement. Goleman (1966) mentioned the development process of EQ concept:

- (1)Thorndike in his 1920 article pointed that social intelligence is part of IQ. So called social intelligence is the ability to understand other's thinking, behavior and respond accordingly.
- (2)Robert Sternberg stated that interpersonal skill is one of the most important characteristics to be seen as a smart people in other's eyes.
- (3)Howard Gardner pointed that a single IQ does not determine the human achievement. There is at least seven different intellectual abilities include language, mathematics-logic, spatial ability, kinetic-motor ability, music ability, interpersonal skill, introspect ability.
- (4)Salovey and Mayer think there are five different EQ: recognize one's own emotion, well manage one's own emotion, self-encourage, and recognize other's emotion and the management of interpersonal relationship.
- (5)Danial Goleman using his sharp observation wrote his bestseller " EQ ", make the EQ concept become a household well-known term.

American "Time" and "Fortune" magazine also published special issues pointed that EQ is the most important factor affected a person's career development. In the decision for promotion or downsizing, EQ is more important than IQ (Salovey & Mayer, 1990). Chan (1997) in his study of information management personnel found that the people with higher EQ have less negative emotion, less oversensitive in interpersonal relationship, higher internal and external job satisfaction, better career planning ability, better teamwork management skill.

The related studies on entrepreneurship

The entrepreneurship is a mentality to create, to change, and to search for development. Entrepreneurship is a process to create something from nothing, and to look for new profit and new opportunity. Morris (1994) defined entrepreneurship as " The process of value creation based on the combination of special resources and the



development of opportunity, and the merge of both." It includes three dimensions: (1) innovativeness -- to develop unique product, create new service of production process; (2) Risk-taking -- to search or develop opportunity. The chance for this opportunity to fail is very high; (3) Proactiveness -- emphasize the creativity and persistence of overcoming the difficulties until the total fulfillment of new concept.

The past forty years' economic achievement in Taiwan is the result of numerous Taiwanese small to medium size companies display their entrepreneurship. According to Nishihara (198), there are some factors related to entrepreneurship. A company with high entrepreneurship would actively develop new market, new product, have highly competitive know-how and technique. High rank managers have entrepreneurship, have risk-taking and challenging spirit. The company has flexibility, can change when the environment has changed, have abundant social connection, emphasize down to earth hardworking, and actively cultivate outstanding employee. Nishihara (1998) using entrepreneurship inventory is his study found that company with high entrepreneurship tends to have productivity, high job satisfaction and high company performance.

The related studies on organizational commitment

Scholars proposed several different definition of organizational commitment. Meyer & Paunonem et. al. (1989) defined organizational commitment as "A person's high degree of identification and involvement to a specific organization". They think that the organizational commitment is "a tendency that an organization's member reluctant to leave the organization for the reason of income, position, professional freedom, or friendship with colleague". This tendency display in three directions; (1) identify with an organization's goals and values. (2) high involved in work. (3) loyal as an organization's member. Porter, Steers, Mowday and Boulin (1974) think that organization commitment is the degree that a person identify and involve with a specific organization. The people with strong organization commitment display three tendencies: (1) firmly belief and accept the goals and values of an organization (2) willing to work harder for the organization (3) eager to stay as an organization's member. Steers (1977) in his organization model indicated that a personal characteristic, job characteristics, work experience will affect organizational commitment. Organizational commitment will also effect the willingness to stay working, attendance, and job performance.

Hwang (1995) found that the voluntary expatriates have higher organization commitment than involuntary expatriates. Chiu (1993) found that the empowerment leadership has higher commitment in organizational value and willingness to stay. Achievement motivation and locus of control have significant explanation power on organizational commitment. Choo (1991) found that the person with internal locus of control have higher organizational commitment than the person with external locus of control. Lee (1995) and Cheng (1995) found that the different dimensions in organizational commitment have negative correlation with the intention of quitting. Chang (1992) found a significant correlation between organizational morale and organizational commitment.

RESEARCH METHODOLOGY

Sample

The subjects in this study are the expatriates working in Taiwanese subsidiary company in Mainland China. The company's name and address is obtained from the roster published by the China Industry Association. A total of 750 questionnaires are mailed. One hundred and fifty-two valid questionnaires have returned. The return rate is 20.5%.

Research Instrument

There are six inventories used in this study:

(1) Overseas Adjustment Inventory

This inventory has 18 items includes culture, life and work adjustment. This inventory is modified from the inventory used by Ku (1993) and Ko (1994). It is a 6 points Likert type inventory. The higher score indicates better overseas adjustment.

(2) Work Role Characteristics Inventory

This inventory has 6 items includes work role conflict, ambiguity, and overload. This inventory is based on the inventory developed by Torbiorn (1982), Ku (1993) and Ko (1994).

(3) Locus of Control Inventory

This inventory has 5 items for internal locus of control, 5 items for external locus of control. This inventory is based on the inventory used by Ko (1994). The higher score indicates more external locus of control.

(4) Emotional Quotient (EQ) Inventory

This inventory has 28 items includes seven dimensions: control emotion, adjust mood, careful in speech and act, self-encourage, smooth interpersonal relationship, social skill, observant in other's feeling. This inventory is developed by Lii and Wong (Chen, 1997).

(5) Organizational Commitment Inventory

This inventory has 15 items include two dimensions: effort and stay commitment. This inventory is based on the inventory developed by Porter, Steer, Mowday, and Boulian (1974) and Wang (1996).

(6) Corporate Entrepreneurship Inventory

This inventory has 10 items include two dimensions: corporate ingenuity and endeavor. This inventory is based on the instrument used by Nishihara (1998).

Reliability and validity of the instrument

The content of all the instrument used in this study are based on theories, modified from the instruments used by various scholars in their studies, and have thoroughly discussed with human resources managers in business companies, therefore, the



instrument should have proved content validity. The reliability test is based on Cronbach's alpha. The result is shown in table 1. The reliability coefficient ranged from 0.76 to 0.89.

Table 1. The definition and Cronbach alpha of the variables

Variables	Definition	Cronbach a	Variables	Definition	Cronbach a
Total adjustment	Self adjustment ? life adjustment ? career adjustment	.84	poor work role	Including work role ambiguity, conflict, and overload	.82
stay commitment	Continue to work for the company	.83	corporate ingenuity	Develop new product, new technology, new market, etc.	.85
effort commitment	Doing one's best to serve the company	.85	corporate endeavor	Emphasize hard working, develop employees' potential, etc.	.81
Emotional intelligence	Including self-adjustment ? self-encouragement? good interpersonal relationship, etc.	.89	external locus of control	Believe in one's life is determined and controlled by fate, Chance, opportunity and outside forces beyond one's own control	.76

RESULT AND DISCUSSION

The analysis on demographic data

The demographically data of 152 subjects in this study are shown in Table 2.

1. Sex: More males (86.8%) than female (12.5%).
2. Age: the majority is above age 36 (71%). Very few is below age 30 (8.6%)
3. Education: The majority is above junior college level (77%)
4. Position: Most are high rank managers (59.9%)
5. Department: the majority is in production (31.6). Small number in R & D (5.9%)
6. Assignment duration: The majority is above 1 year (79.8%)
7. Previous overseas working experience: The majority does not have previous overseas working experience (53.3%).
8. Relation with company: The majority is employee (59.9%)
9. Company size: Among the 152 subjects, 25% work in the company with number of employee less than 100, 36.8% work in the company between 100 and 300 employee, 38.2% work in the company above 300 employee. In this study, the company size was divided into two groups; those subjects working in company size below 300 employees is in one group, above 300 employee is in another group.

Table2 Demographic data of the sample

variable	No.	%	variable	No.	%			
Sex	male	132	86.8	Duration	below 1 yr.	30	19.7	
	Female	19	12.5		1-2 yr.	36	23.7	
	N/A	1	0.7		2-5 yr.	56	36.8	
			Above 5 yr.		26	17.1		
			N/A		4	2.6		
Age	below 30	13	8.6	Overseas	yes	69	45.4	
	31-35	30	19.7	Experience	no	81	53.3	
	36-40	37	24.3		N/A	2	1.3	
	41-45	42	27.6					
	above 46	29	19.1					
N/A	1	0.7						
Education	below S.H.Sch.	35	23.0	Relation	owner	8	5.3	
	J. College	56	36.8		W/company	stockholder	37	24.3
	College	55	36.2			Staff	91	59.9
	Graduate Sch.	4	2.6		N/A	16	10.5	
N/A	2	1.3						
Position	Hi. Manager	91	59.9	No. of Employee	below 100	38	25.0	
	Md. Manager	45	29.6		100 ~ 300	56	36.8	
	Low Manager	6	3.9		Above 300	58	38.2	
	N/A	10	6.6					
Depart.	Marketing	29	19.1					
	Production	48	31.6					
	R & D	9	5.9					
	Admin.	35	23.0					
	Cross-Depart.	18	11.8					
N/A	13	8.6						

Correlation between adjustment, commitment and their predictors

The correlation between overseas adjustment, organizational commitment and their predictors (personal attributes and organizational attributes) is shown in Table 3.

Table 3 indicates that for all the 12 correlation between adjustment, commitment and personal attributes only 3 correlation is non-significant. For all the 9 correlation between adjustment, commitment and organizational attributes only 2 correlation is non-significant. The results can be summarized as follows:

1. The more expatriate perceived their work role conflict, ambiguity and overload, the poorer their overseas adjustment. The expatriate worked in Mainland China faced the work role changed. They are squeezed in between the parent company and the local workers, caused role conflict. Many new work roles is highly demanding, more than they are capable to handle. Therefore, the feeling of difficulties in overseas adjustment is higher.
2. The people with higher score in external locus of control have better overseas adjustment. This result is different from the study of Ko (1994). According to literature, the relation between locus of control and interpersonal relationship is still inconclusive. Rotter (1966) thinks that the people with internal locus of control is prone to resist outside pressure, the people with external locus of control is more



submissive and more easy when facing the dominance of outside forces. Petzzel & Gynther (1970) in their study indicated that when people with internal locus of control facing uncontrollable situation, because it is beyond their expectation for every thing under control, they would feel more uncomfortable than the people with external locus of control would. Therefore, the relationship between locus of control and adjustment needs to be studied more in the future.

3. The higher the expatriate perceived their corporate endeavor the better the expatriate's overseas adjustment. When expatriate perceived that their company has challenging spirit, own highly competitive know-how and technology, actively develop new market, new product, down to earth working hard, cultivate outstanding employee, then the expatriate would have better overseas adjustment.
4. The expatriate working in large size companies have better adjustment than those do in SMC. Big company usually has better social connection, provide better fringe benefit and job security than SMC. Moreover, big company can afford to send more expatriate to an overseas subsidiary company, thus the expatriate's work role is less overload, less ambiguous, therefore, the expatriate in big company is better adjusted than those in SMC.
5. The higher the poor work role, the lower the organizational commitment. The expatriate usually has to play many different work roles. They have to handle production, finance, personnel and marketing. Their work role is overload and ambiguous. This poor work role characteristic is the major factor that affects the expatriate's organizational commitment.
6. The expatriate with higher score in external locus of control, the lower is his stay commitment. It seems that the expatriate with internal locus of control when facing difficult working situation has a strong intention to control his environment, thus, display a higher stay commitment. On the contrary, the expatriate with external locus of control can not take the challenge from difficult working environment, display a lower stay commitment.
7. The expatriate with higher EQ tends to have higher organizational commitment. Most of the Taiwanese subsidiary company in Mainland China are located in remote and isolated area, no recreation, meager outside information, low safety guarantee. Most Taiwanese expatriate in Mainland China is very hard working. Their leisure time is dull. Only the people with high EQ could highly involve in their work and stay working for the company.
8. The higher the corporate ingenuity and endeavor, the higher the employee's organizational commitment, A company with high entrepreneurship tends to have highly committed expatriates.

Table 3 Correlation among total adjustment, organizational commitment, personal attributes and organizational attributes

Variables	Personal attributes				Organizational attributes		
	Emotional intelligence	External locus of control	Job Rank	Poor work Role	Corporate ingenuity	Corporate endeavor	Company Size
Total adjustment	.18	.20*	.12	.45***	.39***	.31***	.32***
Stay commitment	.45***	-.28***	.26**	.55***	.34***	.40***	.11
Effort commitment	.58***	-.18	.37***	.51***	.47***	.59***	.09

The multiple regression on overseas adjustment

Using the four personal attributes and two organizational attributes to predict the overseas adjustment, the result is shown in Table 4. There are three variables into the regression equation. These three variables combined can explain 39% variance of overseas adjustment. The poor work role has the largest explanation power (beta=-.39). Its impact on overseas adjustment is negative. The next is external locus of control (beta=.28). Its impact is positive. The third is corporate ingenuity (beta=.23). Its impact is also positive.

Table 4. Regression analysis for the prediction of overseas adjustment

Predictor	b	SE	Beta t-value
Poor work role	-.30	.06	-.39 -4.90***
External locus of control	.22	.06	.28 3.94***
Emotional intelligence	-.20	.12	-.14 -1.67
Corporate ingenuity	.21	.08	.23 2.54**
Corporate endeavor	.04	.09	.05 .50
Job rank	.12	.10	.08 1.16
Company size	.36	.12	.22 3.06**
Intercept	3.13	.67	4.61***
R = .63 R ² = .39 Adjusted R ² = .36			

The multiple regression on stay commitment

The result of stepwise multiple regression on stay commitment is shown in Table 5. The three variables in the regression equation combined can explain 43% variance of stay commitment. The largest predictor is poor work role (beta=-.37). Its impact on stay commitment is negative. The next one is external locus of control (beta=-.20). Its impact is also negative. The third one is EQ (beta=.19). Its impact is positive.



Table 5. Regression analysis for the prediction of stay commitment

Predictor	b	SE	Beta t-value
Poor work role	-.33	.07	-.37 -4.78***
External locus of control	-.19	.06	-.20 -2.96**
Emotional intelligence	.33	.14	.19 2.41*
Corporate ingenuity	.06	.09	.05 .64
Corporate endeavor	.12	.10	.11 1.19
Job rank	.19	.12	.11 1.64
Company size	-.05	.13	-.02 -.34
Intercept	3.38	.79	4.33***
R = .66 R ² = .43 Adjusted R ² = .40			

The result of stepwise multiple regression on effort commitment is shown in Table 6. The four variables in the regression equation combined can explain 66% variance of effort commitment. The largest predictor is stay commitment (beta=.39). The second one is EQ (beta=.22). The third one is corporate endeavor (beta=.21). The fourth one in rank (beta=.15). These four variables all have positive impact on the effort commitment.

Table 6. Regression analysis for the prediction of effort commitment

Predictor	b	SE	Beta	t-value
Poor work role	-.05	.05	-.08	-1.19
External locus of control	-.02	.04	-.03	-.56
Emotional intelligence	.30	.08	.22	3.54***
Corporate ingenuity	.07	.06	.08	1.27
Corporate endeavor	.19	.06	.21	2.99**
Job rank	.19	.07	.15	2.72**
Company size	-.06	.08	-.04	-.71
Stay commitment	.31	.05	.39	5.80***
Intercept	.44	.50		.87
R = .81 R ² = .66 Adjusted R ² = .64				

The linear structure model for predicting overseas adjustment and organizational commitment for the small and medium size company sample

The evaluation of linear structure model for the SMC sample (n = 94) in this study was carried out with the AMOS 3.6 software from SPSS. Three different index were used (1) the measures of absolute fit: χ^2 value small and non-significant? χ^2/df is less than 2? RMR (root mean square residual) close to 0 or less than .10? GFI (goodness of fit index) larger than .90? (2) the measure of incremental fit: NFI (normed fit index) larger than .80? (3) the measure of parsimonious fit: AGFI (adjusted goodness of fit index) larger than .80? The results of the AMOS analyses are shown in Table 7 which reveals that the model is satisfactory.

Table 7 Summary of AMOS Model Results for the SMC Sample

Measures of fit	Measures of absolute fit				Measure of incremental fit	Measure of parsimonious fit		
	Df	χ^2	p	χ^2/df	RMR	GFI	NFI	AGFI
Rules of thumb		>.05	<2.00	<.10	>.90	>.90	>.80	>.80
Model	16	16.62	0.41*	1.039*	0.04*	0.971*	.960*	0.919*

* Satisfactory fit

From figure 1."Path diagram for the prediction model of SMC sample", the results can be explained in two parts. One part is the correlation among the variables of predictors. Another part is the relationship among predicting variable and the criteria variables.

The correlation among the variables of predictors

1. corporate ingenuity and corporate endeavor are parts of corporate entrepreneurship. There is a high correlation between them ($r = .60$, $p < .001$). This indicates that the expatriate perceived the company with high entrepreneurship is high in both corporate ingenuity and corporate endeavor.
2. There is a positive correlation between the expatriate's EQ and their perceived corporate ingenuity ($r = .40$, $p < .001$). Its correlation with corporate endeavor is also positive ($r = .46$, $p < .001$). This indicates that the expatriate with high EQ would work in company with high entrepreneurship. Vice versa, the company with high entrepreneurship would attract high EQ employee
3. There is negative correlation between poor work role and the employee perceived corporate ingenuity ($r = -.35$, $p < .001$), and negative correlation with corporate endeavor ($r = -.41$, $p < .001$). It seems that the expatriate in company with low entrepreneurship would feel poorer work role.
4. There is negative correlation between expatriate's EQ and their poor work role ($r = -.41$, $p < .001$). It seems that the expatriate with high EQ could handle more work role challenge.

The relationship between predicting variables and the criterion variables

1. Poor work role is the strongest predictors for overseas adjustment ($\beta = -.39$) and stay commitment ($\beta = .41$). Because the poor work role characteristics (ambiguity, conflict and overload) cause the Taiwanese expatriate in Mainland feel unadjusted and reduce their willingness to stay working in the company.
2. In this model, overseas adjustment did not render strong influence on the stay commitment. But the stay commitment does render strong influence on effort commitment. ($\beta = .46$). It is possible that because same language and same race, the Taiwanese expatriate in Mainland China did not feel difficult in their adjustment. But, because for the reason of far away from family, harsh working condition, lack recreation, and so forth, good adjustment did not bring strong influence on stay and effort commitment

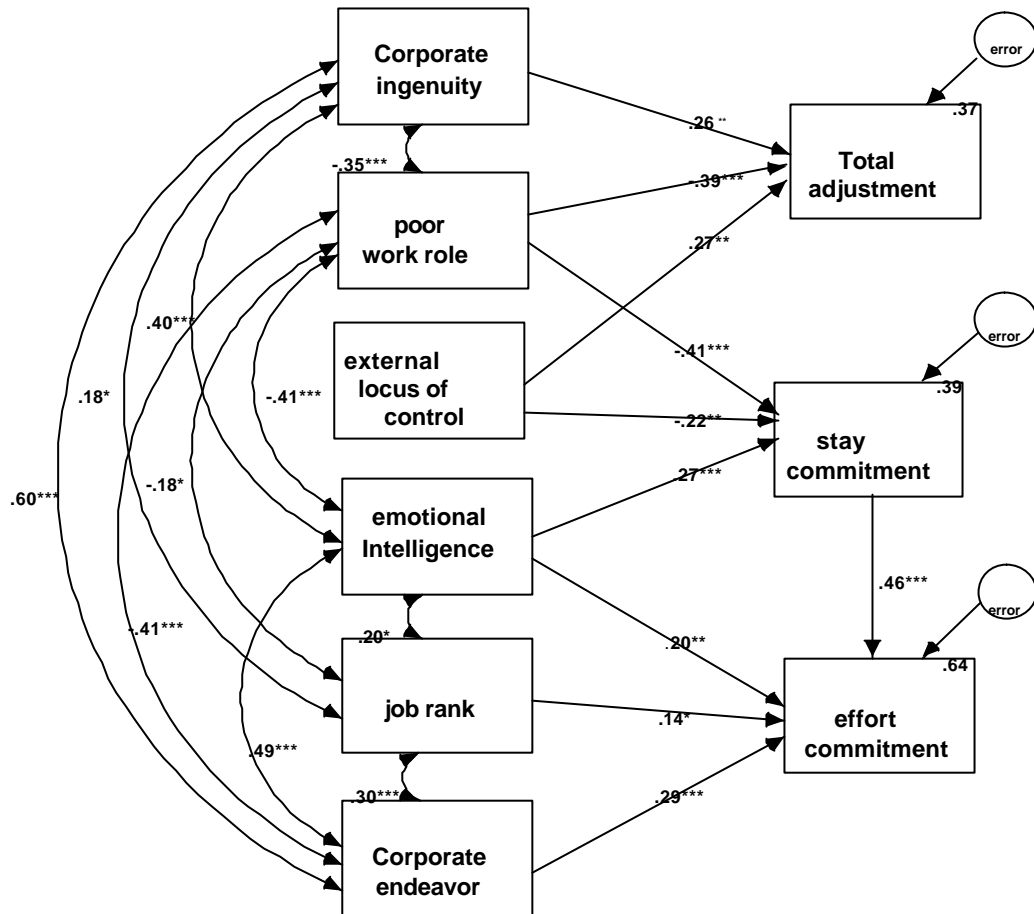


Figure1:Path Diagram for th Prediction Model of the SMC Sample

The linear structure model for predicting overseas adjustment and organizational commitment for the entire sample

The evaluation of linear structure model for the entire sample (n = 152) in this study was also carried out with the AMOS 3.6 software from SPSS. The results of the AMOS analyses are shown in Table 8 which reveals that the model is satisfactory.

Table 8 Summary of AMOS Model Results for the Entire Sample

Measures of fit	Measures of absolute fit				Measure of incremental fit		Measure of parsimonious fit	
	Df	χ^2	p	χ^2/df	RMR	GFI	NFI	AGFI
Rules of thumb			>.05	<2.00	<.10	>.90	>.90	>.80
Model	21	25.00	0.25*	1.19*	0.04*	0.965*	.909*	0.946*

* Satisfactory fit

The difference between Figure 1 and Figure 2 is that Figure 2 has one additional predicting variable, "company size". The other results are about the same. This indicates that the linear structure model is very stable, did not change very much when the number of subjects changed. The extra information provided by Figure 2 are as follows:

1. There are negative correlation between company size and poor work role ($r = -.18$, $p < .05$). The expatriates working in small to medium size companies have higher work role ambiguity, conflict and overload.
2. The standard regression coefficient (beta) between company size and expatriate's overseas adjustment is .20. ($p < .01$). It indicates that the expatriate in small to medium size companies has poor overseas adjustment than the expatriate in big company.

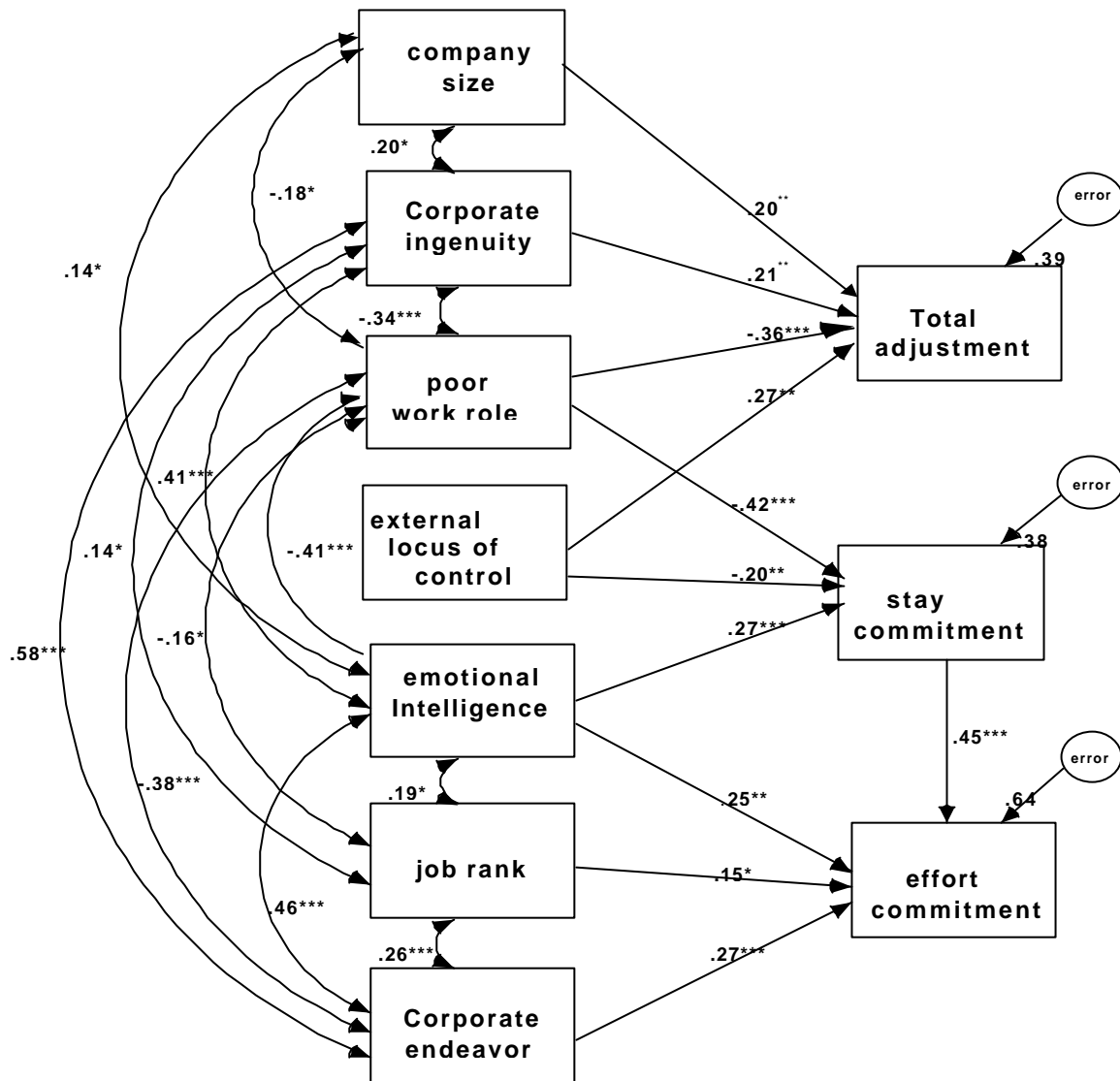


Figure 2: Path diagram for the prediction model Of the entire sample

CONCLUSION AND SUGGESTION

The main findings from this study are as follows:

1. This study found that the major variables affecting the overseas adjustment of expatriate working in Taiwanese subsidiary company in Mainland China in order are poor work role, external locus of control, corporate ingenuity, company size. The major variables affecting the stay commitment in order as poor work role, EQ, external locus of control. The major variables affecting the effort commitment in order is stay commitment, corporate endeavor, EQ, and rank.
2. The expatriate in a company with high entrepreneurship display better overseas adjustment. There are good and bad Taiwanese investors in Mainland China. In the coastal region, almost everyday there is Taiwanese company folding up. According to the field study by the researcher, many of the failed Taiwanese company caused by the lack of entrepreneurship of the company owner. Many Taiwanese owner indulged in sex and gambling. For those companies with high entrepreneurship, their expatriate will display high stay and effort commitment, and help bring success to the company and themselves.
3. The expatriate in SMC has higher work role conflict, ambiguity, and overload, lower EQ, and poorer overseas adjustment. It seems that the SMC has poorer working condition, could not attract high EQ employee.
4. The people with external locus of control have better overseas adjustment but poorer stay commitment. It seems that in Mainland China personal connection matters more than law and regulation. The person with external locus of control beliefs in fate and chance did not feel so helpless and frustrated than the person with internal locus of control. Nevertheless, the external locus control person did not display strong stay commitment of working in the difficult and high challenge environment.
5. The expatriate with high work role conflict, ambiguity and overload has poorer overseas adjustment and stay commitment. Work role characteristics have strong influence on the adjustment and commitment. Many Taiwanese expatriates, especially for those working in the SMC, they are overloaded with different work role including production, personnel, finance, and marketing. Many of the expatriates are a section chief in Taiwan parent company. They are in charge less than ten subordinates. When they are assigned to Mainland China their position is manager or general manager. They are in charge more than several hundred subordinates.
6. High EQ expatriates has good overseas adjustment, high organizational commitment. EQ includes control emotion, adjust mood, careful in speech and act, self-encourage, smooth social relation, observant in other's feeling and emotion. Taiwanese expatriate in Mainland China mostly live alone in a new environment, under huge work stress, lacks leisure activity. They need to create their own social connection, pull themselves out of loneliness, frustration and low spirit. Only those with high EQ can circumvent all difficulty and stay on their track and get their job done. Therefore,



high EQ is related with overseas adjustment and commitment.

7. High EQ is also related with perceived corporate ingenuity and corporate endeavor. It seems that high EQ expatriate and company with entrepreneurship is mutually attractive. Many Taiwanese investors in Mainland China is simply moving their old machinery to Mainland China to prolong their business life cycle for three to five years. Only work for the company with high entrepreneurship can the high EQ expatriate feel they have promising future. Therefore, it appears that high EQ expatriate and high entrepreneurship company is mutually selected.
8. Work role characteristics and corporate entrepreneurship has a negative correlation. The company without entrepreneurship would lack long term planning, indecisive business strategy, ambiguous responsibility and authority, therefore, the expatriate would feel work role conflict, ambiguous, and overloading.
9. Expatriate's EQ and work role characteristics have negative correlation. The expatriate with high EQ can sustain high work pressure, perceive their work role more positively. High EQ expatriate know s better in stress management, display better interpersonal relationship, can handle the challenge better, therefore, high EQ expatriate feel better with their work role characteristics.
10. EQ is a good indicator for an effective expatriate. It is suggested that EQ inventory can be used for the selection of an aspirant for overseas position. An intensive cross-culture training before an expatriate was assigned overseas position is necessary. Many trap and pitfall can be learned before the expatriate goes to the host country. Hire more host country national to work in the managerial position is a direction the Taiwanese investor has to take. Let the local manager to deal with the local workers to reduce the cost and improve the efficiency
11. The last, but not the least important, is to beef-up the official support system to the SMC investors. It is a miracle in the world economic history that more than forty thousand SMC are investing overseas. But, the finding from this study indicate that the expatriate in SMC encountered more adjustment problem than the big company. It is suggested that the government should provide various services for helping the SMC overseas investors. Such as creating business alliance for SMC in similar industry to increase their competitive edge, developing recruitment testing instrument for SMC, conducting cross-culture training for the SMC expatriate before they leaving for overseas position, negotiate with host country for the benefits of SMC investors, etc. There are so many things that our government can do for our SMC overseas investors. The SMC entrepreneurs are the major contributors for Taiwanese economic success. Let's do all we can to help them contribute to Taiwan's prosperity.

REFERENCES

- Black, J. S.? Mendenhall, M. (1990), Cross-cultural training effectiveness: A review and theoretical framework for future research, Academy of Management Review, 15, pp.113-136.
- Chang, Shin-Gi (1992) The Impact of Organizational Commitment on Corporate Morale -- The case study on Taiwan nuclear Power Plant. MBA thesis, Graduate School of Management Science, national Chiao-Tung University.
- Chen, Gen-hong (1997) The study of Information Management professional's EQ. MBA thesis, Graduate School of Information Management, Dayeh University.
- Cheng, Wen-Jun (1995) The Relationship among Work Pressure, Job Satisfaction, Organizational Commitment and the Tendency for Quitting -- the example of private bus driver in Taipei City. Master thesis, Graduate School of Labor Studies. Chinese Culture University.
- Chiu, Jian-Chen (1994) The relationship among leadership style, subordinate's personality, and organizational commitment, MBA thesis, Graduate School of International Business Studies, Chinese Culture University
- Church, A. T. (1982), Sojourner Adjustment, Psychological Bulletin, 91, pp.540-571.
- Gardner, H. (1983), Frames of Mind. New York: Basic Book.
- Goleman, D. (1995), Emotional intelligence. New York: Bantam Books.
- Grosse, R. & Kujawa, D. (1992), International Business, 2nd. ed., Boston? Irwin.
- Hwang, Kao-Long (1995) The Life and Psychological Adjustment of Taiwanese Expatriate in Mainland China. Seminar on the business culture and HRM at Taiwan and Mainland China.
- Ko, Yen-Da (1994) The adjustment of Taiwanese expatriate managers in Mainland China. MBA thesis, Graduate School of Business Administration, Sun, Yat-Sen University
- Ku, Fon-Gi (1993) The Overseas Adjustment of Expatriate Managers in the Information Industry. Doctoral Dissertation, Graduate School of Business Administration, National Chengchi University.
- Lee, Shae-Li (1995) The relationship among the role conflict, organizational commitment and intention for quitting of the married career women, Master thesis, Graduate School of Home Economic Education, National Taiwan Normal University.
- Lii, Sheng-Ying (1996), "The Comparison of Overseas Staffing Experiences between



Large ? Small to Mid-size Companies in Taiwan," The 3rd Annual International Conference on Human Resource Management in the Asia-Pacific Region , pp.2-61 to 2-81, Sun Yet-Sen University Kaohsiung, Nov. 25.

Mendenhall, Mark? Gary Oddou. (1985), The Dimensions of Expatriate Acculturation. Academy of Management Review, 10, pp.39-47.

Meyer, J. P., Paunonem, S. V., Gellatly, I. R., Goffin, R. D. ? Jackson, D. N. (1989), Organizational Commitment and job Performance? It's the Nature of the Commitment That Count? , Journal of Applied Psychology, 74, pp.152-156.

Morris, M. H. (1994), Fostering Corporate Entrepreneurship ? Cross-Cultural Comparisons of The Importance of Individualism Versus Collectivism. Journal of International Business Studies, First Quarter, pp.69-77.

Nishihara, H. (1998) The study of corporate entrepreneurship and organizational performance, Keio University, Japan, workshop paper.

Oberg, K. (1960), Culture Shock? Adjustment to New Cultural Environments, Practical Anthropologist, 7, pp.177-182.

Porter, L. W., Steer, R. M. , Mowday, R. T. ? Boulian, R. V. (1974), Organizational Commitment , Job Satisfaction and Turnover among Psychiatric Techmans, Journal of Applied Psychology, 19 , pp.475-479.

Rahim, A. (1983), A model for developing key expatriate executive, Personnel Journal, 62(4), pp.313-318.

Rotter, J.B. (1966), Generalized expectancies for internal versus external control of reinforcement, Psychological Monographs, 80(1)? Whole No.609.

Salovey, P. D. & Mayer, J. D. (1990), Emotional Intelligence Imagination, Cognition and Personality, 9, pp.185-211.

Steers, R. M. (1977), Antecedents and Outcomes of Organizational Commitment, Administrative Science Quarterly, 22, pp.46-54.

Torbiörn, I. (1982), Living Abroad. John Wiley & Son.

Tung, R. L. (1984), Human Resource Planning in Japanese Multinational? A Model for U.S. Firms? Journal of International Business Studies, Fall, pp.134-149.

Wong, Gia-Chan (1997) The factors for success of the multinational corporation's expatriate, MBA thesis, Providence University

(? ? ? ? ? ? ? ? ? ? ? NSC87-2416-H-212-006)

**HIGH LEVEL MANAGEMENT DEVELOPMENT STRATEGY
FOR SMALL AND MEDIUM ENTERPRISE INVESTMENT OF
THE CHINESE TAIPEI IN MAINLAND CHINA**

Yuan-ta Ko

**Institute of Human Resource Management
National Sun Yat-sen University (Chinese Taipei)**

**HIGH LEVEL MANAGEMENT DEVELOPMENT STRATEGY FOR SMALL
AND MEDIUM ENTERPRISE INVESTMENT OF THE CHINESE TAIPEI IN
MAINLAND CHINA**

ABSTRACT

Ever since the revolutionary open of Mainland China, it has attracted a lot of foreign investment. Due to the close relationship of Chinese Taipei and China, provided the same language and same race that made the continual investment of enterprises owned by Chinese Taipei at Mainland China and took the second place among the foreign investment. So far, the number of expatriate managers who are assigned to China has run up more than 20,000 people. However, almost all of the investors feel the same way that the biggest problem of business investment and operation at China is human resource, especially the shortage of high-rank managers.

In this article, the writer would like to discuss these problems and make some recommendations and suggestions about the development strategies of high level managers, including comprehensive strategy planning, human resource management system, career plan, fair promotion system, incentive programs and family care, etc..



INTRODUCTION

Mainland China has been aggressively seeking foreign investment since its initial adaptation of the reform and open-door policy almost twenty years ago. Chinese Taipei, well known for her economic prosperity, naturally has been pursued as source of capital investment with experienced small and medium enterprise (SME) models. Mainland China with its huge market potential, inexpensive labor force, abundant raw materials, and high economic growth rates, have inevitably attracted businesses from Chinese Taipei looking for investment opportunities. In addition, slow economic growth rate, saturated market, shortage of labor, high labor cost in Chinese Taipei, as well as favorable foreign investment policy in Mainland China all have contributed to Chinese Taipei being attracted to Mainland China like cascade of magnets. Nowadays, very few business, regardless of size, would not consider the possibility of investing or cooperating with business in Mainland China.

Business from Chinese Taipei have intrinsic advantages over other countries in Mainland China because of convenient geographic proximity, common language, similar Chinese culture and customs. As a result, Chinese Taipei ranked second in Mainland China foreign investment. There are over twenty thousands long-term employees from Chinese Taipei working for business investment of Chinese Taipei in Mainland China. Annually there are over one hundred thousands people from Chinese Taipei who travel to Mainland China as businessmen and tourists. The economic and trade networks between Chinese Taipei and Mainland China have been established quite extensively.

Despite China 1996 ballistic missiles military exercise conducted near Chinese Taipei hurry and forbearance' policy, business investment from Chinese Taipei in Mainland has not slowed down. Economic and trade relationship across the strait will only become more inseparable and the growth is irreversible and seems to be sustainable. At the same time, there has been a gradual shift from labor intensive, low value added products to high-tech and capital intensive products.

THREE STAGES OF DEVELOPMENT

Business investment from Chinese Taipei in Mainland China thus far can be divided into three stages with different characteristics.

1979-1987

This period marked the beginning of reform and open door policy characterized by barter trading through fishermen and indirect investment between Chinese Taipei and Mainland China. Industries being involved include umbrella, shoes, bicycle, and other labor intensive and low value added industries with little room for growth in Chinese Taipei. Many of such investments started with skilled master with entrepreneurial spirit and used equipment willing to take risks in hope of creating a new dawn for some of the sunset industries in Chinese Taipei.

1982-1992

In 1987, the Republic of China loosened foreign exchange control and lifted the restriction for travel to Mainland China by allowing people to visit relatives in Mainland China. Since then, the influx of businessmen and tourists going to Mainland China looking for connection and investment opportunities have been incessant. Many large enterprises have started product testing for target market and conducted extensive research and feasibility studies.

1992-1999

Deng, Xiao-Ping tour of the South encouraged large scale reform formally established the policy of "socialist market economy". At the same time, the Republic of China government began to allow indirect investment resulting in even greater influx of investment in Mainland China. This movement not only includes SME but also large enterprise. Initially, joint ventures and cooperative enterprises predominated, but because of the rising problems with joint ventures, more and more solely owned enterprise began to emerge. Large businesses began massive deployment of its own personnel in Mainland China. Some high level managers were recruited outside the parent companies. Many small and medium enterprises have since then grown to large conglomerates.

DILEMMA OF BUSINESS INVESTMENT FROM CHINESE TAIPEI IN MAINLAND CHINA

Politically, intricate and delicate relationship between Chinese Taipei and Mainland China, have created, on the one hand, favorable economic and investment policies to attract capital investment from Chinese Taipei, and, on the other hand, Mainland China had applied pressure tactics by treating Chinese Taipei only as a province of China which makes it difficult for Chinese Taipei to function as an effective economic member in the international community.

Since July of this year (1999), after president D.H. Lee's remark of a "special state to state relationship between Chinese Taipei and China" which has created havoc, uncertainty and the potential for skirmish and military conflict, there has been a real psychological burden and increased risk for doing business in Mainland China.

Economically, difficulty of obtaining foreign exchange and bank financing, lack of protection for business and special restriction to compete in designated industries have made management and operation of businesses of Chinese Taipei in Mainland China difficult. Socially, worsening public security, widening gap between the rich and the poor, get-rich quick mentality have all become grave concerns for businesses of Chinese Taipei in Mainland China.

Some of the common problems with internal management confronting businesses from Chinese Taipei include the following: (a) The educational level of employees are generally not high, and many of them are infected with big iron-bow or entitlement mentality; (b) Many of them do not have concepts of quality and cost; (c) Lack of mid-level managers and difficulty for the overseas managers to adapt to work and to live. These problems presented great challenges for enterprises from Chinese Taipei to tackle. Other than political tension which



requires wisdom and take creative leadership from both side to resolve, economic, trading, social and legal environment have showed sign of improvement. As Mainland China joins the World Trade Organization (WTO), significant improvements can be expected. Of all the problems presented thus far, human resource development is the most basic yet profound issue.

THE PROBLEMS FACING THE ENTERPRISES OF CHINESE TAIPEI IN MAINLAND CHINA

The most thorny problems facing the enterprises of Chinese Taipei in mainland China is the shortage of mid and high level managers, the problems with work Adaptability and living adjustment for the family. and the deployment of multinational high level managers for operations. These problems are further analyzed below in more depth.

1. Problems with Shortage of Mid and High Level Manager

As mentioned above, the owners, in the majority of the small and medium enterprises having invested in Mainland China, usually got started with several skilled masters, their family and relatives. At the beginning, the small family-ownership model is continued with no help from professional managers. However, as small businesses grows step by step, the organization develops like a little baby grows from an infant to a teenager and the adult. Not only had the capital investment expanded, the number of employees had multiplied from a dozen to hundreds and even to thousands.

During this stage, the responsibility of the business gradually exceeded the ability of the operational manager and family-ownership business model is no longer suitable for that of a large company. The need for a reasonable and effective management models becomes critical.

Effective managers can come from either Chinese Taipei or Mainland China. However, the lack of international and cross-cultural management experiences become a barrier and bottleneck for getting enough overseas managers. There is a great demand for managers with international experience or potential. As a result, managers had to be recruited from outside the company and after a brief orientation at the corporate headquarters, they were assigned to work in Mainland China. If the needed managers can not be found in Chinese Taipei, the managers have to be recruited in Mainland China and then be trained by the company. It is not easy to find the mid and high level management and technical experts in Mainland China because during the Cultural Revolution very few graduates with business background were produced. Lack of systematic and integrated technical and managerial training will continue to be the bottleneck for human resource development in Mainland China.

Corporate training can not produce enough managers in a short period of time. Some companies do have the vision to train their managers, however, most of the companies do not have the personnel to materialize this vision. Training consultants are not effective because they are only temporary and are asked to serve as an internal trainer. Corporate training will definitely play a critical role for systematic and long term human resource development. Companies had to bear the risk of losing those trained managers because almost all the enterprises with overseas investment are desperately in need of the mid and

high level managers. Many companies competitively tried to recruit experienced or trained managers. Further more, because of the different standards of work ethics and varying degrees of loyalty to the company, the managers were tempted to change jobs and positions with money and power. The managers will likely to choose to job hopping if there is no strategic career planning along with integrated human resource development and management systems in place.

2. Problems with Work Adaptability and Living Adjustment

Businessmen of Chinese Taipei who invested in Mainland China at initial open-door stage lacked the management experiences on international investment. Normally, the staff's desire to work overseas is not very high. Although the Island and Mainland China share the same language, cultural tradition and customs, forty years separation has resulted in disparity between them.

Ten years of cultural revolution had even widened the gap, thus it is inevitable for managers with overseas assignment to encounter problems with adaptability. In general, the overseas managers needed to adapt and adjust in the areas of work, psychological orientation, living condition, and family. Adapting to the new working environment have taken a heavy toll on the managers:

a) Changing Roles and Job Content

The managers sent to work in Mainland China had to face changes in working environment and job content, which follows the change of roles and responsibilities. First of all, the promotion to work Mainland China normally involved expanded role and more responsibilities for the manager.

For example, from supervisory position to manager position and from manager role to general manager role. All this come with it an increase in authority and increase in span of control and new sphere of influence.

Secondly, for cost consideration, an overseas manager might be asked to take additional responsibilities and cover other unfamiliar work areas. Further more, the managers assigned to work for a joint venture had to deal with the different demands of at least two different authorities under the cooperative administration of partnership from two different economic systems. This is in stark contrast to working under a single chain of command and it produces both role confusion and dilemma.

b) Stress from Work Overload

The work overload can come from either the new yet strange working environment, or the added responsibility caused by changing role and job content.

The stress and burden can also come from the anxiety from training required because of the lack of knowledge and experience in dealing with the new business expansion. Most of the managers with overseas assignment had to work constantly overtime, and all felt the stress from work overload.



c) Training Dilemma

Grassroot employees in Mainland China, in general, have different standards of work ethics and varying degrees of loyalty to the authorities. Observations that have been made negative characteristics and traits did include the following: lack of initiative and sense of responsibility, ungrateful attitude, mistrust of authority, favoritism through blood relation, wasteful and misuse of corporate resource for personal gains, treachery and power struggle. All these factors had to be dealt, not at the surface, but at the root level, possibly through character training. Some of them might be as a result of both the cultural revolution and bureaucratic systems in place in Mainland China. But all of these add up to make the work of management difficult and some times training impossible.

d) Conflict of Control and Corporate Support

Investment from Chinese Taipei in Mainland China can fall into two general categories. Investments in one category starts with skilled master with entrepreneurial spirit and used equipment willing to take risks in hope of creating their own future with very minimum professional managerial experiences and system. Investment in the second category starts with inexperienced overseas managers assigned to start a subsidiary in Mainland China. As the subsidiary grow from small to medium to even sizes larger than the parent company, conflict of interests gradually arises in the following areas: clash of corporate cultures, difference in strategic corporate direction for the future, struggle for authority and span of control, allocation of corporate resources and support for expansion in Mainland China, as well as the flow of trained high level executives from corporate headquarters. All these factors add up to affect the sustainability and the long term development of high level executive for Chinese Taipei Investment in Mainland China.

3. The Deployment of Multinational High Level Managers for Operations

Because of the high cost of investment for sending a manager overseas and along with it the various problem of adaptation, not enough high level manager and technical expert can be recruited to work in Mainland China. Therefore, the trend is a steady increase of local managers being called into the executive level as they gain sufficient competency and experience.

In the future, as the companies go international, there inevitably will be an increase in demand for international managers and executives. Most small and medium enterprise of Chinese Taipei, at the board of directors and executive decision level, still lack the diversity and experience of multi-national leadership team. There is a great need to accelerate the learning process in this area.

RECOMMENDATIONS AND SUGGESTIONS

Based on the above analysis, some recommendations and suggestions for the development strategy for high level managers in enterprises of Chinese Taipei and investment in Mainland China are presented below for review and consideration

1. Comprehensive Management Structure and System

In general, the departure of high level manager are related to lack of shared dreams and vision at work or stresses from overwork. Therefore, if businesses from Chinese Taipei were to attract and retain top management executives, they must be able to clearly establish a) reasonable and effective management structure, b) clear mission and purpose, c) sound fundamental policy consistent with d) corporate culture and entrepreneurial spirit, e) corporate identity system and brand image, f) quality and standard and key success factors for the business area, g) shared vision, goals, objectives and h) clear strategy for reaching the goals and objectives, i) management and project priority, and j) performance management objectives.

Through this detailed process, it is possible to attract and retain qualified people to build effective teams. This process, also give management a sense of direction and priority; it allows every high level manager to believe that there is a future for them, and that they are fully aware of their roles, responsibilities, missions, assignments and their importance. This process ultimately simplify the work of the management and lighten the workload of the high level managers.

2. Comprehensive System for Selection, Deployment, Training and Development and Retaining Systems for of International Executives

The development of high level managers must begin with proper selection process. Only if there is effective recruiting and selection strategy, can the company attract employees who strive for excellence and can enrich the corporate culture. Once top notch talents are recruited, they must be given proper roles and responsibility in order to fulfill their potential and soar with their strengths. Proper competency and interests assessment is then necessary in order to develop strategic career planning with reasonable training and development and job rotation. On top of the these, attractive and suitable compensation and incentive plans are still needed to retain the best talents.

3. Effective Performance Assessment and Management System

Performance management is one of the most critical link in the management systems of a company. It must be integrated with the strategic management, annual business plan, setting of the company policy as well as the process of management by objective. The purpose of performance assessment and monitoring is not only to ensure the accomplishment of the corporate objectives, but also to understand the strength and weakness of the team members and to make timely feedback in order to integrate the need for improvement into the training and development plan.

4. Well Designed Succession Plan

Integrating the human resource development plan and the organizational development plan based on company? strategic management plan will ensure the quality as well as the quantity of human resources for organization growth. Even more important is the succession plan for key executive position. The succession plan allows the high level executives to integrate their career planning and maintains the reservoir of qualified managers to step in during times of key executive vacancy.



5. Fair, Equitable, Reasonable and Open Promotion System

Water flows downward, and man wants to climb higher. These are nature's tendencies. Every one wants to challenge his own ability to the extreme and to take initiatives and responsibilities in order to contribute competitively and look for opportunities for promotion. Only through fair, equitable, reasonable and open process for selection and promotion along with effective performance assessment and monitoring, can the potential of the individuals be capitalized and the morale of the teams raised to a new height.

6. Designing Effective Incentive Program

An effective incentive program need to be designed and put in place in order recruit and retain high level managers. This includes variable salary package, stock bonus, stock options program, corporate entrepreneurialship program, retirement and benefit plan, and insurance programs for employee to choose from. These will allow high level managers to enjoy the fruits of their own labor. Further more, this will foster partnership relationship which allows them to create their own future of performance and reward.

7. Globalization of the Deployment of International Executive

Markets in Mainland China have already become a stage for international competition. Many of the global fortune 500 have established their presence there. Internationalization of the high level management executive will be inevitable in light of even more intense global competition in the future. It is important for local staff in mainland China to realize that recruiting high level management from abroad is only an expedient strategy for the transition period. In the future, recruiting of the high level executive will be more and more globalized. Anyone who has the potential as valuable human capital will be treasured by the company. This policy of globalization of the deployment of international executive will provide encouragement to the local staff to work hard and seek upward mobility. Managers from Chinese Taipei at the same time will be reminded not to just relax and idle.

8. Family Care and Support for Overseas Managers and International Executives

In order to allow the overseas managers to focus wholeheartedly on their work with no worries for their family and thus willing to stay overseas for longer terms, it is better to encourage them to take the whole family with them when accepting overseas positions. At the same time, care should be provided to the whole family in different areas.

For instance, provide orientation for the family members by preparing them mentally, and psychologically to living overseas; conduct cultural orientation for adapting to the new environment after arrival; assist them with coping strategies to empower them to solve various problems and, if necessary, provide education subsidy for their children's education. For family members who can not travel overseas, the human resource executive should visit them periodically to provide necessary support. Proper channels of communication and support system should be established to prepare for emergency and for times of need.

CONCLUSION

More than half of the small and medium enterprises lacked the international operational experiences for investment in mainland China. Further more, they lacked the experiences of training international managers. Yet, the quality of human resource development is critical, especially for the development of high-level manager which is the key for success of the small and medium enterprises in mainland China. The strategic solution for solving the fundamental problems of the shortage of qualified mid and high level managers, must be dealt with at the structural level.

The proposed recommendations and suggestions include:

- 1) Comprehensive Management structure
- 2) Comprehensive System for Selection, Deployment, Training and Development and Retaining Systems for International Executives
- 3) Effective Performance Assessment and Management System
- 4) Well Designed Succession Plan
- 5) Fair, Equitable, Reasonable and Open Promotion System
- 6) Effective Incentive Programs
- 7) Globalization of the Deployment of International Executives
- 8) Family Care and Support System for International Executives

(This article summarizes my perspectives gained from experiences of working as a human resource executive for a large food conglomerate with initial investment from Chinese Taipei. Any suggestion from scholar, expert, associates or any individual is welcomed and appreciated.)

**THE BUSINESS STRATEGY WITH THE TACTICS OF T&D
IN SMEs - A CASE STUDY IN SERVICE INDUSTRY**

I-Heng Chen

**Institute of Human Resource Management
National Sun Yat-sen University (Chinese Taipei)**

Chin-Kang Jen

**Institute of Human Resource Management
National Sun Yat-sen University (Chinese Taipei)**

**THE BUSINESS STRATEGY WITH THE TACTICS OF T&D IN SMEs
-- A CASE STUDY IN SERVICE INDUSTRY**

ABSTRACT

In the past, development efforts have been seen in rather static terms. Training was directed toward maximizing managerial effectiveness in terms of contributing to some presently perceived functional need. As firms became more long-term and strategic in their outlook, it became increasingly necessary to match the managerial training efforts of today to the strategic needs of tomorrow. If managers with development expertise are not included in the SHRP process and allowed to provide input into the overall corporate planning effort, this is unlikely to occur. There is not difference in large or small companies on training and development as well. Training and development should contribute to the attainment of short-term and long-term goals both for the company and for its individual employees. In order to be effective, a training and development program requires the full commitment and support of senior management, and it must reflect the overall philosophy of organization.

The most important and often-mentioned reason is that business performance highly depends on the behavior, aspirations and dedicated of the work force (Caldwell, 1984). If the behavior, aspiration, and dedication of the work force can be developed and directed toward supporting the overall business, positive performance outcomes are likely.

Various procedure that delineate how these two processes (business and human development) can be linked have been reported (Harvey, 1983; Sweet 1981; Winer, 1983; Wissema et al., 1981). Although each procedure attempts to achieve the same outcome, how these results are achieved differs.

Harvey (1983) suggested that if human resources development is to be integrated into the overall business plans, then it be up to the HRM staff. Because the human resources development effort cannot fulfill its maximum potential without a clear and direct link to the strategic business plan, the burden rests with the HRM staff to provide integration into the strategic planners will recognize that the HRM staff can create a plan. The HRM staff should ask planning questions, because the majority of the information required to create a strategically-linked human resources development plan must come from the corporate planners, communication between these department is vital.

The purpose of researchers is to examine and support how the training and development program can be implemented and be integrated into the business strategy in a small and medium sized company. To answer and support those concepts the researchers interview a chain-store company, which is located in Kaohsiung City. The results support the researchers' concepts of a small and medium sized company can be benefit by implementing the training program and integrating into the business strategy.



INTRODUCTION

In the past, development efforts have been seen in rather static terms. Training was directed toward maximizing managerial effectiveness in terms of contributing to some presently perceived functional need. As firms became more long-term and strategic in their outlook, it became increasingly necessary to match the managerial training efforts of today to the strategic needs of tomorrow. If managers with development expertise are not included in the SHRP process and allowed to provide input into the overall corporate planning effort, this is unlikely to occur. Besides, there is no difference in large or small companies in training and development. Training and development should contribute to the attainment of short-term and long-term goals both for the company and for its individual employees.

In order to be effective, a training and development program requires the full commitment and support of senior management, and it must reflect the overall philosophy of organization. The most important and often-mentioned reason is that business performance highly depends on the behavior, aspirations and dedication of the work force (Caldwell, 1984). If the behavior, aspirations, and dedication of the work force can be developed and directed toward supporting the overall business, positive performance outcomes are likely.

Various procedures that delineate how these two processes (business and human development) can be linked have been reported (Harvey, 1983; Sweet 1981; Winer, 1983; Wissema et al., 1981). Although each procedure attempts to achieve the same outcome, how these results are achieved differs.

Harvey (1983) suggested that if human resources development is to be integrated into the overall business plans, it is then up to the HRM staff. Because the human resources development cannot fulfill its maximum potential without a clear and direct link to the strategic business plan, the burden lies with the HRM staff to provide integration into the strategic planners. The HRM staff should ask planning questions, because the majority of information required to create a strategically-linked human resources development plan must come from the corporate planners. Communication between these departments is vital. By showing an interest in strategic planning through continual questioning, the human resources development staff eventually may be included in corporate planning.

BENEFITS OF STRATEGIC HUMAN RESOURCES MANAGEMENT

Walker (1980) defined that strategic business planning is the process of setting organizational objectives and determining action plans that will achieve these objectives. Three elements are vital to a successful strategic plan: (1) a corporate mission and strategy, (2) a corporate structure, and (3) human resources (Tichy, Devanna, & Fomburn, 1982). In order to survive and prosper, organization must have a well-developed and well-maintained business strategy. Thus, it is useful to see planning in terms that relates to organizational,

managerial and strategic activities (Hall & Goodale, 1986). According to Sonnenfeld (1985), to be successful in maintaining or regaining the competitive advantage, companies must concentrate on developing human infrastructure in the organization. Relating employee development to competitive strategy of the firm has come to be viewed as an effective way to bring about these changes in employee's attitudes. Combined with other developmental programs, which have an impact on the success of the firm's strategy, these efforts are referred to as strategic human resources.

Strategic human resources development has been defined as "the identification of needed skills and active management of employee learning for the long-range future in relation to explicit corporate and business strategies" (Hall, 1984, p.159). Later, Hall and Goodale (1986) extended the concept to include intermediate-range planning. Organizational career management has been described as activities and opportunities sponsored by the organization, an attempt to ensure that they will meet or exceed the future human resources requirements of the organization (Stumpf & Hanrahan, 1984).

Benefits afforded in a company that integrates its strategic planning and human resources development are numerous. One benefit that may arise because of this linkage is reduced costs. According to Friedman and LeVino (1984), when organizations do not take management development seriously, it may be a costly mistake. Repercussions from this ignorance will cause high replacement costs because the company is forced to recruit from outside. In essence, this means the firm is paying for another company's development programs. This practice of raiding other companies with good development programs was once common in banking and brokerage businesses. Even worse, lack of an integrated management development program will lead to great loss of motivation and increase of instability in the managerial ranks.

Human resources development programs are usually extremely costly. When development programs are initiated with no clear connection to the needs of the company, time and money are wasted. However, if every development activity performed is clearly linked to the organization's goals, each program would be beneficial for both individual and company, thus reducing its possible costs, as mentioned by Abelson, Ferris, and Urban in 1988. Similarly, Abelson et al (1988) also suggested that by linking the strategic business plan to human resources development, employees are more aware of what their future with the company will be like. Such efforts are likely to fulfill its maximum potential (Harvey, 1983), simply because that by integrating human resources development planning into strategic planning, all activities sponsored by the human resources development become more legitimate. Both the company and employees realize that being involved in a human resources development program means a better future for both the company and the workers.

Another benefit is when future plans are explained to firm members, they will understand why they are being trained (Sonnenfeld, 1985). By showing the importance of the training and development programs offered to the individual, good chances are these



programs may become a productive and useful exercise, instead of a waste for both the organization and the individual. And this can be accomplished only when there is a clear link between the company's business plan and its human resources development.

GOALS AND STRATEGIES OF HRM TRAINING AND DEVELOPMENT PROGRAMS

Training and development refer to a planned effort by an organization to facilitate the learning of job-related behavior on the part of its employees. The term behavior is used in the broad sense to include any knowledge and skill acquired by an employee through practice. The general purpose of training and development involves knowledge and skill acquisition. Any training and development effort can have one or more of the following three goals: (1) to improve an individual's level of self-awareness; (2) to increase an individual's skill in one or more areas of expertise; and / or (3) to increase an individual's motivation to perform his or her job well. Self-awareness involves learning about oneself. It includes understanding one's roles and responsibilities in the organization, recognizing differences between one's actual and espoused managerial philosophy, understanding how one is viewed by others, and learning how one's actions affect other people. Certain training and development techniques will give trainees increased self-awareness. (Latham, 1991)

Second, most of what is traditionally considered training and development deal with increasing an individual's skill. This skill may involve electrical wiring, painting, blueprint reading, using a computerized cash register, following safety procedures, setting priorities, delegating or handling employee grievances, or increasing one's effectiveness as a leader. Obviously, these are just a few of the many different kinds of skills that can be learned during training and development programs. Regardless of the type of knowledge and skill involved, the training program is based on the assumption that it will increase an employee's ability to perform effectively on the job. (Latham, 1991) Often, people possess the skill and knowledge to perform the job, but they often lack the motivation to exhibit their abilities. For this reason, the goal of some training and development programs is to maximize the employee's desire to perform the job well. These programs, admittedly, are relatively few in numbers.

These three broad goals--namely, increasing employee self-awareness, skill (including decision making / problem solving), and motivation are attained by using one or more training strategies. There are at least three basic strategies that are available to a training specialist. The specialist can try to improve an employee's performance by directing his or her efforts toward (1) cognition (i.e., thoughts and ideas), (2) behavior, or (3) the environment in which the person is working. (Latham, 1991).

Depending on how concerned a company is with long-term planning, a company's training and development function may consist of such aspects as skills training and management development, in addition to career planning. The first two areas – skills

training and management development – may be accomplished either in-house or at seminars or workshops outside the company. In-house programs are conducted either by human resource staff members or by consultants who are brought into the company.

In small companies, where a training specialist is unlikely to be part of a relatively small human resource department, it is more logical either to bring consultants into the company or to send employees out to workshops. Even if the human resource representative is not doing the training, he or she is still responsible for either bringing in consultants or for processing requests to attend outside programs.

PROBLEMS AND ISSUES OF TRAINING AND DEVELOPMENT IN SMALL AND MEDIUM -SIZED COMPANIES OF CHINESE TAIPEI

The human resource development in small and medium enterprises (SMEs) of Chinese Taipei has a lot of problems in many ways such as ideas and practices. Following are some descriptions of several main items.

Utilization rather than Education

Managers tend to think that human resources can be obtained from the human market at anytime they want. When employees' turnover rate stays high, the investment in education becomes difficult to return. And since small and medium enterprises have certain scale and finance limits, they usually do not put a lot of efforts on the human resource development. Unlikely, under these circumstances, the company will be able to lure away employees from other companies to change their jobs. Contrarily, the company will find it difficult to keep its own employees from switching to a better company which provides better and promising training programs.

In Chinese Taipei, many small companies do not have the vision as to manage their companies in a long-term basis. They are reluctant to invest in enhancing their employees' skills or to expand their potentials for future advantage of the company. Education may occupy a certain amount of production time, which managers view as loss of profit. Fully utilizing employees' work hours while at work seems to bring more benefits than sending them to training programs, whether in-house or outside, and wondering at the same time the effectiveness and worthiness of such investment.

Misunderstanding with Training

Comprehensive training programs should be beneficial to the present and future work. On the other hand, companies usually regard training as general education. They think its contribution to organization is not conspicuous but rather more of long-term oriented. It does not help the improvement of the present work.

Due to this misunderstanding with training, a lot of companies will consider training as fashion. Like a trend, if one company holds some training activities, other companies



simply do not want to fall behind. In trying to catch up with the company, they model after the first company and arrange their employees into some kind of training too. It then becomes a fashion.

The problem with this blind modeling is that such training is often regarded as a benefit to employees. As to whether the training content is related to the work, or whether the right people are chosen for proper training, the company has not given it proper thought, not mentioning they have to research out suitable training topics. The attitude they hold toward training is to go with the feeling. Without saying, the result is usually unsatisfactory.

Lack of Systematically Organized Training Programs

Small and medium entrepreneurs are subject to their organizational characteristics. It is difficult for them to develop well-planned training programs as big entrepreneurs do. But somehow they manage to implement some training programs to their employees. Transplanting other company's programs, regardless of its size and applicability, is like putting on the wrong size of clothes. Conditions and environment of the firm members vary from organization to organization. Yet, current training programs, in most of small and medium companies in Chinese Taipei, are usually not built for the needs of the organization specifically. Systematical analysis and serious planning help the managers to precisely calculate the cost and effect of the programs. Small and medium companies do not necessarily have the ability to make their own training plans, or just to trim the big company's programs into their own size.

Insufficient Support from Supervisors

It is not easy to evaluate the effectiveness of any training program in an organization, especially that of managerial training programs. Chang (1988) expressed that not many managers in Chinese Taipei support training programs. Usually, supervisors from all levels of organizations would think that the responsibility of bringing up training programs is on the HRM department. Moreover, some would give excuses not to offer training programs. For they worry about the subordinates' success over them; they do not consider it useful or they just do not want to spend extra time on those programs.

Also, if their subordinates' abilities are increasingly improved, this might threaten those supervisors' career development. Other than that, each supervisor is busy in struggling for better performances and has no time to take care of the HRM development, which is out of their responsibility, as they believe. In that case, how could the evaluation be conducted on some programs not even expected to be effective, unless there is support from supervisors all the way up to the top managers?

THE LACK OF MANPOWER AND THE NEED FOR HUMAN RESOURCE TRAINING AND DEVELOPMENT

Most of the enterprises in Chinese Taipei are small and medium-sized enterprises and the cost they spent in human development are higher than that of large companies. One of the main reasons is that they do not have enough ability to set up professional training institutions, and that the turnover rate is too high in SMEs. Domestic family business has more restrictions to professional personnel, which makes it difficult to recruit people and cannot retain professional personnel in the company for a long term. Therefore, it causes loss in developing professional personnel. We can describe human development problems that SMEs face in two parts:

The Problem of Wasting Resources in Education

The ratio of teacher to student in Chinese Taipei is to 13.52 in 1989. It has increased 0.42% in ten years. Public schools have fewer students than private schools and they are more adequate in use of educational resources. Take example of the year 1989 when the martial laws were just lifted, the average expense in education for every student in public schools is NT106,000 dollars, and NT37,000 dollars in private schools. Government was devoted to promote high-level education and to increase opportunities to enroll in schools. But in fact, the ratio of school enrollment did not increase equally. **In 1989, the number of second-time examinees to high schools and junior colleges is 18.1% of all students enrolled, and it is 46.7% among 2-years/3-years colleges and universities.** The situation causes much waste in human resource investment.

As far as the manpower produced by schools is concerned, the problem of over-qualification for some graduates is very serious. Enterprises worry that there are not enough technical people in Chinese Taipei while high-level education is continuously pursued. Fewer people stay with vocational system to receive technical training. Unless the authority of school improves their specialty, teaching materials and resources allocation, the situation remains the same.

The Mal-function in Vocational Training Institutes

In 1989, there are 13 public vocational training institutes and they are responsible for 77 vocational training programs. **The number of people who receive training grows steadily, and people who was trained in the institutes is 5.8% of total trained people.** In recent years, people graduated from colleges have not volunteered to work in factories, so the number of figures from high-level technical education system does not increase apparently. The number of people who was trained in those institutes is 2.85% of total trained people in 1989, and it is much lower than 2.98% in 1981. Besides, in 1989 the number of the vocational training teachers fell down to 172 people, 13.13% lower than the figure of 1988, while the number of the vocational training teachers who finished the programs fell down to 199 people, 53.40% lower than the figure of the year before. In the beginning when the



martial laws were lifted, companies did not have the desire to handle vocational training, and vocational training unit of government has faced the problem that the rate of enrollment was too low. The human resources development cannot be proceeded systematically and smoothly.

Meanwhile, Korea has just set up a SMEs fund, and established SMEs colleges to train workers. In order to establish authority, Korean government established professional licenses and certificate system, so that professional training can still be carried out successfully. The efforts that other countries in Asia have put in training and developing human resources are worthy of the attention of government and entrepreneurs in Chinese Taipei.

CASE—SUCCESS OF GIYA BEAUTY SHOP CHAIN STORE

The Background of Hairdressing Industry

There are more than one hundred thousand hairdressing saloons in Chinese Taipei right now. The hairdressing industry is a technical vocation, but for the hairdressing industry in Chinese Taipei, it can only be a skill vocation. Hairdressing industries provide customers with face-to-face services. If the boss of the hair saloon wants to promote its sale, he should employ more workers to handle customers. So, it becomes an important issue as how to acquire good and sufficient human resources in hairdressing industries. In the past, employers of hairdressing industries often publicize their recruiting information on the newspaper classifieds, but it faced some problems at present. Excellent hairdressers switch their jobs usually because employers recruit them from other hair style employers, or they are introduced into companies by employers' friends. Fewer people noticed the classifieds on newspapers.

As for the training in hairdressing industries, the skill of hairdressing was learned from old tutors and by themselves in the past, run short of the basis of theories. As the Beautician Department in vocational school was gradually set up, the traditional apprentice system has been disappearing. Young students would go to school to learn rather than leading a long apprentice life in a saloon. These hairdressers trained in vocational schools are expected to become main stream in hairdressing industry in Chinese Taipei in years to come. Therefore, how to recruit appropriate human resources for hairdressing industries becomes an important factor to the development of the business.

As for hairdressers, the feature of the hairdressing industry is of great advantage to them. First, they are not easy to be replaced because the service and contact offered by the hairdressers are very important for their customers. They will not change as the progress of techniques. Second, the hairdresser is of great value as they become older, because as time goes by, the hairdressers will have more and more experiences and they will have more and more customers. Third, hairdressing industries do not place restrictions on their degrees of education. For example, if a student graduated from high school, he/she might not be

qualified in other industries, but it would not be a problem in hairdressing industries. Fourth, there is no upper ceiling on hairdressers' pay. That is, besides basic pay, hairdressers work more and earn more. The boss does not place any limits.

The Company's Condition

Giya (? ?) beauty shop chain store was established by Mr. Wu-ji Shen (? ? ?) in Kaohsiung in 1978. At first it was only a small beauty shop. But with increase of employees in years, now it has extended to 19 branches altogether. This company has about 400 employees and its operating income is about 2 hundred million NT. This beauty shop has the largest scale in Kaohsiung now.

This chain store is supervised by its president, also the general manager, with assistance of two other managers, who take charge of education training and personnel management respectively. The management department, subordinated to the president, manages accounting, finance, creativity, administration and other aspects of the business. Of all the 19 branches, each one has its own director responsible for business of that branch. Designers get to vote for a leader to share joint responsibility of running the shop. And of course, there are accountants, designers, and assistants etc. to keep the business running.

The company's managing concept is "to pursue sincerity, virtue, and beauty." Pursuing sincerity means sincere attitude toward customers, and using real and solid skills to serve them. Pursuing virtue means the concept of benefit-sharing no matter with employees or customers. Pursuing beauty means that the company asks designers to have the concept of beauty from inside out. Designers should bear the responsibility of the most beautiful and best style for customers.

The Company's Training & Development

At the beginning, the designers employed by Mr. Shen were all experienced seniors from different resources. Although their ages were not high, their attitudes were pretty haughty deeming themselves as professionals. Therefore the company could not require them to comply with the established system and obey the rules. If the company insisted on this, the turnover rate would be really high. This circumstance made the boss, Mr. Shen, realized that he had to cultivate his own designers. After continuous instruction, more and more unskilled employees could handle the major tasks on their own, and the company could also enlarge its shop size. Besides, in order to make designers feel safe to work in Giya, the boss started to encourage them to invest in new shops since 1979.

In 1981, Mr. Shen opened a cram school near Kaohsiung train station, teaching people how to design hair styles. He had two reasons why he opened this cram school. First, he felt that training people in each of his beauty shops is too ineffective; second, he wanted to cultivate more talented people. He picked this place near the train station at students' convenience because students came from many different places by train. A complete course



lasted for three months. During the full bloom of the cram school, there were about 100 students during each period of time in the morning, afternoon, and evening. So, there might be 1,000 students a year. Students are divided into two kinds. One group of students would go back home and open small beauty shops in the neighborhood. The other group of students came to the cram school because they felt painful learning skills with traditional tutors. After finishing the courses, Mr. Shen would ask the students if they were willing to come to the company.

Around 1990, vocational schools started to institute Department of Hairdressing. Students graduated from junior high schools went to vocational schools instead of coming to the cram school because they cannot only learn the skill but also get a diploma in vocational schools. Mr. Shen closed the cram school for the number of students has declined since then

Vocational schools attracted the students, and Mr. Shen detected there would be problems of human resources. At first, he recruited external people, but it was getting harder. In the meantime, representatives from vocational schools came to Mr. Shen and looked for chances to cooperate. Mr. Shen felt the cooperation might help Giya manage her human resources, so he initiated the cooperation system with vocational schools in 1991. Now, there were 400 students taking turns to work in Giya. 200 of the students acquired professional skills in the stores, and 200 of them study theory and general subjects in school at the same time.

In order to secure its human resources, Giya would actively visit junior high schools for promotion and offer to assist in their recruits. When the time comes that students have to be sent to Giya to fulfill internship, Giya obtain interns as needed and most importantly screened already. This group of interns will be provided 168 hours of basic courses about hairdressing. Afterwards, they have to receive in-shop technical training three days a week. A senior intern is assigned to each student for better adjustment. When students graduate from school, they are welcome to apply for vacancies in the shops. An evaluation committee is set up to determine the appropriate selection on the basis of the applicant's skills, internship performances, and attendance records, etc. The qualified needs to begin his/her job as an assistant, taking on-site training courses and receiving more evaluation necessary to upgrade as a perm assistant, a perm operator, and eventually a designer. In return, Giya pays equal patience believing anyone who wants to learn and devotes him/herself in this career could be cultivated as a good designer given it time and diligent efforts. Furthermore, Giya sets up a technical center, open for business on low charges, to facilitate novices' learning through repeated practices. Many customers visit the center for cheap rates and they serve as economic practical training to these assistants.

So far, Giya has a fruitful result from school-business cooperation. In an evaluation conducted by Education Bureau of Kaohsiung City Government, 11 shops are graded the first class, only one shop is graded the second, of all 12 branches open for evaluation. The number of interns who express willingness to stay in the shop exceeds their needs. Because

of this, Giya opens many more branches. If the source of labor keeps increasing, Mr. Shen thinks Giya can continue expanding its scale.

CONCLUSION

From the above study, we conclude that:

First, training and development programs could be simply a package of activities held to accompany the business strategy, or more effectively, the essence of that strategy. Most of the enterprises at present hold T&D in accordance to increase employees' skills to expedite business growth. For most, such T&D are planned activities of the business strategy. In Giya's case, whether or not there are sufficient well-trained human resources determines the fate of a new branch. Giya invests in a series of training programs available to all non-firm members, including cram schools and cooperation with vocational schools. This gradually cumulates steady reserves for qualified future employees. In the mean time, the company is able to march toward more branches. In view of this, Giya's T&D is one important step of its business strategy. As a matter of fact, service oriented business, because of its skill feature, protects itself from replacement by automatic operation. How to get adequate supply of qualified manpower becomes the most important strategy of successful business. T&D in such company can serve as an inevitable scheme to secure prosperity.

Second, in places where diploma is valued highly, enterprises should conduct cooperation with schools for better supply of human resources. Parents and school-goers of such places consider earning a diploma an important objective of attending schools. Those students are willing to acquire necessary skills for future jobs, but granting them diplomas to them is like hitting two birds with one stone. Mr. Shen, the boss of Giya, perfectly understands this double needs so closed was the cram school as fewer and fewer people came to register. The cram school once attracted numerous youngsters from many places, and yet the number of registration declined as hairdressing departments were founded one after another in schools. Unstricken by the closure of cram schools, Mr. Shen turned to look for opportunities of school-business cooperation. He made advantage of school system in which his company could provide professional skills and practicing objects while students were well trained with a degree. It is foreseeable that young people find this rewarding and are willing to join in the career. To any company like Giya, that means steady human resources.

Third, enterprises should avoid taking intern students as fill-ins of manpower shortage or as cheap labors. The appropriate management is to treat these interns as future employees and train them proper accordingly. Comprehensive school-business cooperation can be established only on long-range purpose, which is, to infuse into the human resources of future utilization, rather than just temporary surge of cheap manpower. Many enterprises plunge in this instant benefit. For a short period of time, these cheap labors can actually bring the profit uprise as the costs are relatively lowered. Yet on a long-term point of view,



it provides limited space for company's development unless it has stable technical human resources. It is suggested that enterprises design a set of comprehensive training courses for their interns, familiarizing them with the company culture as this naturally would lead to ideal source of head hunting.

Lastly, encourage employees to become shareholders of the company whenever a new branch is open. This usually ties them closer to the company especially in franchise business. To this kind of business, more branches mean bigger scale and relatively lower cost. Only that the expanse of business must have backup of adequate manpower supply; otherwise, any carefully planned strategy would be difficult to carry out. In view of its low cost to start a new shop, many designers would quit from big saloons and open their own shops once they are capable to run business on their own. This manpower drain certainly throws negative effect to the company's business. But this worry could be eliminated if the company welcomes its designers to share the holds with their colleagues. Expectedly, employees will have stronger commitment to the company and on the other hand the boss will be glad to host more shops.

REFERENCES

- Abelson, M. A., Ferris, G. R., & Urban, T. F.(1988). Human resource development and employee mobility. In R. S. Schuler S. Schuler S. A. Youngblood, & V. Huber (Eds.), *Readings in personnel and human resource management (3rd ed.)* (pp. 320-329). St. Paul, MN: West.
- Caldwell, P.(1984). Cultivating human potential at Ford. *Journal of Business Strategy, 4(4)*, 74-77.
- Friedman, S. D.,& Le Vino, T. P.(1984). Strategic appraisal and development at General Electric Company. In C. J. Fombrun, N. M. Tichy & M. A. Devanna (Eds.), *Strategic human resource management*, (pp. 183-201). New York: Wiley.
- Hall, D. T.(1984). Human resource development and organizational effectiveness. In C. J. Fombrun, N. M. Tichy & M. A. Devanna (Eds.), *Strategic Human resource management*, (pp. 159-181). New York: Wiley.
- Hall, D. T., & Goodale, J. G.(1986). *Human resource management*. Glenview, IL: Scott. Foresman.
- Harvey, L. J.(1983). Effective planning for human resource development. *Personnel Administrator, 28*, 45-52, 112.
- Latham, G. (1991) *Developing and training human resources in organizations*. New York: HarperCollins.
- Sonnenfeld, J. A.(1985). Education at work: Demystifying the magic of training. In R. E. Walton & P. R. Lawrence (Eds.), *HRM trends & Challenges*, (pp. 285-317). Boston: Harvard Business School Press.
- Stumpf, S. A. & Hanrahan, N. M.(1984). Designing organizational career management practices to fit strategic management objectives. In R. S. Schuler, & S. A. Youngblood (Eds.), *Readings in personnel and human resource management (2nd ed.)*, (pp. 326-348). St. Paul, MN: West.
- Sweet, J. (1981) How manpower development can support your strategic plan. *Journal of Business Strategy, 2(1)*, 77-81.
- Tichy, N. M., Deveanna, M. A. & Fombrun, C. J.(1982). Strategic human resource management. *Sloan Management Review, 28*, 45-51.
- Walker, J. W.(1980). *Human resource planning*. New York: McGraw-Hill



Winer, L.(1983). Applying strategic planning in human resource development. *Training and Development Journal*, 37(November), 81-84

Wissemma, J. G., Brand, A. F., & Van Der Pool, H. W.(1981). The incorporation of management development in strategic management. *Strategic Management Journal*, 2, 361-377.

**ENHANCING ORGANIZATIONAL COMPETENCE
THROUGH HRM PRACTICES IN SMEs:
A QUANTITATIVE ANALYSIS IN APEC REGION**

Stephen Yiu

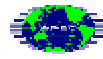
Director, International Consultants

Visiting Professor, California State University (USA)

Eleanor Cheung

Division of Commerce

City University of Hong Kong (Hong Kong)



ENHANCING ORGANIZATIONAL COMPETENCE THROUGH HRM PRACTICES IN SMEs: A QUANTITATIVE ANALYSIS IN APEC REGION

ABSTRACT

The ever-expanding scope of global competition is forcing continuous reexamination of how human resource can best support the accelerating pace of business globalization.

The SMEs in the APEC region have been experiencing tremendous changes especially in the 90s which include not only the growth of service industries but also the economic upheaval in late 1990s. All these issues urged SMEs especially in the APEC regions to adopt appropriate human resource management practices for future success.

In this paper, the author examine the relationship between corporate performance of SMEs in APEC countries and their human resource management practices in aspects of recruitment and selection; training and development; compensation and benefits; and performance appraisal. It is hypothesized that all these human resource management practices would have positive correlation with corporate performance indicators. The understanding of the human resource management practices and corporate performance in SMEs provide valuable insights to senior executives of SMEs, academic researchers, administrators and practitioners on future direction in the area of human resource management. The main methodology used in this study would be quantitative approach using questionnaire. It is expected that findings in this study would be beneficial to those who are committed to enhancing organizational competitiveness of SMEs through successful human resource management practices in the 21st century.



BACKGROUND

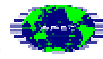
The practice of effective human resource management is one that small and medium size businesses need to develop and improve as they expand and grow. The vast majority of business in the Asian area today employ fewer than 100 people. In Chinese Taipei, SMEs constitute 96.5% of the approximately 935,000 business establishments and employ 78.6% of the total work force (Chinese Taipei Medium and Small Business Administration, 1995). In Hong Kong, the majority of establishment are in the form of SMEs (Table 1). Yet, current research conducted in the human resource field tends to focus on the larger firms that employ full-time human resource specialist.

Table 1: Share of SMEs in different sectors in Hong Kong as at January 1999

Sector	% share of SMEs
Industry sector - mining and quarrying - manufacturing - electricity, gas & water - construction	97.14%
Services sector - import/export - wholesale, retail, restaurants & hotels - transport, storage & communications - financing, insurance, real estate & business services community, social and personal services	98.32%

Source: Quarterly Report of Employment, Vacancies and Payroll Statistics (Census & Statistical Department, Hong Kong)

In fact, SMEs exert a strong influence on the economies of all countries, particularly in the fast-changing and increasingly competitive global market (Aharoni, 1994; Drillhon and Estime, 1993). They have been a major engine of economic growth and technological progress (Mulhern, 1995; Thornburg, 1993). Carrier (1994) commented that SMEs triumphed over larger firms in terms of innovation. The characteristics of SMEs such as flexibility, innovativeness, and problem-solving action orientation are now being considered as vital for success in the 1990s. This is especially true in the Asian region which has enjoyed a tremendous growth in the last decade. Even large companies have attempted to implement entrepreneurship and have learned to think like a small business (Chittipeddi and Wallett, 1991). Simon (1996) investigated five hundred SME champions in Germany and commented that they have much to teach companies of all sizes and all regions about commercial success. The success of SMEs in Chinese Taipei has been well acknowledged (Hannon, 1996; Liu, Liu, and Wu, 1995). They have played a vital role in promoting rapid growth during the economic transition of Chinese Taipei (Hannon, 1996; Liu, Liu, and Wu, 1995). The scale, scope, organization, and management of SMEs have changed over time in response to evolving markets, technologies, and economic conditions.



Not only that SMEs have been the drive for economic success, it is also the primary source of employment creation worldwide over the last decade (Mulhern, 1995). In the United States, firms with fewer than 500 employees account for more than 99% of all business establishments and employ over 80% of the work force (Aharoni, 1994). In Holland, 95% of firms are SMEs (Bijmolt and Zwart 1994); SMEs also comprise 95% of the total establishments in the Philippines (De la Pena, 1995).

In many cases, the owner of a small business handles the human resource function since they are usually limited when the firm employs only a few people. Obviously, an extremely small firm with two or three employees may not develop sophisticated human resource systems; however, there are numerous businesses that are categorized as “small and medium” that employ a large number of people and need effective human resource policies for their workforce. In this study, enterprises employing less than 500 people are classified as SMEs.

The purpose of this study to examine how the relation between human resource practices and the overall organizational performance of the SMEs in the Asian region. It is hypothesized that there is positive correlation between the human resource practices and the main corporate performance indicators.

The sample of this study is drawn from Hong Kong and their ownership include Mainland China, Hong Kong, Chinese Taipei, Japan, Korea, Indonesia, Philippines, Singapore, Malaysia, India and Thailand. This study focused upon three key human resources management practices: recruitment and selection, incentive compensation, training and development, and performance appraisal. Organisational performance was measured in terms of overall business performance, customer satisfaction, staff turnover, profit growth and sales growth.

METHODOLOGY

Quantitative research method was used in this survey. Five hundred sets of questionnaires have been mailed to SMEs in Hong Kong. The return rate of is 58.2% (291 sets of returned questionnaires)

RESULTS AND DISCUSSION

The distribution of ownership of responding companies is shown in the following table.



Table 2: Distribution of ownership

Ownership	%
Hong Kong	35
Mainland China	21
Chinese Taipei	24
Japan	9
Singapore	5
Indonesia	1
Philippines	1
Malaysia	1
Korea	1
India	1
Thailand	1

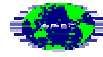
Hypothesis 1: The use of recruitment and selection strategy is positively related to organizational performance in terms of overall business performance, customer satisfaction, staff turnover, profit growth, and sales growth.

Table 2: Correlations between organizational performance and the recruitment and selection practice

	No. of candidate interviewed per each employee hired	No. of selection tests candidates required to test	Effectiveness of recruitment and selection strategy
Overall business performance is high compared to others in the same industry	0.12	0.011	0.14
Customer satisfaction is high compared to others in the same industry	0.29	0.044	0.139
Staff turnover rate is highly satisfactory compared to others in the same industry	0.46*	-0.135	0.47*
Profit growth compares favourably with that of competitors	0.038	0.053	0.12
Sales growth compares favourably with competitors	0.12	0.05	0.16

* correlation is significant at the 0.05 level (1-tailed)

Results indicated a positive effect upon organizational performance in terms of staff turnover with the use of recruitment and selection strategy. The satisfactory rate in terms of turnover is positively correlated with the number of candidates interviewed per employee hired (0.46). It may imply that the more candidates being interviewed, the more appropriate candidate would be selected and the longer that they will stay with the



company. The overall effectiveness of the recruitment and selection strategy also has a positive correlation with staff turnover. Other organizational performance indicators also have a slight positive correlation with the recruitment and selection practices.

Hypothesis 2: The use of training and development strategy is positively related to organizational performance in terms overall business performance, customer satisfaction, staff turnover, profit growth, and sales growth.

The training and development index include the number of trainees participated in such formal training and the effectiveness of such training.

Table 2: Correlations between organizational performance and the training and development practice

	No. of employees participated in formal training	Effectiveness of employee training
Overall business performance is high compared to others in the same industry	0.065	0.32
Customer satisfaction is high compared to others in the same industry	0.571**	0.56**
Staff turnover rate is highly satisfactory compared to others in the same industry	0.66**	0.269
Profit growth compares favourably with that of competitors	-0.038	-0.045
Sales growth compares favourably with competitors	0.012	0.05

** correlation is significant at the 0.01 level (1-tailed)

Results indicate that the value scores of training and development and the performance of organisation are highly positively related in various aspects. The correlation coefficient between customer satisfaction and the number of trainees is 0.571 while the correlation coefficient between effectiveness of training and profit growth is 0.56. This implies that the more employees received employee training and the more effective the training programme, it may lead to better customer satisfaction. Results also indicate a high positive correlation between the staff turnover rate and the number of trainees (0.66). It may imply that one way to retain employees is to provide training and development programmes. Negative correlation is found between profit growth and the number of trainees and the effectiveness of training programmes. This may imply the training budget may cause burden to the profit growth.

Hypothesis 3: The use of incentive compensation strategy is positively related to organizational in terms of overall business performance, customer satisfaction, staff turnover, profit growth, and sales growth.



The incentive index consists of the importance of job performance in determining the earnings of managerial staff, supervisory staff, non-managerial professional staff and frontline staff.

Results indicate there is positive correlation between the compensation strategy and organizational performance specially the staff turnover which has a highly significant correlation for the managerial (0.64) and frontline staff (0.69). It may imply that when formulating compensation strategy, attention has to be given to importance of job performance.

Table 3: Correlations between organizational performance and importance of job performance in determining incentive compensation

	Importance of job performance in determining earnings of managerial staff	Importance of job performance in determining earnings of supervisory staff	Importance of job performance in determining earnings of non-managerial professional staff	Importance of job performance in determining earnings of junior/ frontline staff
Overall business performance is high compared to others in the same industry	0.264	0.23	0.291	0.189
Customer satisfaction is high compared to others in the same industry	0.07	0.048	0.039	0.041
Staff turnover rate is highly satisfactory compared to others in the same industry	0.64**	0.23	0.316	0.69**
Profit growth compares favourably with that of competitors	0.172	0.16	0.142	0.16
Sales growth compares favourably with competitors	0.18	0.04	0.23	0.124

** correlation is significant at the 0.01 level (1-tailed)

Hypothesis 4: The use of performance appraisal strategy is positively related to organizational in terms of overall business performance, customer satisfaction, staff turnover, profit growth, and sales growth.

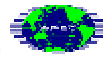


Table 4: Correlations between organizational performance and performance appraisal practice

	Performance appraisal is closely related to promotion and reward	Effectiveness of appraisal performance
Overall business performance is high compared to others in the same industry	0.035	0.011
Customer satisfaction is high compared to others in the same industry	0.051	0.06
Staff turnover rate is highly satisfactory compared to others in the same industry	0.474*	0.269
Profit growth compares favourably with that of competitors	0.103	0.107
Sales growth compares favourably with competitors	0.014	0.001

* correlation is significant at the 0.05 level (1-tailed)

Results indicate there is positive correlation between the overall business performance and the performance appraisal practice (0.035) although such correlation is only a slight one. While the staff turnover index is highly correlated with the performance appraisal practice (0.474) indicating that if performance appraisal is properly monitored, there will be lower staff turnover rate.

RECOMMENDATIONS

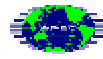
Today the challenge of organizations whether small or large is to use human resource in the planning and problem solving process. Human resource practitioners are expected to act as change catalysts in making organization more productive. The trend reflects a growing awareness of the contribution that effective human resource practices can make to the success of the organization. Although SMEs employ fewer number of employees, effective human resource practices need to be adopted in the organizations in order to ensure organizational success. The population of employable workforce is not only increase in quantity but has improved in terms of quality as education becomes more common. In order to recruit and select the best candidates fit for the SMEs, human resource practitioners of SMEs need to widen their recruiting and selection strategy. Web-based recruiting is one possible means of widening the applicant pool. Use of critical selection tests is also crucial in matching the personnel specification and organizational needs. For incentive compensation, it is recommended that SMEs should take into consideration of employees' performance in formulating the compensation



strategy. Although performance appraisal may not have direct impact on the profit and market growth, it can be used as one effective way to retain capable employees which can be one crucial success for SMEs.

CONCLUSION

Results in this study have indicated that there is positive correlation between the human resource management practices of the SMEs and most organizational performance indicators. Following Hess's (1987) study which indicated human resource management as the second most important management activity in SMEs, this study further illustrated the importance of human resource practices in enhancing organizational performance of SMEs.

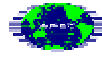


REFERENCES

- Aharoni, Y. (1994) "How Small Firms Can Achieve Competitive Advantages in an Interdependent World," in *Small Firms in Global Competition*. Ed. T. Agmon and R. Drobnick. N.Y.: Oxford University Press.
- Bijmolt, T. and Zwart, P.S. (1994) "The Impact of Internal Factors on the Export Success of Dutch Small and Medium Sized Firms" *Journal of Small Business Management* 32(2), 69-83.
- Carrier (1994) "Intrapreneurship in Large Firms and SMEs: A Comparative Study," *International Small Business Journal* 12(3), 54-61.
- Chittipeddi, K. and Walleit, T.A. (1991). "Entrepreneurship and Competitive Strategy for the 1990s" *Journal of Small Business Management* 29(1), 94-98.
- De la Pena, 1995 "Training and Consulting Services for SMEs in the Philippines," APEC Symposium on HRD for SMEs, Taipei, Taiwan, 10.1-10.16.
- Drilhon G., and Estime M. (1993) "Technology Watch and the Small Firm," *OECD Observer* 182, 31-34.
- Hannon, B. (1996) "The Pioneering Spirit," *Worldbusiness* 2(3), 8.
- Hess, D. W. (1987) 'Relevance of Small Business Courses to Management Needs', *Journal of Small Business Management*, January, 26-34.
- Lin, Y.Y (1998), "Success Factors of Small and Medium-Sized Enterprises in Taiwan: An Analysis of Cases," *Journal of Small Business Management*, October, 43-56.
- Liu P.C., Liu Y.C. and Wu H.L., (1995) "The Role of SMEs in Economic Development of Chinese Taipei," APEC Symposium on HRD for SMEs in Taiwan, 6.1 – 6.37.
- Mulhern, A. (1995) "The SME sector in Europe: A Broad Perspective," *Journal of Small Business Management* 33(3), 83-87.
- Simon, H. (1996) *Hidden Champions*. Boston, Mass.: Harvard Business School Press.
- Thornburg, L. (1993) "IBM's Agents of Influence," *HRMagazine* 38(2), 80-83.

**A COMPARATIVE STUDY OF PRESIDENTS' VOCATIONAL INTERESTS
ON CORPORATE STRATEGY, ORGANIZATIONAL STRUCTURE AND
PERFORMANCE BETWEEN JAPANESE VENTURE COMPANIES AND
SMC IN CHINESE TAIPEI**

Hirohisa Nagai
Graduate School of Systems Management
The University of Tsukuba (Japan)



A COMPARATIVE STUDY OF PRESIDENTS' VOCATIONAL INTERESTS ON CORPORATE STRATEGY, ORGANIZATIONAL STRUCTURE AND PERFORMANCE BETWEEN JAPANESE VENTURE COMPANIES AND SMC IN CHINESE TAIPEI

ABSTRACT

A comparative study of the effects of SMC's presidents' Vocational Interests according to the Holland's (1985) R-I-A-S-E-C model to corporate behavior and performance between Japan and Chinese Taipei was proposed and tested in this paper. The proposed analytical framework incorporated with corporate HRM strategy, organizational structure, and corporate growth rate in sales. Samples of 335 Japanese and 172 people in Chinese Taipei data were used for confirmatory factor analysis to figure out each type scores, and for correlation analysis to identify the relationship between each type score and corporate behavior, as well as performance. The contribution and limitation will be discussed, in addition to the directions for future study.



RESEARCH BACKGROUND

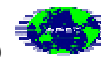
Japan has been facing a serious post-bubble economic crisis throughout the late 90's. Its effects especially in area of corporate structure, business core competencies, and Human Resources Management (HRM) strategies. For example, flattening and networking corporate structure, investing in a specialized business domain, and reduction of human resource costs by increasing internal competition and restructuring employees are introduced. In HRM area, Japanese companies have been introducing practices such as an early retirement, performance-based pay systems and downsizing thorough dismissal plan. Those HRM strategies are just the opposite of the traditional Japanese style that base on the long- term employment of employees.

To cope with such a severe downward economic situation, tripartite efforts among government, private sector and academic institutions have been working together to create new business innovations by starting new business in Japan to breakthrough the economic recession. The entrepreneurial business innovations have potential to grow business rapidly by creating new market, with relatively small investment and employees. This is so called the third "venture business" movement following those of 70's and 80's in Japan.

The first venture movement was during 1970 to 1973, and it brought number of new engineering & technology companies that contributed rapid economic development in Japan. During those periods, the current Japanese leading companies, such as SONY and HONDA were evolved in Japan. Likewise, the second venture movement during 1983 to 1986 sprouted many advanced technology related companies, such as Kyosera, Horiba were grown as the successful Japanese companies.

Throughout these venture movements, relationship between strong personality and performance of the company could be pointed out among the successful venture companies. Like Mr. Akio Morita of SONY and Mr. Soichiro Honda of HONDA, and, founders of venture business tend to have a strong entrepreneurial spirit to create new product. In addition, many of those presidents have career background as engineers themselves, and have strong commitments to their technology and quality of products. Finally, those venture companies are small in size at the beginning, and president's leadership is likely transmitted throughout the company. It is assumed that presidents' personality might have a strong influence on the corporate culture, strategy formation, and achievements, and it will explain the key factor for success to small venture business companies.

According to R-I-A-S-E-C model proposed by Holland(1985), a typology of six personality types is offered as a tool for understanding individual vocational interest, work behavior, and achievement. Based on this model, a relationship between a president's typology in venture company which will be reflected in management style and their relationship with corporate behavior as well as their performance will be analyzed.



Because small and medium sized enterprises (SME's) are regarded as a new driving force to create market and employment, they are becoming popular not only in Japan, but also in the other Asian countries, as well as in the U.S and Europe countries. Therefore, it will be interesting to conduct an international comparative survey to test the relationship between president's personality type and their corporate behavior and performance in SME. Because of steady economic growth during Asian economic recession through SME's, especially in area of high-technology, Chinese Taipei, Republic of China was chosen to compare with Japan.

Purpose of this study is, first to identify the personality type most frequently found in SME's presidents for Japan and Chinese Taipei. If there is similarity in types between two sample sets, it will suggest the universality in the type of personality for presidents for SMEs. Secondly, this survey tests the effects of presidents' personality to their companies' corporate behavior and performance. If a certain type of personality shows strong effects to corporate achievements, it will suggest the type of personality that have higher potentiality in SME management.

THEORETICAL BACKGROUND

The origin of categorizing personality in career was developed by vocational counselor in education, military and clinical settings. Holland (1958) started construction of Vocational Preference Inventory and gradually modified the model to categorize people in terms of interest or personality types.

Basic ideas of Holland's (1985) R-I-A-S-E-C model is consists of three basic aspects. First, the model characterize people by their similarity to each of six personality types: Realistic, Investigative, Artistic, Social, Enterprising, and Conventional. Second, the environments in which people live can be characterized by their six model environments. Third, matching of a person with respective environment leads to outcomes include vocational choice, vocational stability and achievement. Therefore, model suggest that people search for environments that will let them exercise their skills and abilities, express their attitudes and values, and take their responsibility more confidentially.

Therefore, it will be hypothesized that presidents of SMEs show a particular personality type in common, and their personality will bring the success in their business under their type of environment.

Followings are descriptions of a. preferences, b. competencies, c. self-perceptions, and d.values for each type of personality, and figure 1 indicates the hexagonal formation of types depend on the similarity of characteristics among types.

1) Realistic Type

- a. Prefers realistic occupations or situations in which one can engage in preferred activities and avoid the activities demanded by social occupations or situation.
- b. Uses realistic competencies to solve problems at work and in other settings.
- c. Perceives self as having mechanical and athletic ability and lacking ability in human



relations.

- d. Values concrete things or tangible personal characteristics- money, power, and status.

2) Investigate Type

- a. Prefers investigative occupations or situations in which one can engage in preferred activities and competencies and avoid the activities demanded by enterprising occupations or situations.
- b. Use investigative competencies to solve problems at work and in other settings.
- c. Perceives self as scholarly, intellectual, having mathematical and scientific ability, and lacking in leadership ability.
- d. Values science.

3) The Artistic Type

- a. Prefers artistic occupations or situations in which one can engage in preferred activities and competencies and avoid the activities demanded by conventional occupations or situations.
- b. Uses artistic competencies to solve problems at work and in other settings.
- c. Perceives self as expressive, original, intuitive, introspective, independent, disorderly, and ability in acting, writing, and speaking.
- d. Values esthetic qualities.

4) The Social Type

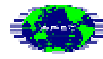
- a. Prefers social occupations and situations in which one can engage in preferred activities and competencies and avoid the activities demanded by realistic occupations and situations.
- b. Uses social competencies to solve problems at work and in other settings.
- c. Perceives self as liking to help others, understanding others, having teaching ability, and lacking mechanical and scientific ability.
- d. Values social and ethical activities and problems.

5) The Enterprising Type

- a. Prefers enterprising occupations or situations in which one can engage in preferred activities and avoid the activities demanded by investigative occupations and situations.
- b. Uses enterprising competencies to solve problems at work and in other situations.
- c. Perceives self as aggressive, popular, self-confident, sociable, possessing leadership and speaking abilities, and lacking scientific ability.
- d. Values political and economic achievement.

6) The Conventional Type

- a. Prefers conventional occupations or situations in which one can engage in preferred activities and avoid the activities demanded by artistic occupations or situations.
- b. Uses conventional competencies to solve problems at work and in order



situations. Perceives self as conforming, orderly, and as having clerical and numerical ability.

c. Values business and economic achievement.

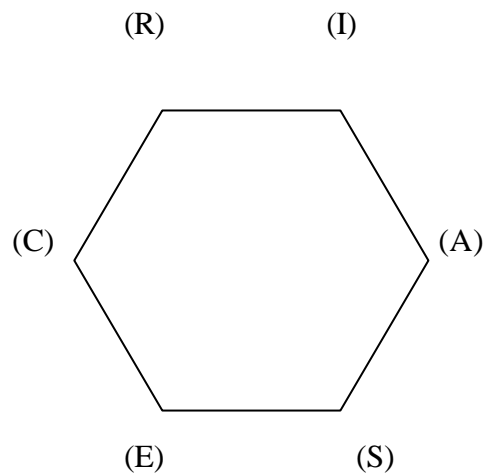


Figure 1 Hexagonal Formation of Personality Types

METHOD

Sample and Procedure

Questionnaire survey were conducted to presidents of Japanese venture business companies and SME companies in Chinese Taipei. For the Japanese survey, sample was selected from industrial sectors in “Almanac of Venture Companies 96” published by Nikkei News Paper Co.ltd(1996). Questionnaires were sent to 1,361 presidents by mail, and 335 replied by enclosed self-stamped envelop (Response rate: 24.6%). For the survey of Chinese Taipei, 1,428 companies in industrial sectors with employee size of between 100 to 300 were selected, based on the company list published by National SME agency. Questionnaire were sent directly to presidents with self-stamped envelope, and 172 replied (response rate: 12.04%).

Variables

Personality Type. Personality type was measured by thirty keywords reflecting respondents’ personality, consisting six dimensions (6 personality types x 5 words)? Sample are requested to circle all words fit to the traits of him/her. Followings are the category of types for each keyword. Realistic: adaptable, specific/concrete, straightforward, introverted, sincere; Investigative: inquisitive, independent, quiet/plain, intelligent, exacting; Artistic: theoretical, creative, imaginative, intuitive, emotional; Social: generous, cooperative, social, positive, kind; Enterprising: adventurous, impulsive, talkative, ambitious, optimistic; Conventional: conservative, prudent, practical, efficient.

Corporate Strategy. A 23 item scale developed by Kato(1996) was used to



measure corporate strategies. They are classified into five categories: financial(6), marketing(5), organizational(5), technological(3), and human resources(3) . Samples are required to choose the five most frequently used items out of 23 items at the company in last five years.

Organizational Structure. A three-item scale was used to measure the organizational structure as a corporate norm on 7-point scale. These questions focus on 1)matching of organization's management goals with the individual goals, 2)levels of corporate structure that make decisions, and 3)sharing of top management's direction and decisions with staff .

Performance. Corporate performance was measured by both quality and quantity scales. For quality scale, five stages of corporate growth level, namely 1)Start-up, 2)Risky growth, 3)Controlled Growth, 4)Maturity, 5)Seeking future diversification were questioned. On the other hand, rate of sales level for 1990 and the most recent accounting year were measured to compare the sales growth rate.

Background data. Additional background data were collected concerning president and company. For president's question, it contains age, length of service as a president, career path to be a president(company founder, succeeded a relative, succeeded a non-relative, hired from outside), generation of presidency (first, second, third, other) field of experience(technology, management, administration). On the other hand, company's question, duration of operating business, number of employees, number of internal and external board of directors were questioned.

RESULTS

Categorizing Personality Types

To categorize personality type of each sample, first of all, confirmatory factor analysis was performed to measure the effecting power to each keyword from the respective personality types. Then, each type score was calculated by adding effecting power of the words showed significant t-value? Thirdly, a z-score was calculated among six type scores to standardize the score. Finally, a personality type for each respondent was determined by the highest z-score among six types.

Table 1 shows the frequencies of each type for Japanese sample and sample of people in Chinese Taipei. For both nationalities, enterprising type was predominant (JPN: 23.3%; TWN:24.4%) and realistic type (JPN: 17.3%; TWN: 16.9%) , conventional type (JPN: 16.1%; TWN: 16.9%) are following respectively.

This result shows that entrepreneurial personality is prevailing among presidents of SME companies both in Japan and Chinese Taipei.

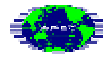


Table 1 Frequencies of R-I-A-S-E-C Personalities

	JPN		TWN	
	N	%	N	%
Realistic	58	17.3	29	16.9
Investigative	42	12.5	20	11.6
Artistic	54	16.1	26	15.1
Social	49	14.6	26	15.1
Enterprising	78	23.3	42	24.4
Conventional	54	16.1	29	16.9
Total	335	100.0	172	100.0

Chi-square Results

Table 2 indicates the result of Chi-square analysis tests the relationship between personality score and president's career path. Because career personality is supposed to be closely related to one's career experience that formed the individual profession, it was hypothesized that there is a relationship between each career personality and several indicators of career background. Out of three indicators used in this analysis, career route, generation of presidency, and field of experience, similar results was found between Japanese sample and sample of people in Chinese Taipei.

For Japanese sample, significant relationship between personality score and career route was found. Within career route, sample was asked to choose one from 1)company founder, 2)succeeded a relative, 3)succeeded a non-relative, 4)hired from outside, and higher frequencies were found as 1) company founder for Enterprising type and 2)succeeded a relative for Conventional type, whereas 3)succeeded a non-relative and 4)hired from outside for Realistic type. Therefore, founder of the company tend to have Entrepreneurial type rather than other types, however, those presidents who succeeded a relative have Conventional type, and those came from non-relative successors show Realistic type.

On the other hand, for the sample of people in Chinese Taipei, it shows a similar result with Japanese sample, but in the generation of presidency. The first president (s/he could be the same as the founder, however, the first president refer to as an official title) shows Enterprising type most frequently among personality types and the second president shows Conventional type most, whereas, fourth and other generation of presidents show Realistic types.

Therefore, both founder and the first presidents show Enterprising type of career personality most frequently, and the succeeding presidents are shifting to more conventional or administrative tendency of personality in Japan and Chinese Taipei.

Table 2 Cross-tabulation (Chi-square)
Japanese

Career Path I: Career route of the president

		R	I	A	S	E	C
1	Company founder	20	23	33	20	36	14
2	Succeeded a relative	20	12	16	19	24	30
3	Succeeded a non-relative	11	6	4	5	8	4
4	Hired from outside	5	1	1	4	2	4

Pearson's Chi-square:.024

Career Path II: Generation of presidency

		R	I	A	S	E	C
1	This company's First	19	19	28	19	34	15
2	Second	20	16	17	17	20	23
3	Third	9	3	6	8	10	7
4	Fourth	5	1	1	2	2	6
5	Other	4	2	1	2	4	1

Pearson's Chi-square:.425

Career Path III President's field of experience

		R	I	A	S	E	C
1	Technology	32	29	32	30	38	29
2	Management	20	7	15	12	19	13
3	Administration	5	6	2	3	9	8
4	Other	-	-	4	2	6	2

Pearson's Chi-square:.243

People of Chinese Taipei

Career Path I: Career route of the president

		R	I	A	S	E	C
1	Company founder	6	9	10	8	15	14
2	Succeeded a relative	5	5	8	4	9	7
3	Succeeded a non-relative	12	2	2	8	8	6
4	Hired from outside	2	3	4	4	7	1

Pearson's Chi-square:.20

Career Path II: Generation of presidency

		R	I	A	S	E	C
1	This company's First	4	8	15	6	18	10
2	Second	5	3	3	10	9	11
3	Third	5	5	2	3	6	3
4	Fourth	5	2	-	2	4	-
5	Other	7	1	2	4	1	3

Pearson's Chi-square:.01

Career Path III President's field of experience

		R	I	A	S	E	C
1	Technology	11	9	10	9	21	13
2	Management	7	3	11	9	13	8
3	Administration	5	2	2	2	4	5
4	Other	5	6	3	6	3	2

Pearson's Chi-square:.48



T-test Results

To compare the average score of continuous variables between Japan and Chinese Taipei, a t-test analysis was performed (Table 3). For background information, Japanese presidents' age and length of service show significantly higher score than that of the presidents in Chinese Taipei. Duration of operation for Japanese company was longer than companies of Chinese Taipei, however, number of employee in Chinese Taipei was surpassing that of Japanese company. There was no significant difference in number of internal board of directors between two samples, however, number of external director in the companies of Chinese Taipei was larger than Japanese companies.

Regards to the internal corporate structure, matching of organizational goals and individual goal was more compatible in the companies of Chinese Taipei. Likewise, decisions were made more participatively in the companies of Chinese Taipei. However, Japanese president think top management's direction and decisions were understood by staff better than the presidents in Chinese Taipei.

Finally, growth rate in sales was higher for Japanese SME than SME in Chinese Taipei, however, development stage was higher for SME in Chinese Taipei.

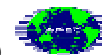
As a overall results of t-test, Japanese SME indicate more entrepreneurial characteristics for size of employees and rapid growth rate. On the other hand, although SMEs in Chinese Taipei are younger in duration of establishment than Japanese venture companies, SMEs in Chinese Taipei show more matured, well internally structured characteristics.

Table 3 Results of t-test analysis

	JPN	TWN	t-value
	Ave.(s.d)	Ave.(s.d)	*<.05,**<.01
President's age	57.79(9.01)	48.03(8.60)	14.22**
Length of service(yr)	15.09(11.12)	9.62(8.18)	6.46**
Dur of operation(yr)	34.42(16.78)	23.25(11.71)	10.03**
No of employees	128.64(171.75)	201.02(150.96)	-5.81**
Internal Board	4.80(2.75)	7.79(36.41)	-1.49
External Board	1.05(1.29)	4.42(11.01)	-5.04**
Goal matching	4.33(1.17)	4.58(1.34)	-2.50*
Decision style	2.38(1.38)	3.00(1.44)	-5.46**
Direction sharing	4.43(1.13)	4.23(1.30)	2.11*
Growth rate(%)	12.36(22.18)	2.58(9.63)	6.35**
Development stage	3.54(1.16)	3.77(0.87)	-2.81**

ANOVA Results

In order to examine the relationship between personality type and corporate behavior and performance, Analysis of variance (ANOVA) with sheffe examination was performed. As indicated in Table 4, although there were no variable indicate statistically significant level of difference in average score among personality types, all



variables contain at least one personality type has positive discrepancies to the rest of all types.

Interestingly, those highest scored types between Japanese presidents and the presidents in Chinese Taipei were different. For Japanese presidents, Entrepreneurial type shows the highest score for the growth rate, and other highest score were categorized either Social type (Stages of corporate growth, Decision style) or Investigative type (Goal matching, Direction sharing).

On the other hands, for the presidents in Chinese Taipei, Social type shows the highest score for the growth rate, and the rest of types were either Realistic type (Stages of corporate growth, Goal matching), Conventional type (Decision style) and Social type (Direction sharing).

Table 4 Results of ANOVA

	JPN		TWN	
	highest type(top)	Differences	highest type(top)	Differences
Growth rate	<u>Entrepreneurial</u>	<u>16.26</u>	<u>Social</u>	<u>8.52</u>
	Realistic	4.23	Realistic	7.27
	Investigative	5.95	Investigative	7.03
	Artistic	3.41	Artistic	7.18
	Social	5.52	Entrepreneurial	7.17
	Conventional	6.17	Conventional	6.64
Stages of corporate growth	<u>Social</u>	<u>3.77</u>	<u>Realistic</u>	<u>4.03</u>
	Realistic	.45	Investigative	.51
	Investigative	.11	Artistic	.58
	Artistic	.58	Social	.32
	Entrepreneurial	.16	Entrepreneurial	.29
	Conventional	.05	Conventional	.03
Goal matching	<u>Investigative</u>	<u>4.56</u>	<u>Realistic</u>	<u>4.75</u>
	Realistic	.26	Investigative	.13
	Artistic	.20	Artistic	.37
	Social	.21	Social	.19
	Entrepreneurial	.26	Entrepreneurial	.18
	Conventional	.43	Conventional	.14
Decision style	<u>Social</u>	<u>2.71</u>	<u>Conventional</u>	<u>3.42</u>
	Realistic	.25	Realistic	.61
	Investigative	.57	Investigative	.62
	Artistic	.50	Artistic	.24
	Entrepreneurial	.36	Social	.39
	Conventional	.28	Entrepreneurial	.69
Direction sharing	<u>Investigative</u>	<u>4.55</u>	<u>Social</u>	<u>4.96</u>
	Realistic	.08	Realistic	.89
	Artistic	.05	Investigative	1.07
	Social	.24	Artistic	.73
	Entrepreneurial	.01	Entrepreneurial	.89
	Conventional	.37	Conventional	.82

p**<.05

As a conclusion of ANOVA analysis, although there were no significant differences in average score among personality types for any variables, a highest score of specific organizational outcome was brought under a particular type of president's personality



type. It might be suspected that significance value was lowered due to the smaller number of observations in each type.

Moreover, an interesting finding is that there were difference in relationship between a type that shows the highest score and organizational outcome between Japanese sample and sample of people in Chinese Taipei. Therefore, personality type contingent in specific corporate activity may be various depend on the circumstances of each country.

Cross-tabulation for Corporate Strategy

Table 5 shows cross-tabulation between personality types and corporate strategy. Corporate strategy was ordered by frequencies of total types and top five items were listed.

According to this analysis, Japanese sample and sample of people in Chinese Taipei showed similar results. First, both samples show higher ranked strategies were concentrated in either new product development (ex. Strengthen new product development system. JPN:13.6%, TWN:9.4%) or market development (ex. Increased share in current market. JPN: 10.8%, TWN:11.9%).

Secondly, for both samples, Enterprising type shows more strategies than other types. It also means that enterprising type of president use higher ranked strategies more than other type of presidents.

These results might suggest that Enterprising type of president uses an effective style of strategies more than other type of presidents both in Japan and Chinese Taipei.

Table 5 Cross-tabulation for Corporate Strategy

Japan

#	Item	Total	R	I	A	S	E	C
1	Strengthen new product development system	13.6	11.0	9.2	12.0	8.3	15.6	9.8
2	Increased share in current markets	10.8	8.6	7.4	9.8	6.7	11.7	8.3
3	Expansion into new product	8.9	8.9	5.2	7.4	6.4	8.6	6.7
4	Strengthen facilities to allow for expanded production capacity	6.6	5.5	5.5	5.2	3.1	7.4	5.5
5	Improved productivity of Company assets through streamlining	6.4	4.9	2.8	3.7	5.5	8.6	5.5

Chinese Taipei

#	Item	Total	R	I	A	S	E	C
1	Increased share in current markets	11.9	12.2	6.1	8.5	9.1	12.2	9.8
2	Increased share in current markets	9.4	8.1	8.5	6.7	4.3	12.2	7.9
3	Strengthen facilities to Allow for expanded production capacity	9.2	9.1	6.1	4.9	8.5	8.5	7.3
4	Increased facilities investment to enable streamlining, energy conservation, and labor saving	7.8	9.1	3.0	4.3	8.5	9.8	6.7
5	Expansion into new product	7.8	6.1	4.3	2.4	6.1	13.4	5.5



Correlation Results

Table 6 indicates the correlation coefficient between score for each type and dependent variables. For Japanese sample, no significant relationship was found between growth rate and personality types. However, positive (Conventional) and negative (Enterprising, Artistic) relationship was found for development stage. However, a growth speed, a new variable calculated from developing stage divided by establishing years show positive relationship with artistic score and enterprising score. From this result, it will be assumed that company develops faster under Artistic and Enterprising types of presidents in Japan.

On the other hand, only significant coefficient was found between social score and growth rate in sample of people in Chinese Taipei.

Therefore, different types of performance were expected in relationship with president's career personality scores. For Japanese sample, enterprising and artistic score might accelerate growth speed, however, not likely for the growth rate in sales. On the other hand, higher social score might improve the growth rate in sales in Chinese Taipei.

Table 6-1 Correlation Analysis (Japan)

	R	I	A	S	E	C
Growth Percentage	-.064	-.054	-.047	-.068	-.068	-.054
Developing Stage	-.010	.015	-.094*	.045	-.094*	.112*
Developing Speed	-.015	.065	.116*	.080	.121*	.058

*<.05 **<.01

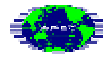
Table 6-2 Correlation Analysis (Chinese Taipei)

	R	I	A	S	E	C
Growth Percentage	.143	.146	-.112	.184*	-.049	.117
Developing Stage	.007	-.064	-.085	-.076	-.112	.035
Developing Speed	-.063	-.011	.082	-.016	.080	-.080

*<.05 **<.01

CONCLUSIONS

This study aimed to identify the validity of Holland's R-I-A-S-E-C typology in relationship with corporate structure, use of corporate strategy and corporate performance. As a result of a comparative survey, similarities and differences between presidents of Japanese venture companies and SMEs of Chinese Taipei were identified.



Similarities were, the exceeding percentage of Enterprising type of career personality, relationship between Enterprising type and president's career path as founder or the first, and frequently use of corporate strategy by Enterprising type of presidents. Therefore, Enterprising type show features in common for those presidents.

On the other hand, differences were open and participated style of organizational structure in SME of Chinese Taipei, and contingencies in career personality and organizational outcomes between two samples. Although Japanese sample and sample of people in Chinese Taipei tend to use the same kinds of corporate strategies, outcomes are varied with managerial conditions that companies are facing.

Implication of this study could be two folds. For academic implication, this study will indicate a new approach to analyze the relationship between top leader's management style based on Holland's R-I-A-S-E-C model and corporate behavior as well as performance. Because this model showed Enterprising type as a majority of career personality between two samples, it will support the validity of the model across the cultural difference. Therefore, it will be interesting to apply this model to other samples in different industries, corporate size, and rank in organization.

For practical implication, since there were contingencies between type of career personality and style of strategy to improve the company performance, president's R-I-A-S-E-C type will be used as a marker to find out the appropriate corporate strategy for each company lead by president have different type of career personality. Also, the result of this survey will provide an information for developing and selecting successor who have an appropriate career personality to carry over the business from the previous generation.

For future of study, increasing number of samples composed of different nationalities will be demanded to verify the generality of the R-I-A-S-E-C type indicator to measure the relationship between president's career personality and corporate behavior.



REFERENCES

- Agency of Small and Medium-scale Enterprises (1999) White Paper of Small and Medium-scale Enterprises, Ministry of Finance.
- Gottfredson, G? D? & Holland, J.L.(1989) Dictionary of Holland occupational codes. Palo Alto, Calif.:Consulting Psychologist Press.
- Holland, J.L.(1973) Making vocational choices: A theory of careers. Engelwood Cliffs, N.J.:Prentic-Hall.
- Holland J.L.(1985) Making Vocational Choices A theory of vocational personalities and work environment, N.J:Prentice-Hall.
- Kato S.& Nagai, H.(1995) Organizational Characteristics of Small Business in Japan(III) –A comparative study between registered and venture companies-, Bulletin of the institute of business administration. no.115.
- Nagai, H.(1998) The Future of Japanese-Style Management –Changes in the Corporate Environment and Reorganization-, NIRA Policy Research, vol.11. no.9.
- Shyh-Jer Chen(1997) The Development of HRM Practices in Chinese Taipei, Asia Pacific Business Review, vol. no.4.

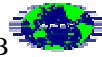
**AN ORGANIZATIONAL CITIZENSHIP BEHAVIORS(OCB)
MODEL AND SMEs EMPLOYEES' OCB**

Hun Chu

**College of Business Administration
Chung-Ang University (Seoul, Korea)**

Jaebok Kim

**College of Business Administration
Chung-Ang University (Seoul, Korea)**



AN ORGANIZATIONAL CITIZENSHIP BEHAVIORS(OCB) MODEL AND SMEs EMPLOYEES' OCB

ABSTRACT

This paper has two major purposes. One is to suggest a valid OCB definition and model. The other is to analyze SMEs employees' OCB problems and their causes by comparing the OCB of SMEs employees with that of large enterprises employees based on the previously validated OCB model.

For the first one, this paper defined OCB as individual members' responsible behaviors corresponding to the rights encumbered by the belonging organizations. Based on the OCB construct, it suggested a nomological network "employees' rights → relational ties → OCB responsibilities", and validated it using Korean employees data collected from the six companies including SMEs and large enterprises.

The comparison of OCB between SMEs employees and large enterprises employees showed that overall large enterprises employees' OCB was higher than that of SMEs employees, and that the differences in their obedience and functional participation were very significant.



INTRODUCTION

With rapidly changing business environments, workers' dysfunctional behaviors such as their selfishness, low organizational commitment, and scarce responsibilities are appearing as a critical issue in human resource management. In some APEC countries, such behaviors threaten even the survival of companies. Small and medium sized enterprises(SMEs) which are relatively weaker in their technological and financial resources compared with large enterprises are likely to be more fragile to such behavioral changes. For SMEs' prosperity, therefore, sustaining SMEs workers' behaviors positively must be more important than any other things.

Viewed from the point, it is worth to research on the organizational citizenship behaviors(OCB), which are increasingly emphasized by both HRM scholars and managers. However, since the terms "citizen" and "citizenship" are employed in a variety of ways with a range of meanings, from precise and limited to vague and broad, OCB scholars and managers have not yet come to an agreement about what OCB really means. This not only further increases the potential ambiguity and subjectivity of the OCB construct, but also prevents OCB studies from dealing with the core problems brought by such behavioral changes.

Accordingly, first this study is to suggest an OCB definition and model and to assess them, and secondly to compare OCB between SMEs and large enterprise workers, based on the previously suggested OCB definition and model.

DEFINITION ON OCB

Early organizational researchers defined OCB as individual employees' behaviors that are above and beyond their role requirements and that are organizationally functional. Almost recent OCB researchers are still relying on the definition, only showing a little differences in their operational definitions and dimensions. However, recently the construct validity of the definition has been criticized. In practice, the role perceptions in organizations are rarely fixed and the criteria to discern whether the roles are organizationally functional are unclear. Relying on the definition, therefore, is likely to continue increasing the potential ambiguity and subjectivity of OCB themselves. Some people understand its dimension as altruism, courtesy, consciousness, sportsmanship, compliance, or etc. Others understand it differently. Such ambiguity and subjectivity bothers even further OCB studies to continue.

Originally, citizenship is the term derived from geopolitical arena. Current political sciences generally describe it as the status and role which defines the authority and obligations of individual members of a community(Cooper, 1986). The status and role may be formally codified in terms of qualifications, rights, and obligations by constitutions, charters, and laws, or informally determined by values, tradition, and consensus. Thus, a citizen is one who qualifies for the status of citizenship as prescribed formally or informally by a particular community, and who is encumbered with the obligations assigned to this role by that community. On the other hand, a non-citizen is one who does not have the qualifications for the status of citizenship and the obligations assigned to this role by that community. The essential differences between citizens and non-citizens are in their status and role. Eventually, the differences arise from whether they have membership in a particular community. It will be clear when we review the history of the Old and Middle Ages, and of modern ages, western



or oriental communities. Just until the democracy based on human freedom and equality had become a common rule to deal with whole societies, only a small group of privileged people among total population belonged to the citizens. At that time, however, citizen rights encumbered by their citizenship were more emphasized rather than its obligations. Some historical events such as French Revolution, American Independence, and Industrial Revolution provided the traditional citizenship with a great turning point. They brought about great disturbances in the whole society including political, social, and economic areas. However, since there was no a certain alternative to maintain whole societal stability at that time, it could not help accepting all population as citizens who had rights and obligations as well.

These changes in the civic citizenship tradition continued to spread into all societal areas, along with the maturity of industrialism and the following expansion of the middle classes. On the other hand, the recognition that depending on the economic exchanges between employers and employees had some limitations to increase industrial production had also worked as an important factor. As the result of these changes, citizenship has also become a common rule to deal with industrial organizations, as well as political system. In the process, the obligations corresponding to the rights become more emphasized rather than the rights themselves.

Based on the logic suggested in the above, we can define OCB as individual members' responsible behaviors corresponding to the rights encumbered by their belonging organizations. That is, the OCB construct is composed of three main components: membership, members' rights, and members' responsibilities.

OCB MODEL

Each component of OCB construct does not exist alone, respectively. They are closely intertwined each other. They make a network such as "rights--> membership--> responsibilities". That is, employees' perception on her or his rights in organization affects the strength of relational ties, and employee's responsible behaviors. We can depict the relationship of the three components as follows:

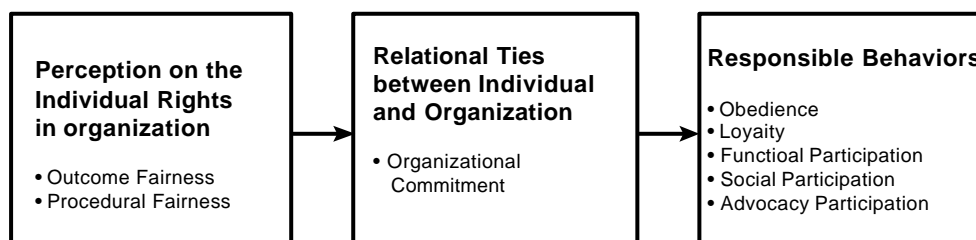


Figure 1: OCB Model

Then, how can we specify the OCB components respectively and measure them? It may depend on our creativity and our background knowledge on organizations.

Model Specification



Individual Employees' Rights

Generally individual employees' rights are codified formally by government laws, company rules, joint agreements between employers and employees, or determined informally by organizational culture. T.H. Marshall(1965), in reviewing three centuries of English history to explain the extension of citizens' rights to an ever broader share of the population, identified three categories of rights: civil(legal protection of life, liberty, and property), political(participation in decision making), and social(adequate level of socioeconomic benefits) rights. Marshall's categorization of civil, political, and social rights can be applicable to analyze organizations as well as societies.

Organizational civil rights would include fair treatment in routine personnel matters such hiring, assignment, and evaluation, and guarantees of due process when problems arise(e.g., grievance investigation and disciplinary proceedings).

Organizational political rights would include the ability to participate in decision making both about current operational matters and about broader organizational policies, objectives, and spending plans.

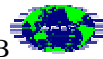
And organizational social rights would include economic benefits(regular salary/wages, bonuses, insurance, pensions, etc.), social status symbols, and training or educational opportunities.

Organizational rights distinguish members from nonmembers. Given the hierarchical structure typical of most organizations, however, unequal rights within organizations are not only possible but also likely. Distortion of rights on the pretext of organizational effectiveness or efficiency, and high-level managers' hierarchical attitude are also related with unequal rights. These unequal rights eventually influence members' relational ties and OCB.

However, it is difficult to measure individual employee's rights directly, since they depend on individual employees' relative, subjective perception. The perception can generally be expressed in the feeling of relative deprivation(Folger, 1986) which is shaped by the subjective comparison with the others in the same or other organizations. According to the justice theory by Greenberg(1987), the feeling of relative deprivation arises from their perception on "outcome justice" and "procedural justice". Outcome or distributive justice is the perceived fairness of outcomes received. And procedural justice is the perceived fairness on procedures or processes to reach to the outcomes. Then, individual employees' rights can be taken by measuring their perception on both outcome justice and procedural justice.

Relational Ties(Membership)

Membership is the beginning point in OCB construct. Once the membership determined by individual choices, it constantly changes so that it determines the strength of relational ties between organizations(employers) and individual employees. Thus, we can say that relational ties are the dynamic explanation of membership. However, they are different from employees' rights. While employees' rights are based on individual subjective view about how much the



organizations(or employers) recognize employees' rights as their duties, relational tie are concerned about the relationships between individual employees and employers(or organizations). That is, while individual employees' perception on rights depends on their one-sided views, relational ties depend on reciprocal relationships between employees and organizations. Thus, they contribute to explaining the dynamic process to deal with unequal rights when inequality happens between individual employees and organizations. On the other hand, relational ties work as a mediator linking individual perception on rights and citizenship behaviors.

The relational ties may have numerous types. J.W.Graham(1991) categorized them into four types by synthesizing the previous studies on membership : coercive relationship, Gesellshaft relations, Gemeinschaft relations, and covenantal relationships. Gemeinschaft relations include nonrational, affective, emotional, traditional, and expressive of social actions as in a family. Gesellschaft relations comprise the rational contractual, instrumental, and task-oriented actions, as in a business corporation. Coercive relationships(Etzioni, 1975) are the special form of Gesellshaft relations, where some are obliged involuntarily to comply with term set by others, as in slaves. And covenantal relationships are characterized by open-ended commitment, mutual trust, reciprocity, and shared values. Graham (1991) asserts covenantal relationships are the most desirable relationships to enhance OCB. Covenantal relationships also differs from a social exchange which is based on a general notions of fairness, and from a psychological contract which is based on an individual belief in a reciprocal obligation between self and organization.

According to the logic of covenantal relationships, relational ties are not the fixed ones. They are changing constantly depending on mutual open-ended commitment, mutual trust, reciprocity, and shared values between organizations and employees. Eventually, the strength of relational ties gives affect to OCB responsibilities.

The strength of relational ties can be measured by asking the employees' organizational commitment to their organizations, because it is not the matter to ask organizations themselves. Generally, the organizational commitment questionnaire developed by Mowday et. al.(1982) is used to measure it.

OCB Responsibilities

Citizen responsibilities described in a geopolitical arena can be applicable as a guide to identifying OCB. According to classical philosophy and modern political theory, citizen responsibilities are obedience, loyalty, and participation(Aristotle, 1941; Cary, 1977, Inkeles, 1969, etc.). Each category focuses on a different facet of the interrelationship that citizens have with another and their nation/state/community.

Obedience is respect for orderly structure and processes. Citizens are responsible for obeying existing laws, and the laws protect them, as well. For example, laws may require that citizens pay taxes, drive on a designated side of road, refrain from violating other's rights, and at times even risk their lives in military service. Loyalty concerns the expansion of individual welfare functions to include the interest of others, the state as a whole, and the values it embodies. This category includes uncompensated contributions of effort, money, or property,



protecting or enhancing a state's good reputation in the eyes of outsiders, and cooperating with others to serve the common interest rather than seeking free rider. In addition, participation concerns participation in governance. The behaviors of this category include devoting time and effort to the responsible governance, keeping well informed, sharing information and ideas with others, engaging in discussions about controversial issues, voting in whatever manner is provided under the laws, and encouraging others to do likewise.

The three categories described above can be applied into organizational settings (Inkeles, 1969) as follows: organizational obedience, organizational loyalty, and organizational participation. According to Inkeles, organizational obedience is an orientation toward organizational structure, job descriptions, and personnel policies that recognizes and accepts the necessity and desirability of a rational structure of rules and regulations. Obedience may be demonstrated by respect for rules and instructions, punctuality in attendance and task completion, and stewardship of organizational resources. Organizational loyalty is identification with and allegiance to organizational leaders and the organization as a whole, transcending the parochial interests of individuals, work groups, and departments. Representative behaviors include defending the organization against threats, contributing to its good reputation, and cooperating with others to serve the interests of the whole. And, organizational participation is interests in organizational affairs guided by ideal standards of virtue, validated by keeping informed, and expressed through full and responsible involvement in organizational governance. This behavior includes attending non-required meetings, sharing informed opinions and new ideas with others, and being willing to deliver bad news or support an unpopular view to combat groupthink.

On the other hand, organizational participation is more complex. It can be classified into three categories (Van Dyne, Graham, & Dienesch, 1994): social participation, advocacy participation, and functional participation. Social participation is a form of participation through interaction with others. This includes attending meetings, engaging in positive communications with others, and involvement in other affiliate group activities such as attending commemorative occasions, community social events, and public ceremonies. Advocacy participation is a kind of participation, which describes innovation, maintaining high standards, challenging others, and making suggestion for change. The behaviors, typical of an internal change agent, target at other members of an organization and reflecting a willingness to be controversial. And functional participation is related with personally focused behaviors. The behaviors include participation through performing additional work activities, self-development, volunteering for special assignments, and highly committed hard-working. They are typical of a dedicated individual contributor whose commitment, self-development, and participation add value to the functioning of the organization.

Highly responsible behaviors require a balance of obedience, loyalty, and participation, rather than focusing on one dimension at the expense of the others. That is, each dimension is highly correlated each other when OCB responsibilities are high.

To measure the five dimensions of OCB responsibilities, this study adapted the instrument developed by Van Dyne, Graham, and Dienesch (1994). However, it is questionable if the scale is fit for explaining Korean employees' citizenship behaviors, because it was developed in a different cultural background from Korea. A study by Farh, Earley, and



Lin, on “a cultural analysis of justice and organizational citizenship behavior in Chinese society(1997)”, suggests that cultural difference works as an important factor for explaining OCB.

Table 1 : Comparison of Western and Chinese OCB Scales

Western OCB Scale	Chinese OCB Scale
Etic Dimensions	
Civic Virtue	Identification with company
Altruism	Altruism toward colleagues
Conscientiousness	Conscientiousness
Emic Dimensions	
Sportsmanship	Interpersonal Harmony
Courtesy	Protecting Company Resources

Thus, rather than using the instrument as it is, this study conducted explanatory factor analysis using original data and confirmatory factor analysis using separately collected cross-validation data.

Validation of OCB Model

Data and Procedure

To validate the OCB model, this study adapted already developed scales and used them with some modification: Niehoff & Moorman's fairness scale (1993) for employees' perception on their rights, Mowday et. al.'s OCQ scale(1982) for relational ties, and Van Dyne, Graham, and Dienesch' OCB scale(1994) for employees' responsible behaviors. Twelve sets of data totaling 603 employees collected, based on questionnaire response. Six sets of these data were for the initial data collection, and the rest six sets of data collected later were for cross-validation of the instrument adapted here. The original data sets included respondents from a large commercial bank(N=208), an insurance company(N=97), a software house(N=40), a pulp production company(N=137), a security company(N=24), and a leasing company(N=97); three companies hire over 1,000 employees and the rests hire below 500 employees. All data collected by random sampling method.

The cross-validation data collected from 100 supervisors from six companies; a petrochemical company, a software house, a pharmacy company, a construction company, a loan firm, and a metal production company. two of them hire over 1,000 employees, and the rests hire below 300 employees.

In addition, the some demographic data on sex, tenure, education, and marital status, and company size collected for the comparison of OCB level between large enterprises and SMEs workers



Validation of OCB Model

For the validation of OCB model, this study follows the following procedures:

First, it conducted explanatory factor analysis(Varimax rotation) for the assessment of the Niehoff & Moorman’s fairness scale, Mowday et. al.’s OCQ scale, and Van Dyne, Graham, and Dienesch’ OCB scale, respectively, using original data. Based on the result, some items dropped from the original questionnaire. It showed that there existed some differences between Korean and Western employees in their OCB factor structure.

Table 2: OCB Factor Structure

Order of Importance	Western Employees	Korean Employees
Factor 1	Loyalty	Obedience
Factor 2	Obedience	Advocacy Participation
Factor 3	Social Participation	Loyalty
Factor 4	Advocacy Participation	Functional Participation
Factor 5	Functional Participation	Social Participation

And second, it again conducted confirmatory factor analysis(Varimax rotation) for the new instrument that was made based on the result of explanatory factor analysis, respectively, using cross-validation data collected by second questionnaire. The result showed that all the three scales were valid.

Table 3: The Results of Confirmatory Factor Analysis

Scale	Chi-square Value	Degree of Freedom	Probability level	GFI
Perception on Rights	29.053	34	0.709	0.917
Relational Ties(OC)	7.135	9	0.623	0.964
OCB Responsibilities	5.019	5	0.414	0.970

As the result, it was possible to use the original data for further analysis. The mean value, standard deviation, and reliability(Cronbach’s α) of each variable was as follows:



Table 4: Mean, Standard Deviation, and Cronbach's α

Scale	Variable Name	Mean (7 points scale)	Standard Deviation	Cronbach's α
Perception On Rights	Outcome Justice	3.9798	0.9760	0.8409
	Procedural Justice	3.2998	1.1618	0.8168
Relational Ties(OC)	Organizational commitment	4.7562	0.9936	0.8120
OCB Responsibilities	Obedience	5.3805	0.7864	0.9087
	Advocacy Participation	4.7956	0.8117	0.9072
	Loyalty	4.6371	0.8777	0.7995
	Functional Participation	4.5581	0.8155	0.7473
	Social Participation	4.5152	1.0516	0.7141

And third, it conducted covariance structure analysis to assess the OCB model suggested in the above, using maximum likelihood method. For this analysis, AMOS 3.61 version was used. On the other hand, to make the model parsimonious, the unknown variables such as personal characteristics(personality and demographic variables), job characteristics, and organizational culture did not include in the model. The possible unknown variables treated as error terms in the Model. The results of covariance structure analysis are as follows:

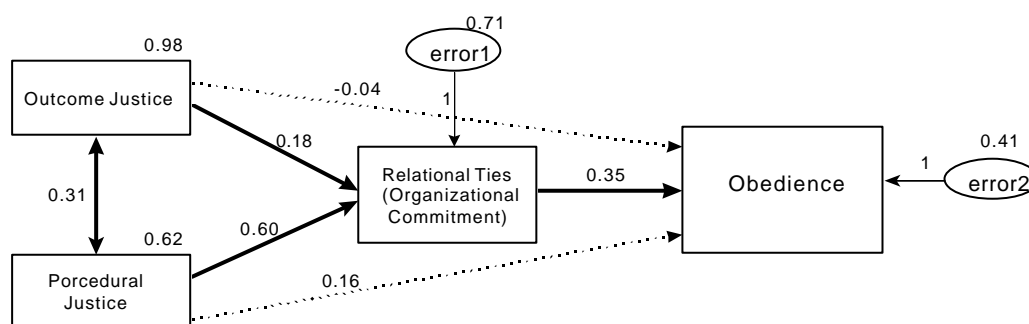


Figure 2: Obedience Behavior Model

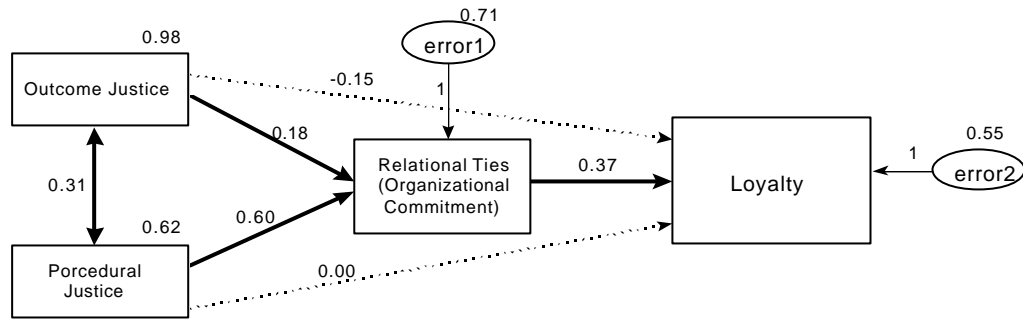


Figure 3: Loyalty Behavior Model

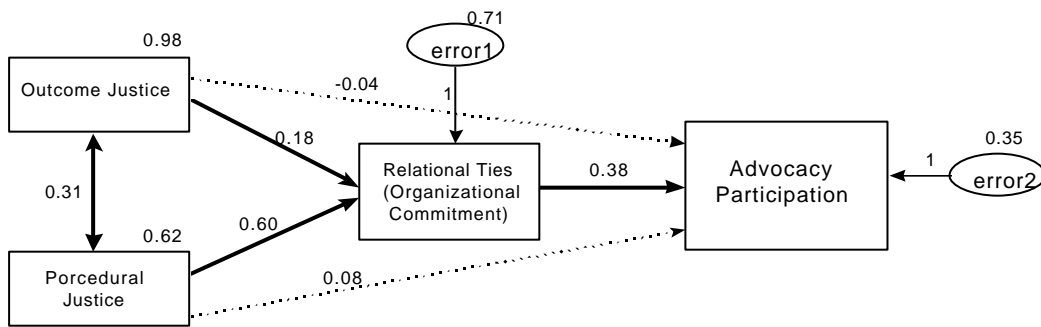


Figure 4: Advocacy Participation Behavior Model

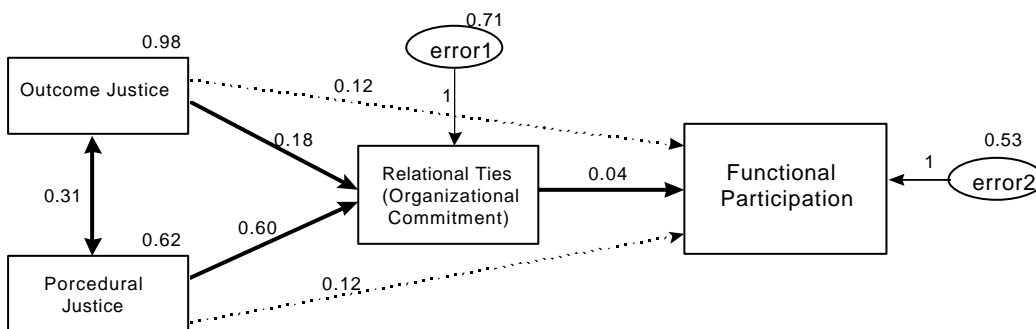


Figure 5: Functional Participation Behavior Model

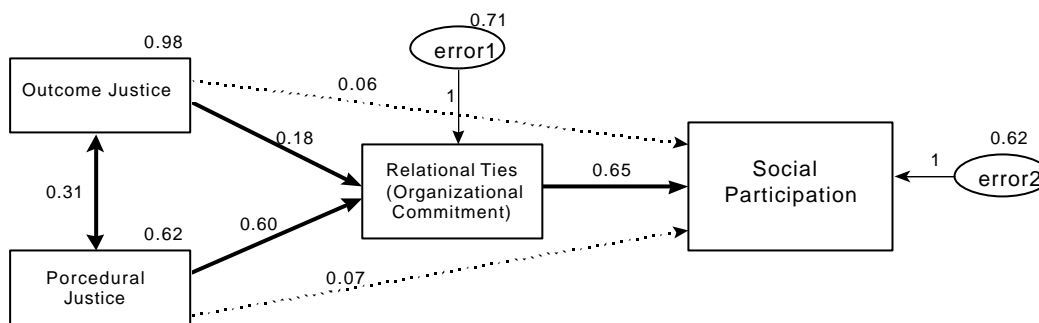


Figure 6: Social Participation Behavior Model

The fit index of each OCB model estimated by covariance structure analysis is as follows:

Table 3: Fit Index of OCB Model

Model	Chi-Square D.F.(Degree Freedom). P(probability)	GFI	AGFI	NFI	RMR
Obedience Model	Chi-square=1.475 D.F.= 2 p = 0.478	0.988	0.939	0.970	0.020
Advocacy Participation	Chi-Square=0.568 D.F.= 2 p = 0.753	0.995	0.976	0.990	0.012
Loyalty Model	Chi-Square=0.157 D.F.= 2 p = 0.374	0.984	0.919	0.986	0.041
Functional Participation	Chi-Square=0.247 D.F.= 2 p = 0.291	0.980	0.900	0.932	0.044
Social Participation	Chi-Square=0.603 D.F.=2 p = 0.740	0.995	0.975	0.991	0.023

Result

The result showed that the OCB Model was valid and reliable. Thus, we can get to define organizational citizenship behaviors as individual members' responsible behaviors corresponding to the rights encumbered by the belonging organizations. Moreover, we can realize that OCB is determined through the following process: employees' perception on rights → relational ties(OC) → OCB responsibilities.



COMPARISON OF OCB BETWEEN SMES AND LARGE ENTERPRISES

Based on the OCB model previously validated, we can get to compare the differences of OCB between SMEs workers and large enterprise workers. Let us go to the analysis.

For that, besides the OCB variables, this study included the other five variables into analysis; sex, tenure, education, marital status, and company size. Here, multiple regression analysis and ANOVA are used.

Comparison of OCB level

Basically, there exist some differences between Large enterprises and SMEs workers in their OCB level. The overall OCB level of Large Enterprise workers is higher than that of SMEs', except advocacy participation. Among them, particularly the differences in functional participation and obedience are statistically significant. The result of ANOVA on OCB responsibilities is as follows:

Table 6: Comparison of OCB Level between SMEs and LEs

Dimension of OCB	Size	Mean	S.D	F-value	P
Obedience	SMEs	5.2542	0.7445	5.707	0.017*
	Les	5.4265	0.7969		
Loyalty	SMEs	4.6170	0.8277	0.115	0.734
	Les	4.6444	0.8961		
Advocacy Participation	SMEs	4.8659	0.7174	1.651	0.199
	Les	4.7700	0.8427		
Functional Participation	SMEs	4.3975	0.8084	8.629	0.003**
	Les	4.6168	0.8113		
Social Participation	SMEs	4.4493	1.0330	0.863	0.353
	Les	4.5392	1.0584		

- Statistically significant in $P < 0.05$ level, ** statistically significant in $P < 0.01$ level

In addition, the other differences between SMEs and Large enterprises was found in their duration of education and tenure, and the differences were significant statistically(in $P < 0.05$ level). The detail structures of tenure and duration of education are as follows:

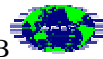


Table 7: Structure of Tenure and Education

		Large Enterprises	SMEs
Duration of Education	High School Graduate	39%	16%
	College Graduate	58%	78%
	Over College Graduate	3%	6%
Tenure	Below 1 Year	5%	4%
	1 - 3 Years	18%	21%
	4 - 6 Years	22%	33%
	7 - 9 Years	23%	21%
	Over 10 Years	32%	21%

Additionally, there were some differences in their sex, age, and marital status, but they are not significant.

Causal Factors for OCB Differences

In order to catch up the causal factors that made the differences in functional participation and obedience, multiple regression analysis conducted using OCB variables in the state that company size, tenure, and education were controlled.

Table 7: Causal Factors for Obedience and Functional Participation

	Obedience	Functional Participation
Company Size	0.043	0.085*
Duration of Education	0.058	-0.003
Tenure	0.224**	0.233**
Outcome Justice	0.097*	0.267**
Procedural Justice	-0.279**	-0.040
Relational Ties(OC)	0.427**	0.172**
R ²	0.251	0.216
F-value	33.285**	27.222**

* Statistically significant in $P < 0.05$ level,

** Statistically significant in $P < 0.01$ level

The result showed that outcome justice, procedural justice, and relational ties significantly affected obedience, and that outcome justice and relational ties significantly influenced functional participation. According to the questionnaire items, the detail influential elements for obedience and functional participation are as follows, respectively:



Table 9: Influential Elements of Obedience and Functional Participation

	Factors	Elements
Obedience	Outcome Justice	Evaluation, Opportunity for development, Compensation, Responsibility, Punishment.
	Procedural Justice	Participation in decision-making, Grievance system, Clearness of policies, Discriminated personnel system.
	Relational Ties	Company satisfaction, Loyalty to company, Pride to company, Self-confidence to company's success, Congruence with company's value.
Functional Participation	Outcome Justice	Evaluation, Opportunity for development, Compensation, Responsibility, Punishment.
	Relational Ties	Company satisfaction, Loyalty to company, Pride to company, Self-confidence to company's success, Congruence with company's value.

On the other hand, when estimating the differences between SMEs and Large Enterprise workers in outcome justice, procedural justice, and relational ties, we could also find out a significant difference (in $P < 0.05$ level) only in relational ties.

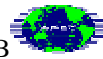
Interpretation

Viewed from all the above analysis, compared with large enterprise workers, SMEs workers' relatively low OCB level in their obedience and functional participation apparently derived from their low relational ties. That is, SMEs workers seemingly have some problems in their company satisfaction, loyalty to company, pride to company, self-confidence to company's success, and congruence with company's value. However, it is hard to conclude the problems are the matters of relational ties themselves. According to the OCB model, relational ties are directly influenced by employees' perception on their rights. Eventually, their relatively weaker OCB is related with perception on rights in the belonging organizations. The items of the employees' rights include the perception on evaluation system, self-development system, compensation system, control system, decision-making system, grievance system, operational system, personnel system, etc.

They are the matters of their management system. Then, SMEs workers' OCB problems are from their relatively fragile management system. Thus, we can assert that, to increase SMEs worker's OCB level, it is most urgent to improve SMEs' management system. For that, the development of small but powerful management system is strongly required.

CONCLUSION AND DISCUSSION

This paper had two major purposes. One was to suggest an OCB model based on a



new definition of OCB. The other was to analyze SMEs workers' OCB problems and their causes. To do them, this paper was indebted to Van Dyne, Graham, and Dienesch(1994), and Graham(1991). However, this is different from them in the following three things:

First, this paper interpreted and specified the individual members' rights into the individual members' perception on outcome justice and procedural justice. Marshall's typology on citizen rights, Greenberg's justice theory, and Folger's relative deprivation theory back the logic.

Second, this paper suggested a nomological network based on OCB construct and validated it with use of covariance structure analysis.

Third, this paper interpreted and specified the relational ties into the employees' organizational commitment.

Fourth, this paper adapted the previously developed measurement instruments by Niehoff & Moorman(1963), Mowday et. al.(1982), and Van Dyne, Graham, & Dienesch(1994). In addition, this paper used them by assessing with use of explanatory factor analysis and confirmatory factor analysis, rather using them directly.

About OCB Model

The OCB model as a process model may have the following advantages :

First, it will be possible to explain the dynamics of employees' behavioral changes systematically. Thus, it is likely to contribute to the development of alternatives appropriate to the problems found by each step. For example, if a slight problem happens in the stage of employees' perception on rights, we may suggest some alternatives after checking up how much it affects the second and third stage. Without understanding the whole processes, it may be hard to suggest an appropriate alternative so that it will bring about the waste of time and efforts.

And, second, it may be possible to reach the consistent results in OCB studies, by bringing OCB variables together in a grand model. The reason that some previous OCB studies had no consistent outcomes might be related with it.

However, this model may have some limitations in including diverse variables into the model, driven by searching for the parsimony of model. We may consider including, for example, personal characteristics such as personality and diverse demographic variables, job characteristics, organizational culture, and leadership style into the model.

On the other hand, the following two things that found in the process of this study will be suggestive for the future OCB study:

The first one is that the OCB factor structure reflects the characteristics of organizational or overall society's culture. Therefore, there might be some differences in their OCB factor structure between Chinese and Korean, and between Western and Asian. This tells that the development of OCB measurement instruments appropriate to their own cultural



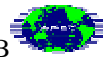
environments is required.

And, the second is that this study depends on some limited data collected from Korean employees working for Korean companies. It requires generalization. For that, longitudinal studies and applications onto a variety of organizations are requested.

About SMEs Workers' OCB

The second purpose of this study was to analyze SMEs workers' OCB problems and their causes by a comparison with large enterprise workers' OCB. The analysis used ANOVA and multiple regression analysis. The result by ANOVA showed that overall the OCB level of large enterprise workers was relatively higher than that of SMEs workers and that there existed significant differences between them in their obedience and functional participation. In addition, their education and tenure were significantly different each other.

And the result by multiple regression analysis showed that the SMEs workers' relatively low OCB in their obedience and functional participation was influenced both by their organizational commitment and by their perception on outcome justice and procedural justice in organizations. However, considering the already validated OCB model(perception on justice-->organizational commitment-->OCB responsibilities), organizational commitment are directly connected to OCB responsibilities, and the perception on outcome justice and procedural justice precede organizational commitment. Therefore, SMEs workers' relatively low OCB in their obedience and functional participation is directly influenced by their organizational commitment; satisfaction to company itself, loyalty to company, pride to company, self-confidence to company's success, and congruence with company's value. However, their organizational commitment is determined by their perception on outcome justice and procedural justice in the organizations. That is, the perception on evaluation, self-development opportunity, compensation, punishment, responsibilities, decision-making, grievance system, policy operation, personnel system, etc. work for the causes of organizational commitment. These items are about management system. Then, the beginning point of SMEs workers' OCB problems is SMEs' relatively fragile management system. Thus, we can conclude that for SMEs' prosperity, the improvement of SMEs' management system is most urgent.



REFERENCES

- Barber, B.(1984). Strong Democracy : Participatory Politics for a New Age, University of California Press.
- Bateman, T. S., & Organ, D. W.(1983). Job Satisfaction and The Good Soldier : The Relationship between Affect and Employee "Citizenship", Academy of Management Journal, Vol. 26, pp. 587-595.
- Blau, P.(1964). Exchange and Power in Social Life, New York : Wiley.
- Brief, A. P. & Motowidlo, S. J.(1986). Prosocial Organizational Behavior, Academy of Management Review, Vol. 11, No. 4, pp. 710-725.
- Cooper, T. L.(1986). Citizenship in an Age of Scarcity : A Normative Essay on Ethics for Public Administrators, Politics and Administration : Woodrow Wilson and Contemporary Public Administration, James Bowman and Jack Rabin(Ed.), New York : Marcel Dekker.
- Farh, Jiing-Lih, Earley, P. C., & Lin, Shu-Chi(1997). Impetus For Action : A Cultural Analysis of Justice and Organizational Citizenship Behavior in Chinese Society, Administrative Science Quarterly, Vol.42, pp.421-444.
- Folger, R.(1986). Rethinking Equity Theory : A Referent Cognitions Model in H.W. Bierhoff, R.L. Cohen, & J. Greenberg(Eds.), Justice in Social Relations, pp. 145-162, Plenum, NY.
- Gawthrop, L. C.(1984). Conceptual and Theoretical Perspective on Citizenship and Public Administration, Public Administration Review, Special Issue(March, 1984), pp. 101-107.
- Graham, J. W.(1991). An Essay on Organizational Citizenship Behavior. Employee Responsibilities and Rights Journal, Vol. 4, No. 4, pp. 249-270.
- Greenberg, J.(1987). A Taxonomy of Organizational Justice Theories, Academy of Management Review, Vol. 12, pp. 9-22.
- Greenberg, J.(1990). Organizational Justice : Yesterday, Today, and Tomorrow, Journal of Management, Vol. 16, No. 2, pp. 399-432.
- Inkeles, A.(1969). Participant Citizenship in Six Developing Countries, American Political Science Review, Vol. 63, pp.1120-1141
- Moorman, R. H.(1991). Relationship Between Organizational Justice and Organizational Citizenship Behaviors : Do Fairness Perception Influence Employee Citizenship? Journal of Applied Psychology, Vol. 76, No. 4, pp. 845-855.
- Morrison, E. W.(1994). Role Definitions and Organizational Citizenship Behavior : The



importance of the Employee's Perspective, Academy of Management Journal, Vol. 37, No. 6, pp. 1543-1567.

Mowday, R. T., Porter, L. W., & Steers, R. M.(1982). Employee-Organization Linkages : The Psychology of Commitment, Absenteeism, and Turnover, Academic Press, NY.

Niehoff, B. P., & Moorman, R. H.(1993). Justice As a Mediator of the Relationship between Methods of Monitoring and Organizational Citizenship Behavior, Academy of Management Journal, Vol. 36, No. 3, pp. 527-556.

Porter, L., Steers, R., Mowday, R. & Boulian, P.(1974). Organizational Commitment, Job Satisfaction, and Turnover among Psychiatric Technicians, Journal of Applied Psychology, Vol. 59, pp. 603-609.

Rousseau, D. M.(1989). Psychological and Implied Contracts in Organizations, Employee Responsibilities and Right Journal, Vol. 2, pp. 121-139.

Schnake, M., Cochran, D., & Dumler, M.(1995, Summer). Encouraging Organizational Citizenship : The Effects of Job Satisfaction, Perceived Equity and Leadership, Journal of Managerial Issues, Vol. VII, No. 2, pp. 209-221.

Van Dyne, L., Graham, J. W., & Dienesch, R. M.(1994). Organizational Citizenship Behavior : Construct Redefinition, Measurement, and Validation, Academy of Management Journal, Vol. 37, No. 4, pp. 765-802.

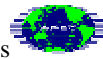
**THE REGULAR AND PART-TIME MANPOWER PLANNING
FOR A FIRM TO OFFER INFORMATION SERVICE**

Chug-Ing Hsu

**Department of Transportation Engineering and Management
National Chiao Tung University (Chinese Taipei)**

Huei-Ju Huang

**Department of Transportation Engineering and Management
National Chiao Tung University (Chinese Taipei)**



THE REGULAR AND PART-TIME MANPOWER PLANNING FOR A FIRM TO OFFER INFORMATION SERVICE

ABSTRACT

The objectives of this paper are to explore the issues regarding applying regular workers and part-time workers on customer information services via a telecommunication network, to formulate relevant costs to analyze their relationships with the level of customer services under the time dependent demand pattern, and to construct a manpower requirement model. Moreover, a heuristics algorithm is developed to solve the problem and an example is performed to illustrate the application of the model. The result shows that the manpower requirement at peak hour and the total cost paid by the firm for customer information service can be cut down by using different combinations of regular workers and part-time telecommuters, though a small amount of service delays will occur.



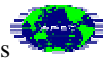
INTRODUCTION

Today, the market condition faced by a firm is very complex and the level of information service requested by customers raise sharply. Many firms focus on their core business by changing organization structure so as to reduce unnecessary costs and put themselves in an advantageous position. Furthermore, people can communicate each other easily via a variety of mediums due to the advanced information technology. Accordingly, there are more service channels via which the firm can provide information services to its customers, such as telephone service, internet service, service by part-time workers or telecommuters, etc.

In practice, it is difficult for a firm to schedule the number of regular employees in different time period so as to satisfy its customers' information demand which are usually with a dynamic pattern. The personnel cost will increase rapidly and there will be many idle employees in the off-peak period if the firm uses the peak-hour demand as a base to determine its manpower requirement. On the other hand, the service quality during the peak period will deteriorate if the firm uses the off-peak demand as a base. Compared to large companies, small and medium firms hold less resources such as labor or capital, so that it is difficult for them to offer a sufficient number of employees to serve their customers. Because the internet technology nowadays has advanced up to support rapid interactions, using telecommuters who work at home to offer part-time services in peak period has provided an answer for the firm to solve this problem. The objectives of this paper are to explore the issues regarding applying regular workers and part-time workers on the customer information service, to formulate the relevant costs, to analyze their relationships with the level of customer information service in a dynamic demand pattern, and to construct a manpower requirement model.

Previous literature mostly focuses on the problem of establishing a work schedule that satisfies the given manpower and service requirements and complies with regulation and budget constraints. However, the scheduling problems considered in the literature were much more general, and none of them dealt with issues such as simultaneously determining the manpower and service demand leveling as concentrated in this paper. Here are some references that are deemed important as they describe methods or algorithms for the construction of efficient schedules in a particular area, such as airline crew scheduling in Etschmaier and Mathaisel (1985) and in Desaulniers et al. (1997), employee service scheduling in Bechtold and Showalter (1987), operator scheduling in Segal (1974), nurse scheduling in Arthur and Ravindran (1981), toll collectors in Byrne and Potts (1973), shift scheduling for banking operations in Davis and Reutzel (1981), and telephone sales manpower planning in Gaballa and Peace (1979). However, there were a few literature dealing with both the determination of manpower requirements and demand leveling, though none of them dealt with the issues regarding employing part-time telecommuters. Nobert and Jacques (1998) construct a freight handling personnel scheduling model at air cargo terminals for achieving cost reductions and determining the number of employees at different period while maintaining customer service levels.

The firms we focus here are those provide masses of information services or



those with a customer information service department. In this paper, the customer demand pattern is time dependent and with various service duration. Different degrees of urgency providing for the customer service are also considered. In this paper, we explore the relationship among the service level the firm offers for customer information inquiries and relevant costs paid for to achieve this service level. We use the difference in time between time expected by customers and time actually offered by firm to represent the time delay of customer information service and to represent the service level. Several types of time differences are analyzed by using different penalty costs to reflect their effects on the dissatisfaction or loss of customers. Moreover, the relevant costs for the firm using various combinations of regular workers and part-time telecommuters to offer customer information service at a certain service level are considered. The costs we analyze include the salaries of regular workers and part-time telecommuters, rent, commuting costs and other personnel costs for regular workers, and information transferring costs and other costs for part-time telecommuters, etc. From the viewpoint of economic efficiency, we formulate penalty costs for various time delays of offering customer service and other relevant costs by analytical approach, and then construct a manpower requirement model. Finally, a heuristic algorithm is developed to solve the problem and an example is performed to illustrate the application of the model.

MODEL FORMULATION

2.1 Basic Characteristics

The type of customer service we concern here is mainly information service. The customer request a service to the firm's service center through telecommunication network (such as telephone, fax, or internet), and the service center responses this request and provides the service via the same way. This is a common service type for many firms to setup their telephone service centers or internet consulting centers. Because the internet is available with lower and lower price today, more and more firms attempt to build their service centers in internet to satisfy more customers' inquiries. In addition, it is unnecessary for the firm's employees to commute between office and home due to no face-to-face service. Furthermore, the firm now may cut down total costs by using part-time telecommuters to offer a part of customer information services while maintaining the same service level.

The characteristics of the customers' information inquiries we consider here are with various time duration and different degrees of urgency. We explore the trade-offs between service levels and other relevant costs for firms using different combinations of regular workers and part-time telecommuters to provide their customers' information services, and then further analyze the manpower requirement at each time period. If the service request from the customer is urgent, the firm must make a response rapidly otherwise the firm may suffer the loss due to delay. On the other hand, if the request from the customer is not urgent, a bit of delay is acceptable.

We assume that the firm pursues the goal of minimizing total costs including the penalty costs induced by the delays of offering services and other relevant costs paid by



the firm to offer customers' information service. The penalty cost is represented as reduced revenue owing to the dissatisfaction or loss of customers who are unsatisfied with the firm's information service response. Customer dissatisfaction comes from the discrepancy between the time customer expect to start or to finish the service and the time actually offered by a firm to start or to finish. Besides, the communication cost for customers waiting online for a service is also considered. Other relevant costs actually paid by firms include salaries for regular workers and part-time telecommuters, rent paid for the floor area of the information center, the commuting cost for regular workers, communication and transportation costs for part-time telecommuters, and the cost for equipment purchasing. The salaries of regular workers involve the health insurance premiums, retirement funds, and dismission funds. The rent paid for the floor area of the information center used by regular workers and part-time telecommuters is affected by the site of the center. The accessibility costs are defined as those paid by the firm's workers to contact with the information center or access to office. These costs are commuting costs for regular workers or transmission costs for telecommuters to transfer information or commuting costs for telecommuters to go back to office for meeting occasionally. The equipment for regular workers is different from that for part-time telecommuters, so the equipment purchasing cost will vary with the number of regular workers and the number of part-time telecommuters.

2.2 Cost Functions

In this section, we will analyze and formulate each of all costs paid by the firm for providing customer information services and explore interactions among them.

1. Penalty cost of service delays

We use the differences in time between the service starting time and the finishing time expected by customers and those actually offered by the firm to represent the level of service and define them as the delay of starting service and the delay of finishing service, respectively. The losses due to the delay of starting service or the delay of finishing service can be evaluated by giving various penalty costs for different types of delays. The concepts of delay are shown at figure 1. The two ends of white bar are the starting and finishing time expected by a customer to accept a service, respectively. And, the gray bar represents the length of service duration. There are three cases possible while the service is processed. If the firm immediately replies the service request of the customer, no delay will occur as shown by case 1 in figure 1. If the firm can not reply the request immediately due to the shortage of available employees to dispatch, the delay of starting service arises as shown by case 2 and case 3 in figure 1. In case 2, there is no delay of finishing service even though there is a delay of starting service. In case 3, there is a delay of finishing service since the starting time actually offered by firm is too late.

Let c_{ijk} be the number of customers who expect to start their services at i -th time interval and to finish at j -th time interval and the duration of processing the request is k time intervals. Assume that if the firm actually starts the service at the time expected

to start by the customer, it is certain that the time at which the firm actually finishes this service will be before the time expected to finish by the customer, i.e., $i + k \leq j$.

Let x_{ijk}^t , $t \geq i$ be the number of customers who can be counted to c_{ijk} and actually start to be served by the firm at t -th time interval. Then the following equality is held.

$$\sum_t x_{ijk}^t = c_{ijk}, \quad \forall ijk \quad (1)$$

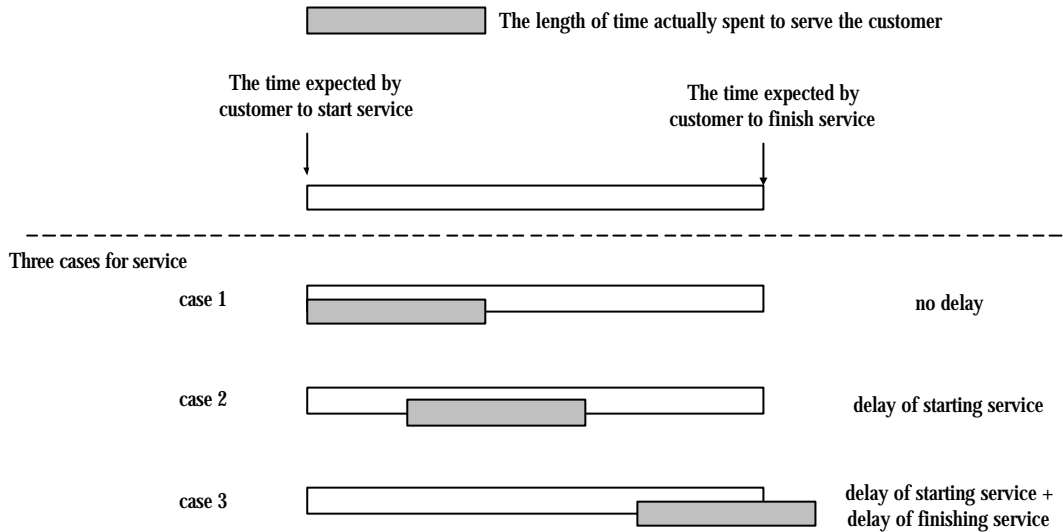


Figure 1. The concepts of delays of starting service and finishing service

There is no delay of starting or finishing service for the customer group x_{ijk}^t , $\forall t = i$; while there will be some delay of starting service for the customer group x_{ijk}^t , $\forall t > i$, and the delay time is $(t - i)$. Moreover, the total delay of starting service for customer group c_{ijk} can be represented as the sum of the product of the number of customers who start to be served at each of different time intervals and their respective delay time, that is

$$\sum_t (t - i) x_{ijk}^t \quad (2)$$

When the starting time at which the service is actually offered by the firm is so late as it affects on the finishing time of the service, the delay of finishing service may occur. In other words, if the actually finishing time $t + k$ for customer group x_{ijk}^t is later than the time expected to finish the service by customers, the delay of finishing the service occurs and the delay time is $(t + k - j)$. On the other hand, if the actually finishing time $t + k$ is ahead of j , then there is no delay.

When there exists a delay of starting service or a delay of finishing service, customers will be unsatisfied with the service provided by the firm due to waiting. Those who receive the service with delay may look at the service unreliable or even suffer a loss for this reason. And then, it is possible that customers may give up the



service or choose another firm's service as the next information request arises. Assume the customer give-up rate is a probability and affected by the amount of the delay of starting service and the delay of finishing service. Let $p_1(h)$ and $p_2(h)$ as the give-up rates for the delay of starting service and the delay of finishing service as the delay time is h . And assume these two give-up rates are independent of each other. Then, the give-up rate for customer group x_{ijk}^t is

$$P_{ijk}^t = p_1(t-i) + p_2(t+k-j) - p_1(t-i)p_2(t+k-j) \quad (3)$$

and if $t+k < j$, $p_2 = 0$.

Let the average potential revenue is c dollars per service, then the penalty cost due to delay for customer group x_{ijk}^t will be

$$P_{ijk}^t \cdot x_{ijk}^t \cdot c \quad (4)$$

Though some of customers may still choose the services with delay, the firm's cash flow may be slightly postponed. However, since it is usually negligible and therefore could be neglected. Then, the total penalty cost for service delay is

$$c \sum_{ijk} \sum_t P_{ijk}^t \cdot x_{ijk}^t \quad (5)$$

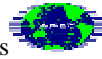
2. Communication Cost for Customers Waiting Online for Service

As the firm serves its customers through internet, the cost for information transferring must be paid and it equals to the product of the online time and the telecommunication fee per unit time. The customer online time for service includes the actually service duration k and the time waiting online which equals the delay time of starting service. Let u be the telecommunication fee per unit time, which is affected by the site of the firm, the condition of national information infrastructure and the distances from the site of the firm to those of customers. Then, the total communication cost for customers waiting online for service can be obtained as

$$\left[\sum_{jkt} kx_{ijk}^t + \sum_{ijk} \sum_t (t-i)x_{ijk}^t \right] u \quad (6)$$

3. Salaries

The salaries offered by the firm for their regular workers and part-time telecommuters are usually different. The salaries for regular workers are mostly constant with fixed work hours, such as pay per month or per week, and there are extra benefits offered by the firm due to regulations, such as health insurance premiums, retirement funds, and dismissal funds, etc. On the other hand, the salaries for part-time workers are related to their working hours and a little extra allowance is also included. Assume each service requested by a customer is served by one worker and only one. Then, it ought to be satisfied that the total number of workers at each time



interval is bigger or at least equals to the number of customers in service at the same time interval. The number of customers in service at time interval t , is equal to the sum of the number of customers who enter the service system at time interval t and the number of all customers who enter the service system before t but their requests have not yet been finished by t . Therefore, the total number of customers in service at interval t is

$$x^t + \sum_{n=1}^{t-1} \sum_{k>n} x_k^{t-n}, \quad \forall t \quad (7)$$

where

$$x^t = \sum_{ijk} x_{ijk}^t, \quad \forall t$$

$$x_k^t = \sum_{ij} x_{ijk}^t, \quad \forall tk$$

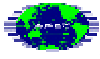
Denote P_{s1} and P_{s2} as the periods of the time covered respectively by a regular-working shift $s1$ and by a part-time working shift $s2$. Let e_r^{s1} be the number of regular workers working at the regular-working shift $s1$, and e_p^{s2} be the number of part-time workers working at the part-time-working shift $s2$. Then, the total number of regular workers and part-time telecommuters at interval t should be greater than or equal to the total number of customer in service at interval t , for all time intervals, as shown by constrains below:

$$\sum_{s1:t \in P_{s1}} e_r^{s1} + \sum_{s2:t \in P_{s2}} e_p^{s2} \geq x^t + \sum_{n=1}^{t-1} \sum_{k>n} x_k^{t-n}, \quad \forall t \quad (8)$$

In general, the salaries paid by the firm for regular workers are related to the number of regular workers employed by firm. Thus, it is important for the firm to know the required number of regular workers to serve and fulfill the customers' information requests at each time interval. The total person-shifts for the total planning time T can be determined by the definition of e_r^{s1} as $\sum e_r^{s1}$. Let S be the average number of shifts served by a regular worker, then we can obtain the number of regular workers needed by firm is

$$\frac{\sum e_r^{s1}}{S} \quad (9)$$

However, if the number of customers' information requests in different time interval varies and appears in a peaking pattern, then the required number of workers needed by firm to serve customers in different shifts will also vary and exhibit the same peaking phenomenon. The maximal number of regular workers the firm can use at any time intervals is $\frac{\sum e_r^{s1}}{S}$ as shown in equation (9). If the required number of regular workers needed by firm at each of all time intervals is smaller than the maximal number, then the firm can hire merely $\frac{\sum e_r^{s1}}{S}$ regular workers to serve their customers. If the number of regular workers needed at some time intervals exceeds this maximal number,



the firm may hire the number of workers based on the maximal required number of workers among for all shifts. Briefly, the total required number of regular workers needed by firm for customer information service is

$$E_r = \max \left[\max_{s1} (e_r^{s1}), \frac{\sum e_r^{s1}}{S} \right] \quad (10)$$

Let the average wage per regular worker be w , and the health insurance premiums, retirement funds and dismissal funds which are extra benefits offered by the firm is a fraction of w . Denote this fraction by r , then the total salaries for all regular workers are

$$E_r(1+r)w \quad (11)$$

The salaries for part-time telecommuters are usually related to their actual working hours. In general, the firm must promise in the contract that part-time workers at least have a certain lower bound of working hours with a wage rate larger than the minimum wage.. Part-time telecommuters who bear less workload still get a certain amount of the minimal pay. On the other hand, the lower bound of working hours is an obligation of part-time telecommuters that ensures the firm can obtain reasonable labor hours. Assume both the lower bound of working hours and the minimal wage are satisfied, i.e., the working hours per part-time telecommuter are all greater than the lower bound of working hours and the wages are all greater than the minimal wage. Then, we can determine the total salaries for all part-time telecommuters by multiplying the total working hours served by telecommuters by the average wage rate. Let the average wage rate for $s2$ is w_p^{s2} , then the total salaries for part-time telecommuters are

$$\sum_{s2} e_p^{s2} w_p^{s2} \quad (12)$$

4. Rent for the information service center

The regular workers we discuss here are those who commute to office to work, and the part-time telecommuters are those who work at home. In general, the firm will not subsidy the rent of floor area used at home by part-time telecommuters. Therefore, the rent for the information service center will be mainly affected by the number of regular workers. Denote the average size of floor area per regular worker by a_1 , and the rent for the service center sited at j by p_j . Assume that the shifts of regular workers do not overlap each other, and the same office equipment and floor area allows to be used alternately by different regular workers working in different shifts. So, we can set the maximal number of regular workers among all shifts as the planning capacity, and the rent for the service center used by regular workers will be

$$a_1 p_j \max(e_r^{s1}) \quad (13)$$

Though the part-time workers work at home, but they need to go back to office for training, re-training, meeting, or other activities occasionally. The frequency for these

activities is low, but the firm still needs to prepare some space for them. Assume each part-time telecommuter must return to office every n shifts, and all part-time telecommuters return to office by b batches. Then, the number of part-time telecommuters return to office per batch is

$$\frac{\sum e_p^{s2}}{nb} \tag{14}$$

Let the average floor area used by each returned telecommuter is a_2 , then the rent for the service center used by part-time telecommuters is

$$a_2 p_j \frac{\sum e_p^{s2}}{nb} \tag{15}$$

5. Accessibility cost

We define the accessibility cost as the time cost and monetary cost paid by workers for commuting or telecommuting to office. For regular workers, the costs are commuting costs between office and home. For part-time workers, the costs are telecommunication expense used for communicating with the information center and the transportation cost for returning to office periodically. The accessibility cost includes both the monetary cost and time cost for regular workers and part-time telecommuters. The time cost reflects the opportunity cost of the time spent on commuting or telecommuting and is measured by the value of time which is assumed to be equal to the wage per hour. The wage rate is different between regular workers and part-time telecommuters due to the different ways used to determine their salaries. For each regular worker, the average wage rate can be represented as the total salary at planning period divided by the total working hours, that is

$$\frac{w}{\sum_{s1 \in S} t(P_{s1})} \tag{16}$$

where $t(P_{s1})$: the length of time covered by one regular shift $s1$;

S : the set of all shifts offered per regular worker.

The average wage rate for part-time telecommuters can be represented as the average salary for each shift divided by the average length of time in one part-time shift, that is

$$\frac{\sum_{s2} w_p^{s2} / s2}{\sum_{s2} t(P_{s2}) / s2} = \sum_{s2} \frac{w_p^{s2}}{t(P_{s2})} \tag{17}$$

where $t(P_{s2})$: the length of time covered by one part-time shift $s2$.



Assume the length of time in one regular shift is long enough so that it is impossible for a regular worker to work on two continuous shift, i.e. the regular worker ought to commute one round trip per shift. Let the average commuting distance of a round trip per regular worker is d_1 , and the travel speed is v . As each regular worker works on S shifts, the total time cost for all regular workers used for commuting to office will be

$$E_r S \left(\frac{d_1}{v} \frac{w}{\sum_{s1 \in S} t(p_{s1})} \right) \quad (18)$$

where d_1/v is the time spent for one round trip. Let the unit-distance transportation fee is f . Then, the monetary cost paid by all regular workers commuting to office will be

$$E_r S (f d_1) \quad (19)$$

where $f d_1$ is the monetary cost spent for one round trip. Then, the total accessibility cost for regular workers is the sum of the time cost and the monetary cost used for commuting to office, that is

$$E_r S \left(\frac{d_1}{v} \frac{w}{\sum_{s1 \in S} t(p_{s1})} + f d_1 \right) \quad (20)$$

Because the part-time telecommuters do the job at home via telecommunication, the access time equals to the total time spent for communicating with office on line, i.e., it equals to the length of time covered by the total number of part-time shifts, so the total time for all part-time telecommuters access to office via telecommunication will be

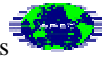
$$\sum_{s2} e_p^{s2} t(P_{s2}) \quad (21)$$

Denote u as the unit-time fee for telecommunication, then the total monetary cost for part-time telecommuters used for information transferring is

$$u \sum_{s2} e_p^{s2} t(P_{s2}) \quad (22)$$

It must be noted, the accessibility cost for part-time telecommuter via telecommunication only includes monetary cost but not includes time cost. The part of time cost is paid as the salary for part-time telecommuters, therefore it cannot be computed for avoiding double counting.

As described above, part-time telecommuters must return to office for specified activities periodically, so the transportation cost for them should be counted. Let the average round-trip distance for a part-time telecommuter traveling to office once is d_2 ,



and the value of time is measured by the wage rate. Because each part-time telecommuter must return to office every n shifts, there are $\frac{s^2}{n}$ round trips made by all part-time workers for returning to office. Similar to equation (20), the total transportation cost for part-time telecommuters can be represented as

$$\frac{\sum e_p^{s^2}}{n} \cdot \left(\frac{d_2}{v} \cdot \sum \frac{w_p^{s^2}}{t(P_{s^2})} + d_2 f \right) \quad (23)$$

6. The cost for equipment purchasing

Some communicating equipment is needed for the firm to serve their customers, such as central process system, servers or personal computers, etc. The equipment cost can be divided into two parts: one is the fixed cost, the other is variable cost which is related to the number of workers. Because the regular workers are formal long-term employees in the organization, the firm usually provides them equipment. On the other hand, the firm generally does not provide part-time telecommuters the equipment, but instead give a small amount of subsidy relating to their actual working hours. Let the fixed cost for equipment is A , and the variable cost of equipment purchased for each regular worker is m^r . Then, the total equipment cost excluding the part for part-time telecommuters will be

$$A + m^r E_r \quad (24)$$

where E_r is the total required number of regular workers needed by firm for customer service as defined by equation (10).

To compare the equipment cost with other costs at the same time base, let the life of service in years for all equipment is b and the interest rate is g . Then, the capital-recovery-factor is $a = \frac{g(1+g)^b}{(1+g)^b - 1}$. Consequently, the equivalent equipment cost spent over the planning period T in days is

$$a[A + m^r E_r] \frac{T}{365} \quad (25)$$

As discussed above, the part-time telecommuter is not formal employee of the firm, and generally the firm will not provide them the equipment, but give a small amount of subsidy relating to their actual working hours. Let m^p denote the subsidy per part-time shift, then the total amount of subsidy for part-time telecommuters' equipment is

$$m^p \sum e_p^{s^2} \quad (26)$$

2.3 Manpower Requirement Model

We can formulate here the manpower requirement model by combining each of all cost functions and relevant constraints discussed in section 2.1. The mathematical programming problem for the model is formulated as



Min.

$$\begin{aligned}
& c \sum_{ijk} \sum_t P_{ijk}^t \cdot x_{ijk}^t + \sum_{ijk} \sum_t [kx_{ijk}^t + (t-i)x_{ijk}^t] \mu \\
& + E_r(1+r)w + \sum_{s2} e_p^{s2} w_p^{s2} \\
& + \mathbf{a}_1 p_j \max(e_r^{s1}) + \mathbf{a}_2 p_j \frac{\sum_{s2} e_p^{s2}}{nb} \tag{27}
\end{aligned}$$

$$\begin{aligned}
& + E_r S \left(\frac{d_1}{v} \frac{w}{\sum_{s1 \in S} t(p_{s1})} + f d_1 \right) + u \sum_{s2} e_p^{s2} t(p_{s2}) + \frac{\sum_{s2} e_p^{s2}}{n} \cdot \left(\frac{d_2}{v} \cdot \sum_{s2} \frac{w_p^{s2}}{t(p_{s2})} + d_2 f \right) \\
& + a[A + m^r E_r] \frac{T}{365} + m^p \sum_{s2} e_p^{s2}
\end{aligned}$$

$$\text{S.t. } \sum_t x_{ijk}^t = c_{ijk}, \quad \forall ijk \tag{28}$$

$$\sum_{s1: t \in P_{s1}} e_r^{s1} + \sum_{s2: t \in P_{s2}} e_p^{s2} \geq x^t + \sum_{n=1}^{t-1} \sum_{k>n} x_k^{t-n}, \quad \forall t \tag{29}$$

$$x^t = \sum_{ijk} x_{ijk}^t, \quad \forall t \tag{30}$$

$$x_k^t = \sum_{ij} x_{ijk}^t, \quad \forall tk \tag{31}$$

$$P_{ijk}^t = p_1(t-i) + p_2(t+k-j) - p_1(t-i)p_2(t+k-j), \quad \forall ijk \tag{32}$$

$$E_r = \max \left[\max_{s1} (e_r^{s1}), \frac{\sum_{s1} e_r^{s1}}{S} \right] \tag{33}$$

$x_{ijk}^t, e_r^{s1}, e_p^{s2}, E_r$ are integers

The objective function in equation (17) is to minimize the total costs including the penalty costs for service delay, the communication costs for customers waiting online for service, rent for the information service center, salaries, and accessibility costs for regular workers and for part-time telecommuters, and the costs for equipment purchasing. Constraint (28) specifies that customers in each of all customer groups will be served while the time intervals at which customers are actually served may be different. Constraints (29), (30), and (31) ensure that the number of workers working at each time interval is at least equal to the number of customers in service at the same interval. Constraint (32) defines the probabilities of the give-up rates for the delays of starting services and finishing services which are independent of each other. Constraint (33) states the number of regular workers hired by the firm is large enough at each of all shifts. The objective function (27) can be rewritten as

Min.

$$+ E_r \left\{ (1+r)w + S \left(\frac{d_1}{v} \frac{w}{\sum_{s \in S} t(p_{s1})} + fd_1 \right) + \frac{\text{HRM of SMEs in Service Industries}}{am^r T} \right\} \quad (34)$$

and further, equation (34) can be simplified as equation (35)

$$\text{Min. } \left\{ \sum_{s2} e_p^{s2} \left\{ w_p^{s2} + \frac{a_2 p_j}{nb} + ut(P_{s2}) + \frac{1}{n} \cdot \left(\frac{d_2}{v} \cdot \sum_{s2} \frac{w_p^{s2}}{t(P_{s2})} + d_2 f \right) + m^p \right\} + \sum_{ijk} c_{1ijk}^t x_{ijk}^t + c_2 E_r + \sum_{s2} c_{3p}^{s2} e_p^{s2} + \frac{a_1 p_j \max(e_r^{s1})}{365} \right\} \quad (35)$$

where $a_1 p_j \max(e_r^{s1}) + \frac{aAT}{365}$

$$c_{1ijk}^t = cP_{ijk}^t + [k + (t-i)]u$$

$$c_2 = (1+r)w + S \left(\frac{d_1}{v} \frac{w}{\sum_{s \in S} t(p_{s1})} + fd_1 \right) \frac{am^r T}{365}$$

$$c_{3p}^{s2} = w_p^{s2} + \frac{a_2 p_j}{nb} + ut(P_{s2}) + \frac{1}{n} \cdot \left(\frac{d_2}{v} \cdot \sum_{s2} \frac{w_p^{s2}}{t(P_{s2})} + d_2 f \right) + m^p$$

The last term of equation (35) is a constant, so it can be omitted. Consequently, the manpower model will be

$$\text{Min. } \sum_{ijk} \sum_t c_{1ijk}^t x_{ijk}^t + c_2 E_r + \sum_{s2} c_{3p}^{s2} e_p^{s2} + a_1 p_j \max(e_r^{s1})$$

$$\text{S.t. } \sum_t x_{ijk}^t = c_{ijk}, \quad \forall ijk$$

$$\sum_{s1: t \in P_{s1}} e_r^{s1} + \sum_{s2: t \in P_{s2}} e_p^{s2} \geq x^t + \sum_{n=1}^{t-1} \sum_{k>n} x_k^{t-n}$$

$$x^t = \sum_{ijk} x_{ijk}^t$$

$$x_k^t = \sum_{ij} x_{ijk}^t$$

$$P_{ijk}^t = p_1(t-i) + p_2(t+k-j) - p_1(t-i)p_2(t+k-j)$$

$$E_r = \max \left[\max_{s1} (e_r^{s1}), \frac{\sum e_r^{s1}}{S} \right]$$

$$x_{ijk}^t, e_r^{s1}, e_p^{s2}, E_r \text{ are integers}$$

ALGORITHM

The manpower requirement model we formulate here is a NP-hard problem and the integral condition in the model makes it a difficult problem to solve exactly in polynomial time. Therefore, we develop a heuristic algorithm for this problem via shift-by-shift basis. The Algorithm is described as follows:

Step 1. Count the number of customers being served at each interval under the condition



of no delay.

Assume all customers of the firm can be served at the time they expect, i.e., the equation below is true.

$$x_{ijk}^t = c_{ijk}, \text{ for all } t = i$$

$$x_{ijk}^t = 0, \text{ for all } t \neq i$$

Because the duration of processing some service requests is longer than one interval, the number of customers in service at each interval is the sum of the numbers of those who enter in system at this interval and those who enter before but not complete their service at t . That is

$$x^t + \sum_{n=1}^{t-1} \sum_{k>n} x_k^{t-n}, \quad \forall t$$

Step 2. Count the number of regular workers e_r^{s1} for each of all shifts in case that there is no delay and no part-time telecommuter. That is

$$e_r^{s1} = \max_{t \in P_{s1}} \left[x^t + \sum_{n=1}^{t-1} \sum_{k>n} x_k^{t-n} \right], \quad \forall s1$$

Determine the minimal number of regular workers E_r which should be hired by firm by:

$$E_r = \max \left[\max_{s1} (e_r^{s1}), \frac{\sum e_r^{s1}}{S} \right]$$

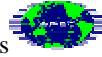
Solve an initial solution via Step 1 and Step 2 and compute the total cost under the condition of no delay and no part-time telecommuter.

Step 3. Construct a manpower requirement submodel based on the length of time of one regular shift.

Step 3.1. Construct a submodel of $s1$ -th regular shift, and set the number of regular workers at the $s1$ -th shift, the number of part-time telecommuters at the corresponding simultaneous shifts, and the number of customers actually served at the $s1$ -th shifts as decision variables, and set other variables as given.

Then, relax the integral condition in this model and solve the corresponding LP problem. The form of submodel for the $s1$ -th regular shift is

$$\text{Min. } \sum_{ijk} \sum_{t \in P_{s1}} c_{ijk}^t x_{ijk}^t + c_2 E_r + \sum_{s2 \in P_{s1}} c_{3p}^{s2} e_p^{s2} + \mathbf{a}_1 p_j \max(e_r^{s1})$$



$$\begin{aligned}
 \text{S.t. } & \sum_{t \in P_{s1}} x_{ijk}^t = c_{ijk}, \quad \forall ijk \\
 & e_r^{s1} + \sum_{s2t \in P_{s2}} e_p^{s2} \geq x^t + \sum_{n=1}^{t-1} \sum_{k>n} x_k^{t-n}, \quad \forall t \in P_{s1} \\
 & E_r = \max \left[\max_{s1} (e_r^{s1}), \frac{\sum e_r^{s1}}{S} \right] \\
 & x_{ijk}^t, e_r^{s1}, e_p^{s2}, E_r \text{ are non-negatives}
 \end{aligned}$$

Step 3.2. Update the initial solution obtained in Step 2 by the result of the submodel of $s1$ -th regular shift. Then, return to Step 3.1 to construct and solve the submodel of the $(s1+1)$ -th regular shift.

Step 3.3 Repeat Steps 3.1 and 3.2, until submodels for all regular shifts in the planning period T are solved.

Step 4. Round up the number of regular workers and the number of part-time telecommuters at each of all shifts and round up or down of the numbers of customers in service at each of all time intervals to obtain the solution. Compute the total cost for this solution at the end.

EXPERIMENTAL RESULTS

We use an example to illustrate the application of the manpower requirement model formulated in this paper. The study planing period is a week. The length of time per regular shift is 8 consecutive hours and that per part-time shift is 4 consecutive hours. Therefore, there are 3 regular shifts and 6 part-time shifts in a day. The beginning times of regular shifts are 0H, 8H, and 16H, and the average salary per regular worker is 10000 NT dollars per week. The beginning time of the part-time shifts are 0H, 4H, 8H, 12H, 16H, and 20H. The average salary for the part-time telecommuter with shift beginning at 0H or 4H is 1000 NT dollars per shift, that for the part-time telecommuter with the shift beginning at 8H or 12H is 600 NT dollars, and that for part-time telecommuter with the shift beginning at 16H or 20H is 800 NT dollars. In this example, we set 10 minutes as a time interval, so there are 1008 time intervals during the planning period. All customers are categorized according to the degrees of urgency and the duration of processing their information requests. Regarding the duration of processing the request, all customers are divided into two groups. One is those whose requests can be finished at the duration of single time interval ($k=1$), and the other is those whose requests are finished at the duration of two time intervals ($k=2$). There are also two customer groups with regarding to the degrees of urgency. One is those whose requests are urgent and the firm must provide their requests immediately, and the other is those whose requests are not urgent and a bit of delay is acceptable. The give-up rates for the customer group whose information requests are urgent are



$$p_1(t-i) = \begin{cases} 0 & ,t-i=0 \\ 0.04 & ,t-i=1 \\ 0.16 & ,t-i=2 \\ 0.36 & ,t-i=3 \\ 0.64 & ,t-i=4 \end{cases}, \quad p_2(t+k-i) = \begin{cases} 0 & ,t+k-i=0 \\ 0.04 & ,t+k-i=1 \\ 0.16 & ,t+k-i=2 \\ 0.36 & ,t+k-i=3 \\ 0.64 & ,t+k-i=4 \end{cases}$$

And the give-up rates for the customer group whose information requests are not urgent are

$$p_1(t-i) = \begin{cases} 0 & ,t-i=0 \\ 0 & ,t-i=1 \\ 0.04 & ,t-i=2 \\ 0.16 & ,t-i=3 \\ 0.36 & ,t-i=4 \end{cases}, \quad p_2(t+k-i) = \begin{cases} 0 & ,t+k-i=0 \\ 0 & ,t+k-i=1 \\ 0.04 & ,t+k-i=2 \\ 0.16 & ,t+k-i=3 \\ 0.36 & ,t+k-i=4 \end{cases}$$

Assume the numbers of customers who is inquiring information in each time interval are distributed in a poisson distributions, then we can simulation the demand data by assuming the appropriate values for parameters. For customers whose requests can be finished by a single time interval, we assume the parameters of arrival rates for those whose requests are urgent and not urgent as 5 and 6 person/interval, respectively. For customers whose requests can be finished by two time intervals, we set the parameters of arrival rates for those whose requests are urgent and not urgent as 5 and 6 person/interval, respectively. Other parameters for the model are assumed by inferring and referring from the data in the reality and shown in Table 1.

Figure 2 shows the number of customers in service at each time interval with no delay and no part-time telecommuter hired. The total person-shifts of required regular shifts is shown to be 969 person-shifts, and the number of regular workers must be hired by firm is 162 workers when the average number of shifts served by a regular worker is 6 shifts during the study period. And, the corresponding total cost paid by the firm to provide the customer information services during the study period is 2,270,290 NT dollars.

Figure 3 shows the number of customers in service at each time interval by applying the manpower requirement model we develop in the paper. The differences

Table 1. The values of parameters used for the model

Variable	Description	Value
c	The average potential revenue per service (NT dollar)	100
u	The telecommunication fee per unit time (NT dollar)	0.16
r	The fraction of wage for extra benefits offered by firm (%)	10%
a_1	The average size of floor area per regular worker (m^2 /worker)	15
p_j	The rent for the service center sited at j (NT dollar/ m^2)	11.635
a_2	The average size of floor area used by each returned telecommuter (m^2 /worker)	5
n	The average number of shifts during which each part-time telecommuter returning to office once	10
b	The number of batches all part-time telecommuter return to office	2
S	The average number of shifts a regular worker works on	6
d_1	The average round-trip commuting distance per regular worker (km)	20
d_2	The average round-trip distance for a part-time telecommuter traveling to office once (km)	25
v	The average travel speed (km/hr)	38
f	The unit-distance transportation fee (NT dollar/km)	1.56
a	The capital-recovery-factor with the life of service in $b=5$ years and the interest rate $g=0.06$.	0.2374
A	The fixed cost for equipment (NT dollar)	500,000
m^r	The variable cost of equipment purchased for each regular worker (NT dollar)	20,000
m^p	The subsidy per part-time shift (NT dollar/shift)	50

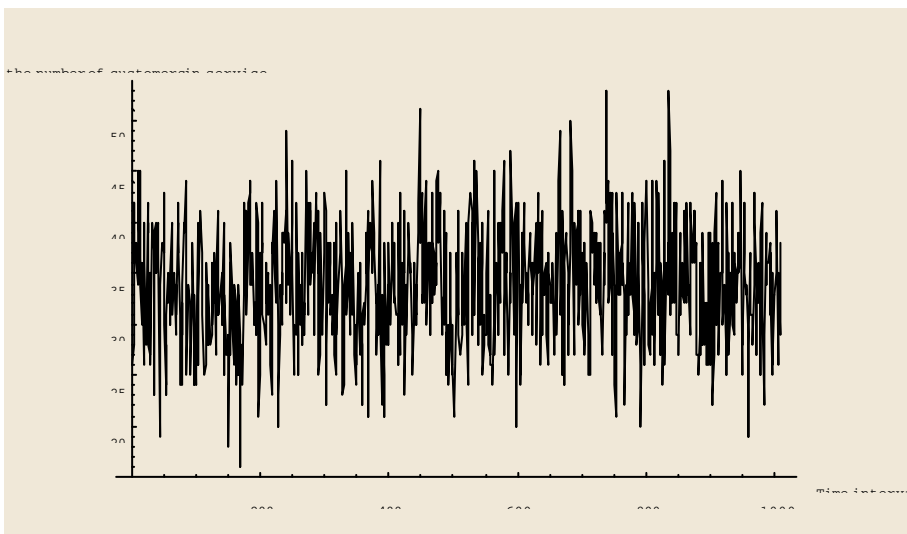


Figure 2. The number of customers in service at each time interval with no delay and no part-time telecommuters hired.

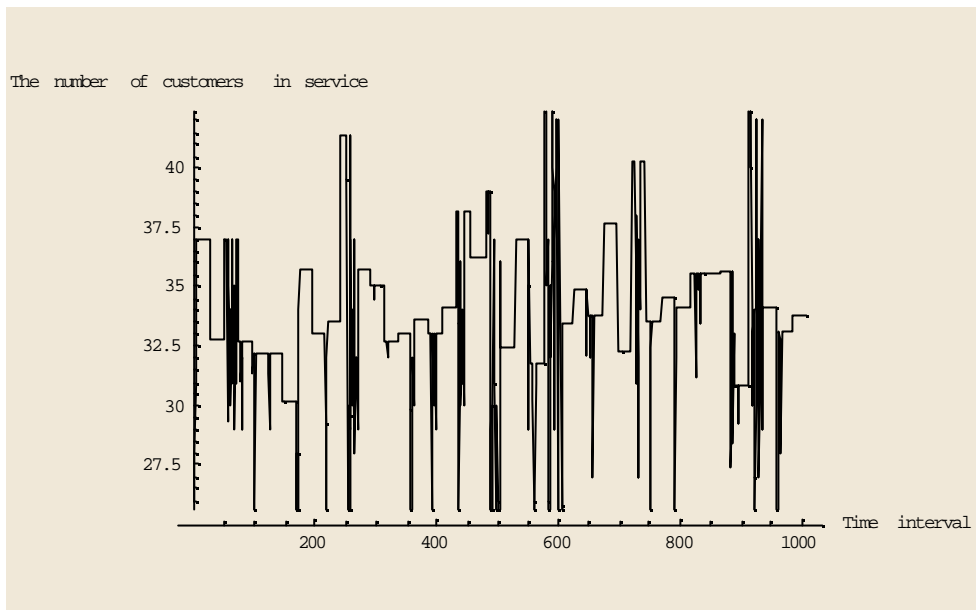


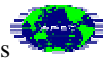
Figure 3. The number of customers in service at each time interval with allowing delays of services and hiring part-time telecommuters.

between the number of customers at peak interval and those in off-peak interval are shown to be markedly reduced as compared with those shown in Figure 2. The total person-shifts of regular shifts obtained by our model is 708 person-shifts and the number of regular workers must be hired by firm is 118 workers as the average number of shifts served by a regular worker is still 6 shifts during the study period. The total person-shifts of part-time shifts is 100 person-shifts and equivalent to about 50 person-shifts of regular shifts. The manpower requirement by allowing delays and hiring part-time telecommuters is shown to be cut down substantially. Consequently, the total cost paid by the firm for providing customer information services via employing both regular workers and part-time telecommuters as determined by the model is 2,270,290 NT dollars. The saving is shown up to 661,400 NT dollars.

Regarding the delays of providing service, there are 6,674 customers served with delay, and the average delay is 1.024 intervals per delayed customer, while the average delay is only 0.311 intervals for all 21,976 customers. For those who are served with delay, 28.5% of them are with urgent requests, and 71.5% are with non-urgent requests. The result also shows that the manpower requirement at peak hour and the total cost paid by the firm can be cut down effectively by allowing delays of services and using different combinations of regular workers and part-time telecommuters, though a small amount of delays will occur to about one-third of total customers.

CONCLUSION

This paper develops a model on the manpower requirement of customers' information services which are provided by firm via the telecommunication network. The demand pattern for information requests with various duration and different degrees of urgency is considered. The paper explores the relationships between the level of service the firm offering and the costs paid by firm to achieve this service level and then



formulate relevant cost functions and construct a manpower requirement model for the firm providing customers information services by employing different combinations of regular workers and part-time telecommuters. Furthermore, a heuristic algorithm is developed to solve the problem and an example is implemented to illustrate the applications of the model. The results show that using part-time telecommuters to offer a part of customer services will reduce both the problem of the worker shortage at peak hour and the problem of workers idle at off peak. Moreover, allowing a small amount of service delays will decrease the difference between the number of customers who requests a service at peak hour and those at off peak. These strategies provide an answer for the firms that are burdened with heavy expense on customer information services.

We suggest that several situations might be tested in the future via this model, such as the situation where the number of customers' requests is at each interval with a large variation, or the situations for the different sites of the information center. The effects of the changes in the values of the key variables in the model such as the level of service and relevant costs also can be examined by performing the sensitive analysis. Finally, the length of time interval for describing customers' arrivals and service duration also should be adjusted based on the characteristics of various services on different types of industries.

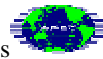


REFERENCES

- Arthur, J. L. and Ravindran, A.(1981), "A Multiple Objective Nurse Scheduling Model," *AIIE Trans.*, Vol. 13, pp. 55-60.
- Bechtold, S. E. and Showalter, M. J.(1987), "A Methodology for Labor Scheduling in a Service Operating System," *Decision Science*, Vol. 18, pp. 89-107.
- Byrne, J. T. and Potts, R. B.(1973), "Scheduling of Toll collectors," *Trans. Sci.*, Vol. 7, pp. 224-245.
- Desaulniers, G. Desrosiers, J., Dumas, Y., Marc, S., Rioux, B., Solomon, M. M. and Soumis, F.(1997), "Crew Pairing at Air France," *Eur. J. Oper. Res.*, Vol. 97, pp. 245-259.
- Etschimaier, M. M. and Mathaisei, D. F. X. (1985), "Airline Scheduling: An Overview," *Transportation Science*, Vol. 19, pp. 127-138.
- Gaballa, A. and Peace, W.(1979), "Telephone Sales Manpower Planning at Quanta," *Interfaces*, Vol. 9, pp. 1-9.
- Novbert, Y. and Jacques, R.(1998), "Freight Handling Personnel Scheduling at Air Cargo Terminals," *Transportation Science*, Vol. 32, No. 2, pp. 295-301.
- Segal, M.(1974), "The Operator Scheduling Problem: A network Flow Approach," *Operation Research*, Vol. 22, pp. 808-823.

**THE CHALLENGES AND THE OPPORTUNITIES OF
E-COMMERCE AND INTERNATIONAL SMEs: IMPLICATIONS
FOR HRM IN APEC**

**Chris Hall
Macquarie Graduate School of Management
Macquarie University (Australia)**



THE CHALLENGES AND THE OPPORTUNITIES OF E-COMMERCE AND INTERNATIONAL SMEs; IMPLICATIONS FOR HRM IN APEC

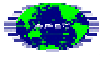
ABSTRACT

Not all SMEs are the same when it comes to contributing to growth. OECD research suggests that over 60% to 70% of economic growth and growth of employment seems to come from about 10% of SMEs; the “entrepreneurial engine”. These SMEs are characterised by fast growth. Growth rates of 50% pa or more are not uncommon amongst such firms, and such rapid growth poses special HRM challenges. The emergence of the Internet economy (or E-commerce) is now opening up significant growth opportunities for some SMEs. To take advantage of these opportunities, SME managers face another set of challenges - they need to be “born global” and to be able to grow globally, they need to understand the new E-economy and to be able to access the technology of the internet, and they need to be able to access the finance necessary to grow quickly. The biggest HRM challenge is at managerial level.

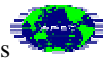
APEC is not homogenous; - of the 40 million or so SMEs in APEC, those best positioned to take advantage of the window of opportunity offered by E-commerce tend to be located in the more developed economies. The western, or Asian, half of APEC is still struggling with the financial market problems and recession, while USA and Australia are growing strongly. The USA in particular seems to have established something of a virtuous circle of growth, much of it based on the “entrepreneurial engine”, while most the Asian economies are struggling to swim away from a whirlpool of debt and recession. It is important to the longer term success of APEC, and to continued political support of APEC objectives, that Asia restart its entrepreneurial engine, and is not left behind in taking advantage of the window of opportunity offered by E-commerce. The potential for internationalised SMEs to add to the APEC economy should not be underestimated. Estimates by the author suggest that greater structural integration of APEC economies (offered by E-commerce and reduction of tariff and non tariff barriers) will allow SMEs to increase their contribution to the APEC economy *relative* to larger firms, and bring it more in line with that typically found in integrated economies. Available evidence suggests that there is the potential for SMEs to add about \$1 trillion in trade and about \$150 billion in FDI per annum to the APEC economy if structural changes allow a simpler, more business friendly, more integrated APEC economy to emerge.

What can APEC do to help SMEs, especially those in Asia, take advantage of the opportunities offered by E-commerce? This paper seeks to address this question by:

1. briefly revisiting work on the entrepreneurial engine;
2. outlining estimates of the potential economic benefits offered by SMEs via greater economic integration and E-commerce in APEC;
3. reviewing what APEC is doing with respect to E-commerce and SMEs;



4. outlining the HRM challenges associated with fast growth internationalised, E-commerce SMEs;
5. examining some suggested options for initiatives to meet these challenges and realise the potential gains.



1. THE ENTREPRENEURIAL ENGINE IN APEC

At a micro level, much of the debate on the contribution of SMEs to growth has focussed on large versus small. This misses the point. Not all SMEs are equal when it comes to contributing to growth. At a macro level it has been known for a long time that most economic growth is attributable to TFP (total factor productivity) improvement, not increased inputs.

Box 1 Schematic summary of the contribution of SMEs to development

Source of contribution	overall contribution	SME and SME FDI contribution
Conventional Engine		
<i>Supply side – production</i>		
Increased factor input		
capital investment	about 25%	SMEs contribute about 40% - 60% of this. SME FDI contribution is usually small but probably can be increased by several orders of magnitude.
labour	about 10%	SMEs have no major impact, but may increase effective use of labour force
intangible investment	about 40%	SMEs employ around 40% to 60% of the workforce, so they have a major potential impact on training. SME FDI is a major source of technical training and productivity improvement.
Productivity	about 25%	SMEs probably contribute about half of this. SME FDI is an important source of technology transfer and catch up.
<i>Supply side - savings</i>	necessary for investment	SMEs employ over 50% of the workforce and are an important source of funds. SME FDI is a small but useful source of investment funds.
<i>Demand side</i>		
Domestic		SME wage payments make up over half of GDP, so SME growth is important in domestic demand expansion.
Export		SMEs contribute about 35% or so of exports in the Asian region, so they make a major contribution to this growth engine. SME FDI is usually export oriented, so it increases the potential for exports.
Entrepreneurial Engine		
Fast growth firms		Most SME contribution to growth is focussed in a relatively small proportion of fast growing firms which start up and expand.
Adaptability and technology		SMEs receiving FDI generally have higher growth rates... ...a higher propensity to apply technology and training
Flexible exports		...and a greater willingness to increase exports and to internationalise

Source UNCTAD 1998



Although there are few attempts to decompose this TFP improvement by size of firm, SMEs are generally assumed to contribute little because their average productivity is only one third to one quarter of large firm productivity. Again, this misses the point. Box 1 summarises the contributions to growth from a conventional engine point of view, where growth depends on demand pull and supply push. As illustrated in box 1, SMEs have the potential to play an important role in growth. SME FDI (foreign direct investment) is important because E commerce makes it easier for small firms to form cross border alliances and share technology.

Not all SMEs are equal when it comes to contributing to growth. OECD research suggests that over 60% to 70% of economic growth and growth of employment seems to come from about 10% of SMEs; the “entrepreneurial engine”. These SMEs are characterised by fast growth. Growth rates of 50% pa or more are not uncommon amongst such firms, and such rapid growth poses special HRM challenges.

Growth seems to be best explained by an interplay of three parts of the economy.

1. Small firms and start ups.

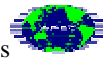
There are many SMEs, - typically firms with less than 100 employees make up over 95% of all firms, and most of these have less than 5 employees. Most of these firms do not grow much, - they are best envisaged as small stores and “lifestyle “ businesses - and although they often grow quickly (eg from one to two or four employees) this is not sustained. There is considerable “churning” of the population, so many only survive for 5 to 8 years or so. This means that the net contribution to growth is mostly a balance between exits and start ups. This balance changes for cyclical and structural reasons, but usually the addition of new SMEs contributes about 30% of net growth at the most.

2. Fast growth Firms

Some firms are growth oriented - and successful in growing. As a proportion this is only small; perhaps 20% to 25% of all SMEs are serious about seeking growth, but only 5% are successful in actually achieving sustained growth. These firms seem to contribute around 70% of all net job growth, though their contribution to value added growth may be less. These firms are not necessarily SMEs, and may be a part of a larger company (or may be taken over to become a subsidiary of a larger company). Their growth path does not necessarily follow a consistent trajectory, and the set of high growth firms changes continuously. Many of these firms emerge from the pool of small firms as successful start ups. Their success is often enhanced by entrepreneurs stepping out of larger firms to “do their own thing”, and their success is dependent upon management skill and finance that can sustain continued growth. Many of these fast growth firms are now able to operate internationally.

3. Large firms

Large firms typically have more than 500 employees and contribute at most about 30% of job growth, although they often contribute to job reductions, depending on the



point in the business cycle, and depending on structural changes in the economy. A significant proportion of these large firms are MNCs. Large firms employ half the workforce and provide an important industrial infrastructure for start up and growth of smaller firms. Larger firms are important at increasing the efficiency of smaller firms by rationalising and providing efficient distribution channels, R & D sources and funds for development.

The entrepreneurial engine

Figure 1 schematically summarises the interaction of these three main elements of the entrepreneurial engine. All three elements are essential to entrepreneurial growth.

A second way of looking at the entrepreneurial engine is illustrated in figure 2, which focuses on the entrepreneurial engine in Asia. What this shows is that all entrepreneurs are drawn from the general population; there is a seedbed of potential entrepreneurs of about 2 billion people in Asia. Of these, about 1 billion to about 1.5 billion would be of the age that we might expect them to be able to start a business.

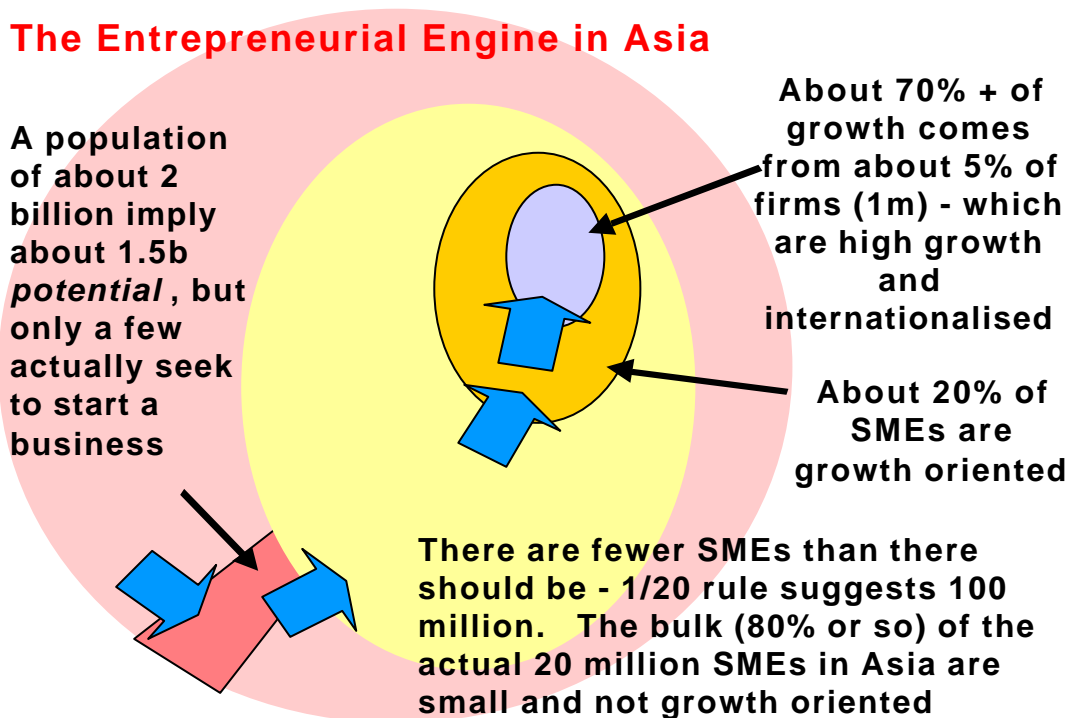


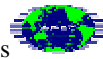
Figure 1 The entrepreneurial engine

Size and numbers	dynamics	growth contribution
Large - only about 1% of firms are large and theysurvive for longer by starting up new ventures or absorbing promising smaller firms, butthey usually make a negative contribution to job <i>growth</i> as large firms rationalise
Fast growth - only about 5% to 10% of firms succeed in achieving sustained...	...growth, surviving 8 years or more, and expanding to a point wherethey make a large contribution to job growth - probably 70%+ of all growth
Small - 90+% of firms are small with less than 100 employees	Start up rates vary from 5% to 20% pa. Most firms do not grow much above 5 employees, and most exit within about 7 years	Some contribution to job growth in conditions where start ups exceed exits - typically this occurs when cyclical and structural conditions are favourable

source: Hall (1998)

Figure 2 The entrepreneurial engine in Asia





The seedbed of the population creates a garden of SMEs. In developed economies we can expect there to be about one SME for every 20 people in the population, or about 1 million SMEs for every 20 million people. In Asia the start up rates and numbers of SMEs are less than occur in developed economies. Estimates of the number or start ups and the number of SMEs are difficult to obtain for Asia. An approximate estimate is that there are about 20 million SMEs in Asia, though many of these would be small TVEs in China. This suggests that there are probably about 100 people per SME, and that ideally there should be somewhere around four and five times as many SMEs as there are now. For historical and structural reasons the number of SMEs is much less than it should be in China, Indonesia and Vietnam.

If the garden has less plants growing in it than it should have, then we would expect less trees to grow forth. This is the case, but some parts of Asia seems somewhat further disadvantaged; there is a “missing middle”. Of the SMEs that do start, only about 20% will really be growth oriented. The rest are important politically and as lifestyle businesses, but they do not contribute much to net growth. That said, the sheer start up of SMEs in China, Vietnam, Indonesia and some other economies could be a very major source of job creation and growth in the future in those economies. Identifying which businesses are growth oriented is difficult, but a proxy is those that have succeeded in expanding from small or micro size (usually about 5 to 10 people) to a size where they are about medium sized (say 20 - 100 people), and thus have usually adopted some sort of formal management structure. In some Asian economies there is evidence of a “missing middle”. This is particularly the case for Indonesia, as illustrated by Table 1. Medium sized firms (with between 20 and 99 employees) tend to be unrepresented - they make up only 8% of output in Indonesia. This can be contrasted with similar firms contributing about 32% of output in Japan, and 41% in Chinese Taipei.



Table 1. The missing middle - Percentage contribution to output, employment and structure, by size class in selected Asian countries - manufacturing

	small and cottage <20	medium 20 - 100	large 101 - 500	very large >501	n=
Japan					41
% establishments	74	21	3	1	5,109
% output		32	19	48	
% employment		53	18	28	
Singapore					4,0
% establishments	41	42	14	3	13
% output	3	12	26	59	
% employment	5	26	27	44	
Chinese Taipei					73
% establishments	96	3	1	0	8,914
% output	25	16	20	1	
% employment	46	18	16	39	
Indonesia					1,6
% establishments	99	.8	.2	.0	00,000
% output	17	6	22	6	
% employment	67	*	*	55	
				33	
				*	

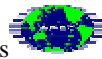
Japan: - 1992 Small Business in Japan. Manufacturing only. medium is up to 300, large is 300 +.

Singapore: -1994 Manufacturing only . Census of Industrial Production.

Chinese Taipei (Taiwan): - 1991 Census of Industry and Commerce, figures are for non agricultural sector. Micro sector is for firms less than 30 employees, small is 30 - 99 employees.

Indonesia: - estimated - Manufacturing only, 1990. Applies to formal (ie registered firms only). Estimated from BPS data and from Thee (1994) and Hill (1995) and Basri (1994). * included in large category.

In developed economies, the evidence suggests that the bulk of job growth, and probably most value added growth, comes from only about 5% to 10% of firms that are growth oriented and successful. These firms are not all SMEs, but many are small and many are part of a larger network or grouping rather than being stand alone. They grow quickly, so growth rates of 50% pa are not unusual, and they are increasingly internationalised. Identifying these firms after they have succeeded is relatively simple, but identifying them before they succeed is much more difficult; this is the essence of the “picking winners” problem facing many policy makers.



2. ESTIMATES OF THE POTENTIAL ECONOMIC BENEFITS OFFERED BY SMEs VIA GREATER ECONOMIC INTEGRATION AND E-COMMERCE IN APEC

The potential for fast growing internationalised SMEs to add to the APEC economy should not be underestimated. Estimates below that greater structural integration of APEC economies (offered by E-commerce and reduction of tariff and non tariff barriers) will allow SMEs to increase their contribution to the APEC economy *relative* to larger firms, and bring it more in line with that typically found in integrated economies. Available evidence suggests that there is the potential for SMEs to add about \$1 trillion in trade and about \$150 billion in FDI per annum to the APEC economy if structural changes allow a simpler, more business friendly, more integrated APEC economy to emerge.

We really do not know how much trade and investment is carried out by SMEs in APEC. The best available information (and that usually quoted in APEC documents) suggests that:

SMEs contribute about 30% to 35% of APEC trade, and

SME FDI probably makes up less than 10% of FDI, but higher proportion of cases.

The figures for trade are from work done by the author for the OECD, set out below. They date from nearly a decade ago now, and are based on a jigsaw of information. No more recent estimates have been made. The figure usually quoted as being an APEC figure is in fact an Asian figure - not an APEC figure, so the 35% figure for SME trade is probably an overstatement when USA and other more advanced economies in APEC are taken into account.



Table 2 Structural contribution of SMEs to exports 1991-2

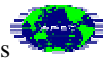
	GDP \$ US millions	Exports as per cent of GDP	Share of SMEs in total Exports %
OECD			
Denmark	121 695	27	M ~46
Finland	121 982	19	M 23
France	1 167 749	18	M 26
Greece	65 504	12	19
Italy	1 072 198	15	53
Japan	3 337 191	12	13.5
Netherlands	278 839	47	26
Sweden	280 000	25	30
weighted contribution	4.3		26.1
Non OECD			
PRC	435 000	21	40 - 60
Korea	285 000	27	40
Indonesia	128 000	23	10.6
Chinese Taipei	210 000	44	56
Thailand	108 000	29	10
Malaysia	60 000	72	15
Singapore	46 000	138	16
Vietnam	14 000	7	20
weighted contribution	11.7		35.2

Source: OECD 1997

Note: ~ indicate estimate only. M = manufacturing only. Exports are direct exports by SMEs. This understates the true contribution of SMEs to exports.

Weighted contribution. For exports is the sum of GDP multiplied by the percentage of exports multiplied by the percentage of direct SME exports expressed as a percentage of total exports. For GDP is the same figure expressed as a percentage of total GDP.

SME FDI is much more difficult to estimate - though some work has been done by UNCTAD (1998). Only two APEC economies, Republic of Korea and Japan, keep any form of statistics on FDI by size of firm. None of the other APEC members keep data on the size of the firm investing or being invested in. The only figures which might approximate SME FDI are based on approvals, not actual investment, and are based only on approvals of a given amount, say, less than \$1 million US. These can only be obtained from economies which require registration of foreign investments, and which then allow access to the data so as to allow a breakdown by size of investment. This approach does not of course guarantee that the investment is by an SME. An investment of \$1 million may be being made by quite a large firm as part of a bigger project (for example the installation of computer equipment in a refinery). Similarly many SMEs may make significantly larger commitments. What figures are then



available on “small package” inward FDI - this is based on FDI approvals of less than \$US 1 million. The key points which emerge from this are that:

- in terms of *cases*, small package FDI makes up a significant proportion, ranging from about 15% - 20% in Vietnam to over 60% in Philippines.

- however, in terms of *value*, small package FDI does not loom very large in the overall picture. It makes up as little as half a percent in Vietnam, and only about 2% to 10% by value in the Philippines. SME FDI flows from Korea make up about 20% of all outward FDI flows.

How much SME trade and investment *should* there be in APEC? This question is impossible to answer except in some very broad brush terms. Two aspects need to be distinguished:

- The first is growth of international activity by SMEs as a result of economic growth. UNCTAD evidence generally suggests that, as a rough proxy, trade grows at about double the rate of GDP growth, and FDI grows at about double the rate of trade. Other things equal, and even if SMEs remain relatively under-represented in international activity, we can expect the growth of SME trade and investment to outstrip GDP growth.

The second is a structural change in the relative importance of SMEs versus larger firms in international activity. The potential for gains here is much larger. SMEs make up only about 30% of trade and about 10% of FDI, whereas they have the potential to contribute nearly 50% of each.

Table 3 suggests that trade in APEC is likely to be about \$3 trillion per year in 2000. If GDP in APEC grows at about 4% per annum, then growth in trade can be expected to be about 8% pa, and SMEs should add about 30% of this, or about \$80 billion per year.

How much *could* SMEs contribute to trade under ideal conditions? In a fully integrated economy SMEs typically make up about 50% of economic activity; that is SMEs contribute about 50% of GDP and about 50% of investment. At present SMEs seem to make up only about 30% or so of trade. If APEC exports are expected to be about \$3 trillion in 2000 (see table 2 below), then SMEs would make up only \$1 trillion of the total (or about 30%). If SMEs were to realise their full potential, then they should contribute roughly the same as larger firms (that is about 50%, or about what they contribute in a fully integrated economy), or about \$2 trillion. This implies that if SMEs reach their full economic potential, SME exports would double, from \$1 trillion to \$2 trillion, and total export trade in APEC would expand by 30%, from \$3 trillion to \$4 trillion. To put this in perspective, an extra \$1 trillion in trade each year is more than the combined economies of Canada and Australia, and about double the equivalent of all of Asean. It would be a significant addition to the APEC economy.

**Table 3 Imports and Exports 1990 - 1997 - APEC and the World**

year	world imports \$ Trillion	APEC Imports \$ trillion	% APEC	world exports \$ trillion	APEC exports \$trillion	% APEC
1997	5.4	2.4	44	5.3	2.3	42
1996	5.3	2.3	43	5.2	2.1	40
1995	5.1	2.1	43	4.9	2.1	41
1994	4.2	1.9	44	4.1	1.8	42
1993	3.7	1.6	43	3.6	1.5	42
1992	3.8	1.5	39	3.7	1.4	39
1991	3.5	1.4	38	3.4	1.3	38
1990	3.6	1.3	37	3.4	1.2	35

Source: APEC, drawn from UN Monthly Bulletin of Statistics July 1998

Table 4 shows FDI flows in APEC. SMEs probably make up only about 10% of these (or about \$20 billion). If GDP in APEC grows at 4% then FDI is likely to grow at about 16%, so the growth of SME contributions to FDI is likely to be about \$3.2 billion.

How much *could* SMEs contribute to increased FDI in APEC under ideal conditions? SMEs typically make up about half of all investment in an economy, but across borders it is much less; SME FDI usually only makes up about 10% of FDI. Table 4 shows that in 1996, FDI flows in APEC amounted to about \$189 billion in inflows and \$166 billion in outflows. (Seen in perspective, FDI flows are less than one tenth of trade flows in APEC, but typically trade flows are growing at about double GDP growth, and FDI is typically growing at about double the growth in trade flows). About 90% of this FDI (or about \$168 billion in outflows) is probably attributable to large firms, and only 10%, or about \$20 billion in outflows, is attributable to SMEs. In an ideal world, SMEs would be contributing as much as the large firms. This would suggest that the potential is there for SMEs to increase FDI in APEC by about \$150 billion per year. To put this in rough perspective, \$150 billion is about the same as the GDP of Hong Kong China or Indonesia. In itself it would be a significant addition to the APEC economy, but FDI has strong multiplier and technology transfer benefits as well.

**Table 4 FDI flows in APEC 1996**

	FDI inflows 1996 \$m	FDI outflows 1996 \$m
Australia	6403	1343
Brunei Darussalem	9	0
Canada	6681	7543
Chile	3140	956
China	42300	2200
Hong Kong China	2500	27000
Indonesia	7960	512
Japan	220	23440
Korea	2308	4188
Malaysia	5300	1906
Mexico	7535	553
New Zealand	2928	-157
PNG	230	0
Philippines	1408	182
Singapore	9440	4800
Chinese Taipei	1402	3096
Thailand	2426	1740
USA	84629	84902
Vietnam	2156	1740
	188975	165944

source: UNCTAD World Investment Report 1997 table B

In summary, we should expect that if commitments to reduced trade and investment barriers are maintained then we can expect SMEs to add:

about \$80 billion a year to trade in APEC; and

about \$3.2 billion in FDI.

Similarly, were the APEC economies to achieve a level of integration where SMEs can move as easily across borders as large firms (in effect achieving an almost borderless economy) it would be possible for SMEs to add as much as about:

\$1 trillion each year in additional economic trade; and

\$150 billion each year in additional investment.

Clearly the main gains will come from a structural shift which would enable SMEs to operate in a more integrated APEC economy. How realistic is this?

On the one hand, it is unlikely that APEC will become a fully integrated economy in the next 20 years, at least in the sense of the moves of the European Union to full monetary union. The target might thus be discounted to reflect the political reality that even with the best will in the world, and even by 2020, economic union in APEC will be a long way off. Even so, even if the figures above are halved, they still reflect a very large potential gain which at present is being almost ignored.



On the other hand, the rapid changes brought forth by E commerce and globalisation mean that the potential for SMEs to contribute to the growth of the global or regional economy is greater than ever before. It would be particularly shortsighted to ignore this potential, and to not address any impediments that can be identified.

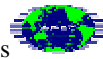
3. WHAT IS APEC DOING WITH RESPECT TO E-COMMERCE AND SMEs

APEC has two main streams of activity:

1. TILF - Trade and investment liberalisation. This is implemented by individual action plans (IAPs) put forward by individual member economies in line with broader targets negotiated by a consensual process. The main elements of these broader targets are to achieve free and open trade and investment in the region by 2010 for industrialised economies and by 2020 for the developing economies.
2. ECOTECH - Economic and technical cooperation. This is mostly implemented by means of a series of projects, undertaken by individual economies or by groups of members working together. The main goals of the ECOTECH program are to:
 - develop human capital;
 - foster safe efficient capital markets;
 - strengthen economic infrastructure;
 - harness technologies for the future;
 - promote environmentally sustainable growth; and
 - encourage the development and growth of SMEs.

There are three broad areas where APEC can contribute to SMEs:

1. *Reduce barriers to trade and investment.* Most of this TILF activity to date has focussed on tariffs and investment guidelines.
2. *Support SMEs in their efforts to become more internationally competitive.* The APEC Ecotech Agenda has a number of initiatives focussing on SMEs.
3. *Build a better business environment.* Within APEC, improving the business environment (for example, by seeking to harmonise regulations) has been largely the responsibility of working groups such as Infrastructure, Fisheries, Tourism, Trade Policy etc. SMEs are a cross cutting issue in this context.



APEC has no specific targets or objectives for SME activities, and the IAPs do not set any specific targets. The SPAN document (Integrated Plan of Action for SME Development), launched at the 1998 SME Ministerial, seeks to provide a focus for other APEC groups to refer to when reviewing their activities. The intention is to encourage a common framework for the development of SMEs though this is so broad as to be of very little use in setting priorities at economy level or at APEC level.

The APEC 1999 Blueprint for Action on Electronic Commerce sets out the role for government as being to:

- Provide a favourable environment, including the legal and regulatory environment, which is predictable transparent and consistent;
- Provide an environment which promotes trust and confidence;
- Promotes the efficient use of electronic commerce;
- Become leading edge in the use of electronic commerce.

The first meeting of the Electronic Commerce Steering Group was held in New Zealand in June 1999. The main work program focuses on:

- “Paperless trading” (actually electronic customs clearance and export documentation and payment for goods). This is left ultimately to individual action plans.
- Measurement of electronic commerce. At this stage this is limited to encouraging meetings of experts, and sharing available information.
- Researching the legal foundations for electronic commerce. This area follows work by OECD and UNICTRAL, and mostly involves holding of workshops.
- Establishing readiness indicators, so that members can evaluate their preparedness and position themselves for electronic commerce.

The APEC work complements and tracks the broader OECD work plans which cover:

- consumer protection;
- privacy protection;
- authentication and certification;
- defining and measuring electronic commerce;
- analytical work examining the economic and social impacts on SMEs;
- taxation issues;



- delivery of government services;
- trade and market access, and electronic commerce in the next WTO round;
- development cooperation.

What is APEC doing with respect to SMEs and E commerce? The short answer is nothing very specific.

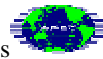
4.THE HRM CHALLENGES ASSOCIATED WITH E-COMMERCE AND SMEs

The emergence of the Internet economy (or Ecommerce) is now opening up significant growth opportunities for some SMEs. Much of the growth of China, Korea, Chinese Taipei and Japan is directly associated with the success of their SMEs. The challenge is to ensure that the next generation of SMEs can contribute to their full potential. From an APEC perspective, E commerce offers opportunities for firms, especially smaller firms, to move across borders, and to create a much more integrated and seamless business environment. To take advantage of these opportunities, SME managers face challenges - they need to be “born global” and to be able to grow globally, they need to understand the new E-economy and to be able to access the technology of the internet, and they need to be able to access the finance necessary to grow quickly. The biggest HRM challenge is likely to be at a managerial level.

No one really knows how the E commerce economy will evolve, especially in Asia where fixed line access and internet access is less common than in more anglophone economies. In some scenarios, E commerce will radically alter the way firms do business with each other, and with their customers. It will open up access to global market places, and it is already providing a flood of information and intelligence to managers and customers. In other scenarios, E commerce will essentially just replace the existing communication and transactions methods that firms use already, albeit making them cheaper and more efficient. People and firms will adapt, much as they have already to the telephone, and to TV. There is some truth to both scenarios. Most electronic commerce is business to business, and in most countries about 80% of money has been electronic for 20 years or so. In economies such as France, where Minitel has been in place for more than 15 years, E commerce has been the norm for many people, and it has not radically altered the way people do business. On the other hand it is clear that some internet based firms are growing quickly, and they are altering the ways in which we can do and do business.

We can broadly hypothesise then that E commerce will offer opportunities to firms on three main dimensions:

1. Cost reducing - eg E commerce will create opportunities to reduce costs or improve efficiencies.



2. Market enhancing - eg E commerce will allow direct access to customers beyond a local market catchment, or will allow tailoring of products and prices to specific customers.
3. Information, competitive intelligence and management enhancing - eg E commerce will allow managers to identify opportunities, to track competitors, and to build and manage alliances and global network arrangements much more effectively than hitherto possible.

The firms that can and do take advantage of all three will be the ones that contribute most to growth. APEC is not homogenous - of the 40 million or so SMEs in APEC, the firms best positioned to take advantage of the window of opportunity offered by E-commerce tend to be located in the more developed economies. It is important to the longer term success of APEC, and to continued political support of APEC objectives, that Asia restart its entrepreneurial engine, and is not left behind in taking advantage of the window of opportunity offered by E-commerce. E commerce will not benefit, or impact on, all SMEs equally. It makes sense to identify priorities, and to target scarce resources in APEC at where they will have most effect. This is the main challenge.

In terms of the entrepreneurial engine framework developed in section 1, there are about 1.5 billion potential entrepreneurs and about 20 million SME managers in Asia who need to be better informed about E commerce. This poses an almost impossible HRM challenge. However, the great bulk of about 80% of SMEs are mostly lifestyle businesses which do not grow much or contribute much to growth. E commerce will be likely have a marginal impact on most of them, and the impact will be limited mostly to the benefits passed on by larger firms and governments, for example by means of lower transaction costs and better support services.

On the other hand, the biggest opportunities, and the biggest potential impact is likely to be from those 20% or so of SMEs seeking growth, and more particularly the 5% of firms who really have the potential to succeed and make a significant net contribution to job and value added growth. As argued in section 2, the potential gains here are quite large, but they are contingent upon firms being able to take advantage of the opportunities to achieve growth by moving across borders. The challenge here is still large, - in Asia we are probably talking about 1 to 4 million or more SMEs and their managers. The challenge is not just an HRM one; there are many tariff and non tariff barriers to be addressed, and the need to develop more efficient financial markets. Asian financial markets are not yet developed to a point where they can support fast growth firms effectively.

Figure 3 summarises the HRM challenges as along a scale, defined by the entrepreneurial engine. Although all three main targets need to be addressed, it makes more sense to attach a higher priority to targeting the fast growth SME managers; it is a relatively smaller, more manageable target, and likely to lead to more immediate results.



Figure 3 HRM challenges and E commerce in APEC - Asia

about 1 - 2 billion	About 20 million increasing to about 80 - 100 million	about 1 million increasing to about 5 million
<i>General population</i>	<i>SME managers</i>	<i>Fast growth SME managers</i>
Access to internet, training on entrepreneurship, and how to use electronic communications in business and as customers	Access to internet, access to training on how to use specific aspects of E commerce relevant to their business, and on how to identify business opportunities, and manage growth should they wish to take advantage of those opportunities	Access to training on how to manage fast growth, international firms, and access to updated knowledge of opportunities associated with E commerce as it evolves

5. SUGGESTED OPTIONS FOR INITIATIVES TO MEET THESE CHALLENGES AND REALISE THE POTENTIAL GAINS.

It is tempting to suggest that APEC should actively engage in appropriate HRM training to encourage more E commerce in SMEs. However, figure 3 above, clearly shows that the task is simply too large for APEC to have much impact. What can APEC realistically do?

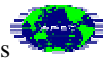
In section 2 it was argued that the potential gains from a more integrated, more business friendly APEC are large. From an APEC perspective there are two prongs of activity which are relevant to meeting the challenges associated with E commerce and SMEs.

1. The first is breaking down barriers to a more integrated economy. This TILF activity broadly breaks into tariff and non tariff initiatives.
2. The second is in providing or creating an appropriate supporting environment. This is mostly ecotech activity.

5.1 Tariff and non tariff barriers

APEC’s main activity to date has been in addressing tariff barriers. For the most part, tariff and investment barriers do not discriminate against SMEs, and SMEs will benefit in the same way as large firms with the reduction in such barriers. Where SMEs are suppliers to larger international firms they will benefit in line with the expansion of trade and investment. Where SMEs internationalise in their own right, they will also gain from the reductions in complexity and administrative burdens associated with reductions in tariffs and investment controls.

However the real gain to SMEs (and to APEC) will now come with attention to NTBs, especially reductions in non border regulatory and administrative burdens, because these pose special problems to small firms moving across borders and growing quickly. Attention to these areas will allow SMEs to expand their international activity *relative to* larger firms. This in turn means that the entrepreneurial engine will operate more effectively at an international level, and it is this that generates most of the jobs and wealth.



Box 2 - The benefits of reducing impediments to SME trade and investment

As part of the APEC technoforum feasibility study, a survey was made of advanced technology SMEs to see what initiatives would be most likely to benefit their firms. The results do not pretend to be statistically reliable (they only represent about 50 firms), but they are interesting nevertheless, if only because of the quality of the responses. Respondents were asked to indicate how helpful they would find a list of initiatives (box below). There is some commonality about the helpfulness of some issues, but on others there is wide variation. They were also asked if the package of initiatives they regarded as “very helpful” were to be implemented, then how much would that help them in expanding their international activities.

List of initiatives
APEC is a multilateral organisation which seeks to encourage more trade, investment and economic activity across borders. Please indicate how helpful each of the following initiatives is likely to be in creating a better international business environment in which to expand your business.....
*a. Faster reduction of specific tariff barriers
*b. Faster reduction of non tariff barriers (eg unnecessary regulations)
*c. Better access to government and large firm procurement for smaller international companies
d. Increased efforts to reduce inconsistencies and differences in industry and product regulations
e. Better access for small firms to large firm EDI systems
f. Better access for small firms to processes for developing industry standards for specific products
g. Better protection of intellectual property rights
h. Dispute settlement procedures more suited to the needs of smaller companies (eg faster, less legalistic)
i. Reduced restrictions on mobility of skilled staff
j. Development of regional international capital markets suited to needs of smaller international companies
*k. More direct access to APEC officials to alert them to the needs of firms in emerging industries
*l. More opportunities for display of technology and products
m. More technology exchange and cooperation programs
n. Other (please specify)

* denotes regarded as being regarded as very helpful by a clear majority of respondents.

- The initiatives regarded by almost all respondents as *very helpful* were “faster reduction of specific tariff barriers and/or non tariff barriers” (though not necessarily both together), “better access to government and large firm procurement for smaller international companies”, “more access for display of technology and products”, and “more direct access to APEC officials to alert them to the needs of firms in emerging industries”.
- For most of the other initiatives, the variation in helpfulness was quite wide - for example, for some, access to international venture capital, or standardised EDI, is likely to be very helpful, while for others these issues are of little or no importance.
- The *package* of initiatives that the respondents nominated as “very helpful” would, in their opinion, if implemented, be effective in increasing their rate of growth by somewhere between 20% and above 50%. Although some were start up business, and thus had no track record of sales yet, growth rate of turnover was between 10% and 30% pa.



It is extremely difficult to make any quantitative assessment of the relative importance of different barriers to SMEs, or of the likely effect of their removal on SME activity, simply because of the lack of any reliable empirical information in APEC. This is especially the case for NTBs, and for improvements in business infrastructure. Part of the problem is that “*administrative costs tend to be hidden. They do not usually involve actual money flows, but time lost in meeting administrative requirements.*” Netherlands Ministry of Economic Affairs (1995, p5). The OECD is currently undertaking work on the impact of NTBs and their effect on market dynamism, entrepreneurship and business activities. Work to date clearly shows that such NTBs do have a significant impact. Anecdotally, such NTBs may be responsible for 20% or so of SME costs. To the extent that these are unnecessary, and to the extent that they fall disproportionately on SMEs, they pose a significant barrier and impediment. Box 2 sets out some limited empirical evidence from APEC on the likely effect of addressing specific impediments. This suggests that the benefits may be quite large for SMEs ready to take advantage of the initiatives, and may allow them to increase their international activity by between 20% and 50%.

The problem is that we do not know what these impediments are when it comes to E commerce and SMEs, and APEC has no ongoing process for identifying them. An ad hoc project has been recommended at the Christchurch Ministerial, which requires member governments to identify impediments and report back to the next meeting in Brunei. However, because this is being done at a member economy level, and not an APEC level, and because it is a one off exercise, it is hard to see how it will really help much.

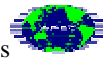
5.2 Supporting environment

The APEC SME PLG has tended to concentrate on this ecotech area. For example the SPAN document seeks to build the capacity of SMEs, and to assist in their adjustment, particularly through the key focus areas of financing, HRD, technology, market access, and access to information. “Helping your Business Grow” summarises the initiatives taken by APEC each year to assist SMEs. However most of these initiatives are ad hoc and there is no monitoring of the effectiveness or impact of them on SMEs in APEC (there is the usual process of administrative review of projects within APEC, but that is more procedural).

5.3 What can APEC do?

It is perhaps useful to first look at what APEC cannot do:

- APEC cannot engage in massive training programs, at least not on the scale required to bring the required skills and knowledge about E commerce to millions of people and managers;
- APEC is a consensus organisation, and it cannot impose conditions on member governments. It is thus not possible to adopt and enforce a comprehensive plan for implementing E commerce encryption standards for



example, nor is it possible to enforce a code of practice for E commerce consumer protection.

Given budget and political constraints, what can APEC do to increase E commerce usage in SMEs and amongst Asian SMEs in particular? From an HRD point of view, APEC is rather limited in what it can do. However it can take steps to

- facilitate private sector initiatives on enhancing E commerce:
- reduce impediments to fast growing international SMEs;
- provide indicators, benchmarks, and best practice information for members to better evaluate the rate of acceptance and penetration of E commerce.

5.3.1 Cooperate with private sector to increase access to advice on E commerce

Although APEC does not have the resources needed to make a significant contribution to E commerce HRD training, APEC can still play a useful role in cooperating with the private sector to improve access to information and training on E commerce. Two examples of initiatives which are already on the table are:

- PECC is already working in conjunction with IBM to develop and implement training programs in Vietnam and Philippines (PECC 1999);
- At the Christchurch SME Ministerial, Ministers directed the PLG to examine the feasibility of linking electronic information services for SMEs in APEC so that there is a single SME friendly entry point, and to similarly provide a single entry point for SMEs to data bases on tariff, non tariff and other requirements.

Further to these, it makes some sense to develop programs in conjunction with the private sector organisations who are active in working with fast growing SMEs in the region; venture capitalists, telecoms, ISPs and internet companies, consulting and accounting companies, etc. One of the benefits of such programs is that it gives more direct interaction between government officials and private sector executives which helps to give both sides a better understanding of the problems associated with rapid change and rapid growth.

5.3.2 Identifying and acting on impediments to E commerce

APEC *can* act as a point of focus for international business to express its concerns about unnecessary impediments to economic and social development. Business is no longer constrained by national borders. E commerce means that even small companies can operate across borders, but when they do so they are faced with impediments. Some of these impediments can be overcome if the firms have ready access to advice. Some are more intractable and unnecessary. APEC can be a focus point for identifying impediments, which in turn will help member states provide useful advice, and to respond by addressing unnecessary impediments to E commerce. ABAC is nominally



the business contact point, but it has been less than successful in being representative of business, and especially of small business.

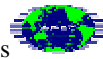
Preliminary studies suggest that it is feasible to establish a self funded notification system, in conjunction with existing business or industry organisations, such as chambers of commerce and the like. An APEC Notification System or ANS, could be:

- A mechanism to identify areas in APEC where there are unnecessary regulations or impediments (especially non tariff barriers) to the development of business;
- A mechanism to help identify practical suggestions for ways that APEC and member economy governments can develop a better business environment;
- Business initiated, sponsored and run;
- Equally accessible to large and small businesses, but providing a cost effective means for SMEs to have their voice heard in international areas;
- Non confrontationist and non legalistic - ANS need not act as a lobbyist, but might simply seek to identify problems and raise general issues.

How might it work? Individual firms could lodge a notification, which might be a specific complaint or a more general suggestion. This would be lodged with an ANS agent. A notification lodgement would cost a nominal amount, which might go partly to ANS and partly to the ANS agent. An ANS agent would usually be an industry association such as a Chamber of Commerce. Once lodged the notification would be sent on to the ANS central point. The notification could be in two parts; a part which identifies the lodging firm and agent, and a part which sets out the issues. Only the latter part need be sighted by the ANS central point; the document will be identified only by a reference code, so anonymity is provided to the lodging firm. The ANS central point could then carry out an initial brief review, and then depending on the nature of the issue it may do any or all of the following.

1. request more information and clarification, or make suggestions as to other approaches that might be adopted in dealing with the problem;
2. pass the notification on immediately to appropriate authorities in the relevant economy for their information (ANS will not act as a lobbyist);
3. refer the information to a panel of experts to review and to make general recommendations to APEC (ANS will not recommend on specific disputes or act as a lobbyist);
4. suggest to APEC that a more general review be initiated to address major issues or emerging issues.

ANS would request a response from APEC or from the relevant government. ANS could report back to the relevant ANS agent, who would then report to the lodging



firm. Each year ANS would provide a summary of the nature of lodgements and actions taken. This report would be likely to attract considerable media attention. Most of this could be done electronically and at relatively low cost. The administrative processes of the ANS could build on and complement existing facilities; it would not require any substantial new infrastructure. Preliminary feasibility studies show that its operations could be self funding, although start up would require some additional funding.

5.3.3 Better indicators on SMEs and E Commerce

Improved indicators are part of the APEC E commerce group's target activities. The APEC SME Indicators Project (Hall 1998) has shown that it is feasible to improve the quality and accuracy of information available to decision makers and policy makers, and that this can be done cost effectively. Being able to track the level of penetration and use of E commerce, and the level of E commerce training and access is important for member economies to decide on priorities for support services. At present it is almost impossible to benchmark these indicators against other economies.

Further E commerce itself might offer ways of better tracking SME activity in APEC. The emergence of electronic commerce, especially in conjunction with web based sales supported by post and courier, will have far reaching consequences for SMEs and their ability to penetrate international markets. At present it is not at all clear how the regulatory and reporting regime for Electronic Commerce will evolve. However, it seems likely that for tax purposes, all E-commerce transactions will need to be reported in some way, and in a way that links them to an identifiable entity. This offers the potential to track the participation of SMEs in E-commerce, and their role in international E-commerce.

CONCLUSION

APEC is limited in what it can do to foster E commerce, and is especially limited when it comes to HRD. However, there is a relatively narrow window of opportunity to develop a base of fast growing E commerce firms in Asia. The growth of E commerce in Asia has been impeded by the Asian slowdown, and by the lack of fixed line access to the internet. The potential gains in of a more integrated, business friendly APEC economy are large. Most of these gains will come from structural changes which increase the relative importance of SMEs in the international economy. E commerce will help achieve these gains more quickly than they would otherwise be able to be achieved, but only if APEC makes continuing efforts to

- identify and address impediments, especially at non border non tariff impediments.
- work with the business sector and private sector to make it easier for fast growth SMEs to grow quickly and internationally.

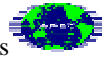


REFERENCES

- APEC 1999 Blueprint for Action on Electronic Commerce,
www.ecommerce.gov/apec/blueprint.html
- Basri, Faisal H. (1994), Manufacturing Industry in the National Economy: Position of Small Scale Business, in Rahardjo, M Dawam (ed) (1994) Small Business in the Indonesian Economy, Ministry of Cooperatives and Small Enterprise of the Republic of Indonesia, Jakarta, p 165 - 177.
- Davis, S.J. Hatiwnager, J. and Schuh, S (1993), Small Business and Job Creation: Dissecting the Myth and Reassessing the Facts. National Bureau of Economic Research, Working Paper No 4992, Cambridge AM.
- Hall, C (1995) Best Practice Access Policies for SMEs - A study of Australia, Japan, New Zealand, the Peoples' Republic of China, Indonesia, Chinese Taipei and Korea. Japanese Medium and Small Enterprises International Centre and the Japan Small Business Finance Corporation.
- Hall C (1998) APEC SME Indicators, a feasibility assessment, BSMBD Philippines on behalf of APEC, Sydney.
- Hill, Hal, (1995) Small Medium Enterprise and Rapid Industrialization: the ASEAN experience, Journal of Asian Business, 11 (2), 1 - 30.
- Japan, Small and Medium Enterprise Agency, MITI. (various years), Small Business in Japan; White Paper on Small and Medium Enterprises in Japan.
- Netherlands, Ministry for Economic Affairs, (1995) Towards Lower Administrative Costs, The Hague.
- OECD (1997) Globalisation and SMEs, synthesis report
- OECD (1999) Workshop on regulatory reform and SMEs; summary, DSTI/IND(99)5, Paris February 23-24 1999.
- PECC (1999) Information Resource Study on Voluntary Sector Liberalisation for APEC, Preliminary Draft. Singapore
- PECC (1999) Developing Human Resources in the Asia Pacific region: from research to implementation, Issues, PECC, Singapore.
- Thee, Kian Wee, (1995). "Foreign Direct Investment in Indonesia since Independence", unpublished paper to the First Conference of the European Association for South East Asian Studies (EUROSEAS), Leiden.
- UNCTAD, (1998), Handbook on FDI by SMEs; lessons from Asia, UNCTAD, Geneva.

**TEMPORARY EMPLOYMENT
IN US SMALL AND MEDIUM ENTERPRISES:
PATTERNS AND DETERMINANTS**

**Jyh-Jer Roger Ko
Institute of Human Resource Management
National Sun Yat-sen University (Chines Taipei)**



TEMPORARY EMPLOYMENT IN US SMALL AND MEDIUM ENTERPRISES: PATTERNS AND DETERMINANTS

ABSTRACT

This paper examines the factors that influence US small and medium enterprises' (SMEs) use of temporary workers. The objective of this paper is to explain how the use of temporary workers allows SMEs to achieve staffing flexibility, lower labor costs, obtain specialized services, and deal with union pressure. To test these hypotheses, I identify features of jobs, organizations, and environments which are likely to predict the use of temporary workers.

Data for this research come from the 1991 National Organizations Study. These data on employers yielded information on around 1700 jobs. Most analysis was conducted using logit and tobit models that included extensive controls for occupation, industry, and region.

The results pertaining to the use of temporaries are mixed with respect to the main hypotheses. Evidence shows that temporaries are used to achieve staffing flexibility that is provided by part-time workers and that is facilitated by decentralizing the decision making on using contingent workers; and they are used more by firms that face union pressure. On the other hand, temporaries are less likely to be employed in jobs where labor costs such as pay and training cost are high; and they appear not to be used to obtain specialized services, because in general temporaries lacked such specialized skills.

The above findings provide some practical implications for SMEs' human resources management practices, particularly for contingent labor deployment.



INTRODUCTION

Recently public attention has been drawn to the "temping" phenomenon, the growing contingent work arrangements including part-time, temporary, and subcontracting work in American workplaces. Conspicuous headlines such as "the temping of America", "disposable workers", and "just-in-time employees" have been ubiquitous in the press. The growing contingent workforce has also become a pressing topic and a main concern of corporate America (Callaghan and Hartmann 1991; Nollen and Axel 1996).

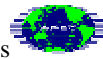
Generally speaking, contingent workers are people with little or no attachment to the organization for which they work. When and how much they work depends on the organization's need. Their work schedule is irregular and usually they have no job security and no implicit contract for continued employment. Furthermore, contingent workers usually earn less and are less likely to receive fringe benefits than workers in comparable full-time jobs (Polivka and Nardone 1989). In practice, contingent workers can be hourly part-time employees, temporaries from staffing companies, direct-hire temporaries, workers from leasing companies, or independent short-term contractors (Nollen and Axel 1996). Due to space consideration, this paper focuses on temporary workers only.

Temporary employment has grown rapidly in recent years. Data from the Bureau of Labor Statistics (BLS) for the help supply services (temporary help) industry constitutes a basis for what is known about temporary workers. This industry, which supplies temporary workers to client firms, has been growing very fast. The employment share of the help supply services industry among nonfarm employments rose from below 0.3 to 1.8 percent between 1972 and 1994. The number of workers employed in this industry grew 8.4 times larger between 1972 and 1994 (from less than 214,000 to 2,002,000) (U.S. Department of Labor 1995: 32-33).

Following the rapid growth of temporary employment, there have been some studies about temporary workers, but thus far there are only few studies examine factors that facilitate or impede employers' use of temporary workers and, moreover, there is no research investigates different patterns of temporary employment for various sizes of enterprises. This research thus focuses on the pattern of temporary employment and explores factors that influence temporary employment in US small and medium enterprises (SMEs)¹.

The reasons for using contingent employment have been considered from several perspectives: staffing flexibility (Abraham 1990; Abraham and Taylor 1996; Callaghan and Hartmann 1991; Nollen and Axel 1996), employment costs (Abraham 1990; Callaghan and Hartmann 1991; Davis-Blake and Uzzi 1993; Pfeffer and Baron 1988), specialized services (Abraham 1990; Abraham and Taylor 1996; Harrison and Kelley 1993), and union avoidance (Davis-Blake and Uzzi 1993; Pfeffer and Baron 1988). An illuminating way to learn why employers use contingent workers is to study the job,

¹ SMEs refer to the enterprises whose number of employees are less than 500.



organizational and environmental correlates of reasons that have been proposed by major researchers (Abraham and Taylor 1996). Through such analysis, we can obtain a better understanding of what sort of job is more likely to be externalized, what type of organization tends to use contingent workers and what kind of environment paves the way for contingent workers.

The paper is organized as follows. The next section reviews the literature and discusses the theoretical and empirical expectations surrounding the reasons employers give for using contingent workers. The third section describes data, measures, and the empirical design. The fourth section gives the empirical findings and analysis about the determinants of employers' use of contingent workers. The last section provides a summary and discussion.

REASONS WHY SME EMPLOYERS USE TEMPORARY WORKERS

There are four main reasons SME employers give for their use of temporary employment arrangements: to increase staffing flexibility, to reduce labor costs, to acquire specialized services, and to avoid unionization.² In the next several sections, the corresponding job-related, organizational and environmental indicators of each reason are specified and then testable hypotheses are formulated.

Increasing Staffing Flexibility

Since the 1980s, new economic conditions have increased the variability and uncertainty in demand for products and services. In order to respond to cyclical or unpredictable variations in demand, employers need freedom to vary the number of work hours and the size of workforce; this type of flexibility is known as the numerical flexibility (Rosenberg 1989; Rubery, Tarling and Wilkinson 1987). In this light, contingent workers are the best choice for employers to achieve numerical flexibility. Employers can add or subtract the number of workers as needed, and thus avoid the added cost of idle people during slack times and the extra cost of overtime during peak periods (Nollen and Axel 1996). Therefore, if an important reason for firms to employ contingent workers is to rapidly adjust the number of workers because of fluctuation in demand, then the number of contingent workers an employer needs would be determined by the size of the workload fluctuations.

Previous research has provided some evidence that higher variation in production and employment levels increase the use of contingent workers. Mangum, Mayall, and Nelson (1985) found that the use of temporary workers was positively associated with the instability of product demand as measured by employment change. Abraham (1990) reported that both the seasonal and cyclical variation in an organization's demand affect the use of temporary workers. Based on the preceding discussion, I predict:

²Besides these five main reasons, there are some other reasons reported by various sources: filling in for absent employees, screening a candidate for future employment, inability to find regular workers and easing management tasks. Due to data limitations, I cannot construct variables for these reasons.



Hypothesis 1: There is a positive relationship between the extent of variation in industrial and organizational employment levels and the use of temporary workers.

Researchers have argued that transformed organizations often build participation and empowerment into their organizational structure, both by pushing decisions to the lower levels of the organization and by breaking down boundaries across departments through the use of teams (Appelbaum and Batt 1994; Osterman 1994). The use of contingent work arrangements is related to the transformed organizations because contingent labor force is used to buffer core employees from job loss in such transformed work systems (Abraham 1990; Abraham and Taylor 1996). Through this link, I connect the degree of decentralization of decision-making on using contingent work arrangements to the actual use of contingent workers, and predict:

Hypothesis 2: The more decentralized the organizational decision-making structure is, the more likely the organization will employ temporary workers.

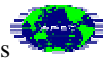
Reducing Labor Costs

Since the 1980s, new economic conditions have increased the variability and uncertainty in product demand, expanded and internationalized the domain of markets, and influenced firm market shares. These new features of competition in combination with the experience of severe and recurring recession have caused employers to become very sensitive to all types of costs, especially labor-related costs. These factors have pressured organizations to cut labor costs, to achieve greater flexibility in the employment of their workforce, and to change organization boundaries by shifting some costs of production to contingent workers. In this respect, contingent employment arrangements seem to fit employers' broader strategy of cutting labor costs and boosting organizations' competitiveness: contingent workers are less expensive than regular workers because their pay and benefits can be lower (Carre 1992, Parker 1994).

Using contingent workers can save on labor costs in two ways. First, the use of contingent workers can reduce employment costs, such as payroll, fringe benefits expenditure, and training costs. Second, many employers believe that dismissing regular employees and using contingent workers as replacements is the most effective way of reducing costs. Therefore, labor costs related to the use of contingent workers can be studied from these two perspectives: employment costs, and downsizing action.

Employment Costs

Contingent workers normally receive lower pay than regular full-time employees and are usually excluded from the available fringe benefits. In addition, through contingent employment arrangements, employers can reduce or eliminate overtime and save on expenditures associated with various aspects of employment such as recruiting, training, and even firing workers (Abraham 1990; Appelbaum 1987; Callaghan and Hartmann 1991; Parker 1994). Since data on the cost of other aspects of employment practices were not available, I limit my discussion to training costs only. Therefore, my discussion of employment costs focuses on pay, fringe benefits and training costs.



Pay. A major reason employers hire contingent workers is to minimize expenses associated with regular workers. Since contingent workers generally receive lower pay than regular employees, employers are tempted to use contingent work arrangements to reduce employment costs if the high pay level of certain jobs has been a main concern.

Research on the earnings of contingent workers has found that contingent workers earn less than regular workers. Using data from the Bureau of Labor Statistics, Callaghan and Hartmann (1991) found that temporary workers earned about 75 to 80 percent of what wage and salary workers earned during the 1980s.

Other researchers also have found a connection between the pay level and use of contingent work arrangements. Studying contracting arrangements in manufacturing industries, Harrison and Kelley (1993) reported that a higher wage level in the work force they studied increased the likelihood of subcontracting. Abraham and Taylor (1996) found that wage saving is a key factor in contracting out tasks in three out of five types of services they studied. Thus, I predict:

Hypothesis 3: The higher the level of pay for a job, the more likely the organization will use temporary employment arrangements.

Fringe benefits. Fringe benefit costs for regular employees are a substantial part of employment costs; thus employers are motivated to avoid fringe benefit costs by using contingent workers. The U.S. Chamber of Commerce's annual employer survey shows that non-wage payroll costs have increased from 28 to 38 percent of total payroll between 1969 and 1989 (cited in Callaghan and Hartmann 1991, p. 26). From BLS data on benefit, wage, and total compensation costs per hour, Callaghan and Hartmann (1991) found that between 1970 and 1991 employers' payments for various fringe benefits grew from 20 to 28 percent of total compensation for employed workers (p. 26).

Some researchers have related fringe benefit costs to the use of contingent workers. Abraham and Taylor (1996) argued that the soaring cost of health insurance during the 1980s may well have strengthened employers' incentives to contract out tasks to firms not offering health benefits. Davis-Blake and Uzzi (1993) found fringe benefits did not affect the use of both temporary workers and independent contractors, but they noted that this finding may be due to their use of an industry-level fringe benefit measure, which may not be a good indicator of a firm's fringe benefits level. In contrast, Mangum, Mayall, and Nelson (1985) reported that firms with higher fringe benefits used more call-ins and temporary-help service employees, whereas they found no effect of fringe benefit levels on the use of direct-hires. Based on the above reasoning, I predict:

Hypothesis 4: The higher the level of fringe benefits in an organization, the more likely the organization will use temporary workers.



Training costs. Facing increasing economic competition and uncertainty, many employers are using job training to cope with rapid changes in technology, industrial restructuring, market conditions, and demographic shifts (Knoke and Kalleberg 1994). Organizational formal training involves human, physical and financial resources; hence expenditure on training constitutes a substantial part of employment costs. In addition, it takes time for employers to recoup training costs. Hence, organizations tend to retain those employees with formal training. Williamson (1979, 1981) offered a similar argument: employers with firm-specific skills will pursue a long-term employment relationship with regular employees to avoid losing the investment in high training costs. Davis-Blake and Uzzi's (1993) findings that firm-specific training had a negative effect on the use of temporary workers supports this line of argument. I thus infer that if a job involves high training costs, employers will try to retain the regular employees with organizational-specific training and will be less likely to replace the employees with contingent workers; the accompanying hypothesis is:

Hypothesis 5 Jobs involving higher training costs are less likely to be filled by temporary and contracting workers.

Downsizing (Controlling Headcount)

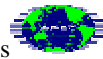
For many employers, the fastest and easiest way to reduce costs is to dismiss workers. At the same time, with several recessions still fresh in their memories and the ongoing 1990-1991 recession, employers are reluctant to hire regular workers (Parker 1993). Under such conditions, downsizing has been increasingly used as a strategic move toward cost-saving. Although it has not been verified that controlling headcount through the use of contingent workers can save costs, many employers have followed the downsizing trend. They believe that controlling headcount can contain costs and do not consider contingent workers as part of headcount (Nollen and Axel 1996).

One major problem downsizing organizations have to face, especially those which turn to temporary or contract workers as substitutes for regular employees, is that they are most likely to use a considerable number of contingent workers. Nollen and Axel (1995) found that "downsized companies often find themselves in this predicament when large numbers of employees are terminated without controls in place to protect vital jobs and prevent a massive talent drain. Seeking an immediate solution, such companies then bring back former employees and temporaries to fill in the gaps" (p. 43). This measure brings in a work force of so-called "permanent temporaries" (Nollen and Axel 1995: 43). Considering that downsizing organizations use contingent workers to prevent a talent drain, I predict:

Hypothesis 6 Organizations that have downsized within the past year will be more likely to use temporary workers than those that have not downsized.

Acquiring Specialized Services

The need for specialized services is another essential reason why organizations adopt contingent work arrangements. Acquiring specialized talent has gained



importance in an era of downsizing and restructuring. Organizations may sometimes find that they do not have the specialized equipment or skills in-house needed to produce a product or deliver a service. Therefore, they have to turn to outside providers--either temporary or contract workers--to perform the specialized tasks. The situation can be either due to the considerations concerning the economies of scale in the provision of the specialized services in question (Abraham and Taylor 1996), or due to organizational strategic concerns (Harrison and Kelley 1993). This reason for using contingent workers includes two organizational correlates: economies of scale, and product/service diversity.

Economies of Scale (Establishment size)

Contracting arrangements for a particular job may indicate that an organization cannot economically maintain the specialized equipment or skills in-house. In addition, firm size is sometimes used to indicate the extent of economic scale. Therefore, small organizations would be more likely to contract out for this reason (Abraham and Taylor 1996). Harrison and Kelley (1993) held a similar argument regarding subcontracting behavior in terms of their machining production sample, but their indicator of the scale of machining operations is employment in those occupations at the establishment, which is different from establishment size. Although both arguments are focusing on contracting arrangements, similar reasoning can be applied to temporary workers. Because large firms have a larger pool of employees than small firms, they are likely to have employees available to meet temporary skill or service needs.

The argument that large organizations are less likely than small organizations to use temporary workers has been partially supported by past research. Davis-Blake and Uzzi (1993) reported that larger establishments were less likely to use temporary workers than small ones. In contrast, Mangum, Mayall, and Nelson (1985) reported that large organizations were more likely than small organizations to use temporary workers, based on a bivariate relationship.

Based on economies of scale, I infer that:

Hypothesis 7: Larger organizations should be less likely to employ temporary workers.

Product/Service Diversity

As product/service diversity increases, the employer will be more likely to encounter the need for greater capacity or for more specialized skills or tools that cannot be easily accessed in-house. Outside subcontractors may have specialized skills or equipment that the organization needs. Therefore, product/service diversity increases the likelihood of subcontracting out (Harrison and Kelley 1993). Harrison and Kelley (1993) verified this argument in their empirical study on manufacturing industries. Jobs requiring specialized skills or equipment generally involve high complexity. Specialized subcontractors might be able to meet the job requirements, but temporary workers are less likely to fit into such jobs. Davis-Blake and Uzzi (1993) found that temporary workers usually fill in low skill jobs. Thus, I infer that the impact of product/service diversity upon the use of temporary and subcontracting workers will be



different and predict:

Hypothesis 8: The greater an organization's diversity of product/service, the less likely it is that the employer will use temporary workers.

Avoiding Unionization

One main argument on the effect of unionization upon the use of contingent workers is that of union avoidance. While public discussion did not pay much attention to it, supposedly one of the main reasons for the use of contingent work arrangements is to allow organizations to remain union-free or to weaken incumbent unions. It is generally believed that contingent workers are difficult to organize because many contingent workers either do not stay with the same employer for extended periods, or because they work for more than one employer, conditions that leave them at a disadvantage in organizing and mobilizing collective action for their own welfare. Moreover, contingent workers are generally separated from and excluded by the regular employees because some employers use contingent workers to put pressure on regular employees (Parker 1994; Pfeffer and Baron 1988). Hence employers can hamper unions through contingent work arrangements since contingent workers are inherently more difficult to organize and are often in tension with the organized regular employees.

This line of reasoning implies a positive relationship between the use of contingent workers and the intensity of union pressure, because as union pressure increases, employers are more likely to utilize contingent workers to remain union-free or to weaken incumbent unions. Based on this discussion, I predict:

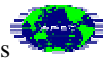
Hypothesis 9: The intensity of union pressure in an organization will be positively associated with the organization's use of temporary workers and subcontracting.

DATA AND MEASUREMENT

In this section, I discuss the data and measurement of this research.

Data

The main data used in this research come from the 1991 National Organizations Study (NOS) (Kalleberg, Knoke, Marsden and Spaeth 1991), which consists of data on 727 employers of the respondents and their spouses in the 1991 General Social Survey (GSS). The NOS concentrated on the establishments' human resources policies and practices. Items asked about current staffing procedures, internal job ladders and promotion chains, job training programs, and employee benefits and incentives. Additional items gathered basic information about each organization's formal structures, social demography, environmental situation, and productivity and performance.



Unit of Analysis

In order to take the job heterogeneity in the NOS into consideration, I created a job level data set which concatenated information of the three jobs, core, GSS and managerial jobs, which were collected by the same sequence of questions. By doing so, I transformed the organizational data set into a job-level data set and made *job* the unit of analysis in this research. As a result of this procedure, the sample size was increased from 727 to 1701.

Measurement

Variables used can be broadly divided into two groups: dependent and independent variables. For analytical purposes, independent variables were further classified into two categories, study and control variables. Table 4.4 reports the definitions, means, and standard deviations of all the variables used in this paper by three levels--job, organizational and environmental.

Dependent Variables

Use of temporary workers (coded one if temporary workers were used for the job and zero if not) and the extent of using temporary workers were examined at the job level of analysis. The two measures of temporary work arrangements are based on the same question repeated for three jobs: "About what percentage (of CORE, GSS or MANAGERIAL workers) were temporaries?"

Independent Variables

Independent variables are divided into two groups: study and control variables.

Study Variables

Four sets of variables will be constructed to measure job, organizational, and environmental indicators of the following four reasons for using contingent workers: increasing staffing flexibility, reducing labor costs, acquiring specialized services, and avoiding unionization.

(1) Increasing staffing flexibility

Organizational variation in employment was measured as the standard deviation in an organization's employment of full-timers and part-timers within the past one and three years. *Industrial variation in employment* was measured as the coefficient of variation of monthly employment in various industries over the period from 1989 to 1990. The data come from the BLS "Employment and Earnings".

(2) Reducing labor costs

Three measures of employment costs are constructed. The *pay level* of a job is what most persons in that job earned annually in the organization. *Fringe benefits* is a scale based on 13 items of various benefits including medicare, dental care, life



insurance, sick leave, maternity leave, elderly care, flexible hours, cash or stock bonus, pensions, profit-sharing, drug and alcohol abuse programs, disability insurance, and child care. *Training costs* is a logged expenditure measure representing the training budget divided by the number of persons trained.

Two binary indicators of *downsizing* are used: if an organization has ever cut the number of full-time or part-time employees within the last year, then it is considered a downsizing organization.

(3) Acquiring specialized services

Organizational size is defined as the natural log of an establishment's full plus part-time employees. The indicator of *product/service diversity* is based on employers' evaluations of their organizations' performance in developing new products, services or programs.

(4) Avoiding unionization

No specific NOS survey item asked informants to estimate the degree to which the workforces in their establishment were organized by trade unions. Several items that did appear in the survey, however, are indicative of the presence of organized labor, and these were combined into a *union pressure* scale³. These indicators are well correlated with one another, so the scale has an estimated reliability (Cronbach's alpha) of 0.82.

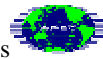
Control variables

Several variables were included to control for human capital, occupational, organizational, governmental, industrial, and geographic factors that were likely to affect the use of contingent workers.

In my research, human capital variables are features of a job (rather than of a current employee) since only job information was available in the NOS data. In order to control for gender effect, the percentage of female employees of a certain job is included. To control for the effects of skills required to perform a job, several measures of occupational complexity from the Dictionary of Occupational Titles (DOT) including information (data), interpersonal (people) and technical (things) complexity; specific vocational preparation (SVP); general educational requirements (GED); and some adaptability and aptitude measures were combined to create two job complexity measures.

Whether an organization is profit or nonprofit could cause fundamental

³ Marsden, Cook and Knoke (1996) inferred the presence of a union when informants told interviewers that formal training was offered by virtue of provisions in union contracts; when union negotiations were said to be an important criterion in the determination of earnings of core or GSS employees; or when it was anticipated that union relations would be a problem for the establishment over the three-year term. These indicators were combined into the *union pressure* scale



differences in practice patterns. To control for organizational type, I included an indicator variable for nonprofit organizations.

Organizations which were regulated by the government ought to be responsive to the concerns of the government. Government agencies have become more concerned about the well-being of contingent workers recently (Belous 1989; Davis-Blake and Uzzi 1993). A scale measuring the intensity of governmental regulation was used to control for the effect of governmental regulation upon the use of contingent workers.

Some researchers (Abraham 1988, 1990; Abraham and Taylor 1996; Davis-Blake and Uzzi 1993; Mangum, Mayall, and Nelson 1985) have suggested that the use of contingent workers varies by occupation, industry, and region. Using 1980 Census occupation codes, six binary variables for occupational categories were created: (1) managerial, (2) professional and technical, (3) sales and administrative support, (4) service, (5) precision production, craft, and repair, and (6) operator, fabricator, laborer, farming and fishing. Binary variables for nine industries were created based on three-digit SIC codes: (1) agriculture, forestry and mining, (2) manufacturing, (3) construction, (4) infrastructural activities (transportation, communication, and utilities), (5) trade (wholesale and retail), (6) finance, insurance, and real estate, (7) professional services, (8) personal services, (9) public administration.

To control for regional effect, four regional binary variables were added to the models: East, West, South, and Midwest (which serves as the omitted category).

Missing values

In order to preserve cases, I replaced missing values of these variables with the means of nonmissing values. However, if cases had missing values on the dependent variables, they were dropped from an equation.

Empirical Design

This section is an overview of the empirical design for studying the determinants of the use/extent of use of contingent work arrangements.

Statistical Methods

One problem that has not been commonly recognized in research on contingent employment is the censored dependent variable problem--variables whose actual values are not observed for a large proportion of the cases. One of the dependent variables in this research, the proportion of temporary workers in a particular job, is censored. A Tobit analysis is thus appropriate for these data (Maddala 1983; Winship and Mare 1992).

When the research focus was switched to whether or not an employer uses temporary workers for a specific job, the logistic model was applied because the dependent variable was binary.



ANALYSIS

Table 1 reports the definitions, means, and standard deviations of the variables used in this paper. Pooling all jobs together, I found that 6 percent of the jobs could be filled with temporary workers for these SMEs. The mean percentage of temporary employees for all kinds of jobs was 2 percent. I examine determinants of whether an SME employer uses temporary workers or not in this section. Table 2 presents the results from the logistic models representing whether or not temporary work arrangements are used for all jobs together. Each model includes the control variables and the group of study variables associated with a particular perspective. The perspectives and the corresponding model titles are "Increasing Staffing Flexibility" (Model 1), "Reducing Labor Costs" (Model 2), "Acquiring Specialized Services" (Model 3), "Avoiding Unionization" (Model 4), and an integrative model (Model 5).

Determinants of the Use of Temporary Workers

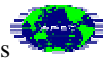
Employers use contingent workers to increase staffing flexibility, to reduce labor costs, to acquire specialized services, and to avoid unionization. Based on the results from Model 1 through Model 5 in Table 2, I had the following findings:

Increasing staffing flexibility. As predicted, organizational fluctuation of part-time employment was important for explaining the use of temporary workers and had a significant positive association with the use of temps. This finding also implies that in deciding the use of temps for a particular job, employers resort to past experiences of employing part-time workers. The significant and positive coefficient of decentralization indicator support the hypothesis that the more decentralized the organizational decision-making structure is, the more likely the organization will employ temporary workers.

Reducing labor costs. Contrary to usual predictions, employment costs such as the pay level and training cost (per trainee) of a job had a negative effect on temporary worker use, while the fringe benefits' measure was not a significant predictor. This result did not support the common argument that the primary motivation for using contingent workers was to save on employment costs; otherwise, the increase of costs should have driven employers to use more temporary workers. One possible interpretation of these negative coefficients is that many of the jobs analyzed were central to the organization's success and were performed by workers who are more difficult to replace. If employers have invested high costs in rewarding and training such employees, they are less likely to replace those employees with contingent workers.

As predicted, one of the downsizing indicators, organizations having downsized their part-time employees, was strongly related to the use of temporary workers. The positive coefficient here showed that organizations which had laid off part-time workers were more likely to use temporary work arrangements.

Acquiring specialized services. I found that both measures indicating the extent of specialization of functions, size of employment and organization's diversity of



products/services, were significant predictors.

An organization's employment size was positively related to the probability that it used temporary workers. Although it was not anticipated that the size variable would have a positive coefficient, the result is consistent with Mangum, Mayall, and Nelson's (1985) findings. This result implied that larger organizations are more likely to employ temporary workers.

As anticipated, product diversity had a significant negative effect on the use of temporary workers. One interpretation is that product/service diversity creates the need for specialized expertise which generally involves high complexity, but temporary workers were less likely to fit into such jobs because in general they lacked the necessary specialized skill. This finding supplemented Davis-Blake and Uzzi's (1993) findings that temporary workers usually filled jobs low in skills.

Avoiding unionization Union pressure, as anticipated, had a positive effect on the use of temporary workers. This evidence supported the union avoidance argument, i.e., as the union pressure increased, employers were more likely to use temporary workers to remain union-free or to weaken existing unions.

Control variables. In general, control variables had the expected signs, though some of them were not statistically significant. Occupation generally had no effect on the use of temporary workers except for the managerial occupation that also served as the managerial job indicator. Moreover, the highly significant and negative coefficient of the managerial job indicator indicated the extremely low usage of temporary work arrangement for managerial jobs. Nonprofit organizations seemed to be more likely to employ temporary workers. Temporary work arrangements were more frequently used in professional and personal service than in manufacturing industries. I also found temporary workers were used less frequently in the East than in the Midwest.

Determinants of the Extent of Employers' Use of Temporary Workers

This section analyzes the determinants of the extent of using temporary workers. The following discussion on the determinants of the extent of using temporary workers is based on Table 3, and is arranged under the headings as the previous section.

Increasing staffing flexibility. As in predicting whether an employer used temporary workers or not, organizational fluctuation of part-time employment was important for explaining the extent of using temporary workers. As predicted, part-time employment variation had a significant positive association with extent of use. This finding implies that in deciding the degree of temping for a particular job, employers resort to past experiences of employing part-time workers.

Reducing labor costs. As seen earlier, in the logit analysis, the pay level of a job and training cost was significant and negatively associated with the extent of using temporary workers. In contrast, the fringe benefit indicator was not a significant predictor. Again, these results did not support the common argument that the primary motivation for using contingent workers was to save on employment costs. Instead, if



employers had invested high costs in rewarding and training those employees, they were less likely to replace them by contingent workers.

Downsizing indicators predicted the extent of using temporary workers in ways that are similar to their prediction of the use of temporary workers. As predicted, one of the downsizing indicators (organizations downsizing their part-time employees) was strongly related to the extent of temporary worker use. The positive coefficient here showed that organizations which had laid off part-time workers were more likely to increase their use of temporary work arrangements.

Acquiring specialized services . Similar to the result for whether or not an employer used temporary workers, both measures indicating the extent of specialization of functions for an organization were significant. An organization's employment size was positively related to the extent of using temporary workers. This deserves further investigation. Product/service diversity, as anticipated, had a significant negative effect on the extent of temporary worker use; this implied that temporary workers were less likely to fit into such complex jobs because in general they lacked complex organization-specific skills.

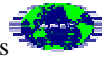
Avoiding unionization Union pressure had a positive effect on the extent of using temporary workers. This evidence supported the union avoidance argument.

Control variables. Occupation generally had no effect on the use of temporary workers except for the managerial occupation. The higher the percentage of female workers for a job, the stronger the extent of using temporary workers. More temporary workers were used by those organizations in the personal service industry than in others. One area indicator was significant; the extent of temping was less serious for organizations in the East.

SUMMARY AND DISCUSSION

This paper draws on theories from organizational sociology, economics, and the sociology of labor markets to examine the factors that influence US SMEs' use of temporary workers. The objective of this paper is to explain how the use of temporary workers allows SMEs to achieve staffing flexibility, lower labor costs, obtain specialized services, deal with union pressure, and improve employees' commitment and competence. To test these hypotheses, I identify features of jobs, organizations, and environments which are likely to predict the use of temporary workers.

The results pertaining to the use of temporaries are mixed with respect to the main hypotheses. Evidence shows that temporaries are used to achieve staffing flexibility that is provided by part-time workers and that is facilitated by higher degree of decentralization on the decision making of using contingent workers; and they are used more by firms that face union pressure. On the other hand, temporaries are less likely to be employed in jobs where labor costs such as pay and training cost are high; and they appear not to be used to obtain specialized services, because in general temporaries lacked such specialized skills.

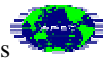


The above findings provide some practical implications for SMEs' human resources management practices, particularly for contingent labor deployment. However, there are a couple of points need to be noted: First, the data set used here was not aimed at the use of temporary workers, therefore some crucial information about the use of temporary arrangements are not available. This problem suggests that more representative and systematic data need to be collected. Second, this research studies the causes of SMEs' use of temporary workers, but does not explore labor market consequences of this use due to lack of appropriate data. This is definitely a very urgent and promising field to be researched considering the rapid growth of the contingent workers.



REFERENCES

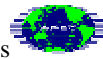
- Abraham, Katharine G. 1990. "Restructuring the Employment Relationship: the Growth of Market-Mediated Work Arrangements." Pp. 85-120 in *New Developments in the Labor Market: Toward a New Institutional Paradigm*, edited by Katharine G. Abraham and Robert B. McKersie. Cambridge, MA: MIT Press.
- Abraham, Katharine G. and Susan K. Taylor. 1996. "Firm's Use of Outside Contractors; Theory and Evidence." *Journal of Labor Economics* 14(3):394-424.
- Appelbaum, Eileen. 1987. "Restructuring Work: Temporary, Part-time, and At-home Employment." Pp. 268-310 in *Computer Chips and Paper Clips: Technology and Women's Employment*, Vol. II, edited by Heidi I. Hartmann. Washington, DC: National Academy Press.
- Appelbaum, Eileen and Rosemary Batt. 1994. *The American Workplace: Transforming Work Systems in the United States*. Ithaca, NY: ILR Press.
- Belous, Richard S. 1989a. "How Human Resource Systems Adjust to the Shift toward Contingent Workers." *Monthly Labor Review* 112(3):7-12.
- Callaghan, Polly and Heidi Hartmann. 1991. *Contingent Work: A Chart Book on Part-time and Temporary Employment*. Washington, DC: Economic Policy Institute.
- Carre, Francoise J. 1992. "Temporary Employment in the Eighties" Pp. 45-87 in *New Policies for the Part-time and Contingent Workforce*, edited by Virginia L. duRivage. Armonk, New York: M.E. Sharpe.
- Davis-Blake, Alison and Brian Uzzi. 1993. "Determinants of Employment Externalization: A Study of Temporary Workers and Independent Contractors." *Administrative Science Quarterly* 38:195-223.
- Harrison, Bennett and Maryellen R. Kelley. 1993. "Outsourcing and the Search for 'Flexibility'." *Work, Employment and Society* 7(2):213-35.
- Kalleberg, Arne L., David Knoke, Peter V. Marsden and Joe L. Spaeth. The 1991 National Organization Studies [machine readable data file]. University of Minnesota [producer] 1992. Inter-university Consortium for Political and Social Research (ICPSR) [distributor] 1993.
- Knoke, David and Kalleberg, Arne L. 1994. "Job Training in U.S. Organizations." *American Sociological Review* 59:537- 46.
- Maddala, G. S. 1983. *Limited-Dependent and Qualitative Variables in Econometrics*. Cambridge, New York: Cambridge University Press.
- Mangum, Garth, Donald Mayall, and Kristin Nelson. 1985. "The Temporary Help Industry: A Response to the Dual Internal Labor Market." *Industrial and Labor Relations Review* 38(4):599- 611.



- Marsden, Peter V., Cynthia R. Cook, and David Knoke. 1996. "American Organizations and Their Environments." Pp.45-66 in *Organizations in America: Analyzing Their Structures and Human Resource Practices*, edited by Arne L. Kalleberg, David Knoke, Peter V. Marsden and Joe L. Spaeth. Thousand Oaks, CA: Sage Publications.
- Nollen, Stanley and Helen Axel. 1996. *Managing Contingent Workers*. New York: AMACOM.
- Osterman, Paul. 1994. "How Common is Workplace Transformation and Who Adopts It ?" *Industrial and Labor Relations Review* 47(2):173-88.
- Parker, Robert E. 1993. "The Labor Force in Transition: The Growth of the Contingent Work Force in the United States." Pp. 116-36 in *The Labor Process and Control of Labor: The Changing Nature of Work Relations in the Late Twentieth Century*, edited by Berch Berberoglu. Westport, CT: Praeger.
- Parker, Robert E. 1994. *Flesh Peddlers and Warm Bodies: The Temporary Help Industry and Its Workers*. New Brunswick, N.J.: Rutgers University Press.
- Pfeffer, Jeffrey and James N. Baron. 1988. "Taking the Workers Back Out: Recent Trends in the Structuring of Employment." Pp. 257-303 in *Research in Organizational Behavior*, Vol. 10, edited by L. L. Cummings and Barry M. Staw. Greenwich, CT: JAI press.
- Polivka, Anne E. and Thomas Nardone. 1989. "On the Definition of 'Contingent work'." *Monthly Labor Review* 109(12): 9-16.
- Rosenberg, Sam. 1989. "From Segmentation to Flexibility." *Labour and Society* 14(4):363- 407.
- Ruberry, Jill, Roger Tarling and Frank Wilkinson. 1987. "Flexibility, Marketing and the Organisation of Production." *Labour and Society* 12(1):131- 151.
- U.S. Department of Labor. 1995. *Report on the American Workforce*. Washington, DC: U.S. Department of Labor.
- Williamson, Oliver E. 1979. *Markets and Hierarchies: Analysis and Antitrust Implications*. New York: Free Press.
- Williamson, Oliver E. 1981. "The Economics of Organization: The Transaction Cost Approach." *American Journal of Sociology* 87:548-77.
- Winship, Christopher and Robert D. Mare. 1992. "Models for Sample Selection Bias." *Annual Review of Sociology* 18:327-50.



Table 1. Table of Variables by Level in This Research			
Variable	Definition	mean	s.d.
<u>Job Level Variables</u>			
% of temporaries	% of temporary workers in a job.	0.02	0.13
Use of temporaries	A dichotomous variable coded 1 if the job uses temporaries.	0.06	0.24
Ln(mode)	The natural logarithm of the annual earnings of most employees in the job earned.	10.07	0.73
Unionization	A proportion measures the intensity of union pressure used by Marsden, Cook and Knoke's (1996) by drawing on three questions of union influence in the NOS questionnaire.	0.30	0.24
Core job	A dichotomous variable coded 1 if the job is a core job.	0.44	0.50
Job complexity	A combined measure of several measures of occupational complexity from the DOT included information (data), interpersonal (people) and technical (things) complexity, specific vocational preparation (SVP), general educational requirement (GED), and some adaptability and aptitude.	2.87	5.63
% of female employees	% of female workers in the job	0.44	0.39
Managerial	A binary variable for the job's occupation.	0.42	0.49
professional, and technical	A binary variable for the job's occupation.	0.13	0.33
sales and administrative support	A binary variable for the job's occupation.	0.16	0.37
Service	A binary variable for the job's occupation.	0.08	0.28
precision, craft, and repair	A binary variable for the job's occupation.	0.07	0.26
operator, fabricator, laborer, and farmer (omitted)	A binary variable for the job's occupation.	0.13	0.34
<u>Organizational Level Variables</u>			
Decentralization	A scale measured by the level at which the decision on using contingent work arrangements is made.	2.72	0.94
Organization's full-timer variation	The standard variation of an organization's employment of full-timers within the past one and three years.	8.22	18.58
Organization's part-timer variation	The standard variation of an organization's employment of part-timers within the past one and three years.	6.00	16.57
Fringe	The proportion of 13 items of various benefits including medicare, dental care, life insurance, sick leave, maternity leave, elderly care, flexible hours, cash or stock bonus, pensions, profit-sharing, drug and alcohol abuse programs, disability insuranc	0.54	0.24
Training expenditure	A logged expenditure measure represents the training budget divided by the number of persons trained.	4.15	3.03
Formal job training	A dichotomous variable coded 1 if the organization provided any employees with formal job training in the past two years.	0.69	0.46
Downsizing full- timer	A binary indicators of downsizing based on a question asking if the organization has ever cut the number of full-time employees within one year.	0.20	0.40
Downsizing part- timer	A binary indicators of downsizing based on a question asking if the organization has ever cut the number of part-time employees within one year.	0.07	0.26



Establishment size	Natural log of establishment's full-plus part-time employees.	3.57	1.58
Product/service diversity	Employer's evaluation of his/her organization's performance in the development of new products, services or programs with that of other similar organizations. (-1= worse; 0 = about the same; 1 = some better; 2 = much better)	0.96	0.78
Non-profit organization	A dichotomous variable coded 1 if the organization is a non-profit organization.	0.29	0.40
Government regulation	A scale measuring the intensity of governmental regulation. The scale is from 1 to 5.	3.28	1.26
<u>Environment Level Variables</u>			
Industrial employment variation	The coefficient of variation of monthly employment in various industries over the period from 1989 to 1990 by using data in "Employment and Earnings".	0.11	0.26
Manufacturing (omitted)	A binary variable for the organization's industry.	0.15	0.35
Construction and agr., mining	A binary variable for the organization's industry.	0.07	0.26
transport, communication, utility	A binary variable for the organization's industry.	0.09	0.28
trade	A binary variable for the organization's industry.	0.20	0.40
finance, insurance, real estate	A binary variable for the organization's industry.	0.07	0.25
Professional service	A binary variable for the organization's industry.	0.24	0.43
Personal service	A binary variable for the organization's industry.	0.12	0.32
public administration	A binary variable for the organization's industry.	0.07	0.25
East	A binary variable indicated the organization's area.	0.34	0.47
Midwest (omitted)	A binary variable indicated the organization's area.	0.37	0.48
South	A binary variable indicated the organization's area.	0.16	0.37
West	A binary variable indicated the organization's area.	0.13	0.34

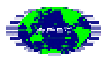
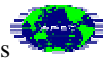


Table 2. The Determinants of Use of Temporary Workers: Logistic Regression Results

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Study variables</i>	β (s.e. (β))	β (s.e. (β))	β (s.e. (β))	β (s.e. (β))	β (s.e. (β))
<i>Staffing Flexibility</i>					
Emp. variation	-.516 (.878)				-.509 (.898)
Varemp (full)	-.007 (.008)				-.004 (.009)
Varemp (part)	.013** (.006)				.012* (.007)
Decentralization	.331*** (.108)				.268** (.115)
<i>Labor Cost</i>					
Mode of earnings		-.314** (.151)			-.277* (.160)
Training cost		-.054 (.050)			-.101* (.054)
Fringe		.427 (.676)			-.556 (.854)
Empf1dec (full)		-.202 (.361)			-.222 (.366)
Empf1dec (part)		1.203*** (.431)			.831* (.447)
<i>Specialized Services</i>					
Size			.280*** (.100)		.351*** (.129)
Diversity			-.483*** (.168)		-.483*** (.176)
<i>Avoiding Unionization</i>					
Union pressure				.765 (.631)	1.368** (.676)
<i>Control variables</i>					
Core job	.472 (.300)	.431 (.303)	.550* (.305)	.440 (.299)	.540* (.306)
Job complexity	-.043 (.039)	-.026 (.039)	-.019 (.040)	-.041 (.039)	-.012 (.041)
Perwoman	.005 (.004)	.004 (.004)	.006 (.004)	.006 (.004)	.005 (.004)
Nonprofit	.827** (.372)	.771** (.381)	.541 (.381)	.726* (.373)	.627 (.401)
Governmental regulation	.095 (.119)	.108 (.123)	.001 (.127)	.057 (.119)	.072 (.133)
<i>Occupation</i>					
Managerial	-1.641** (.753)	-1.781** (.761)	-1.969*** (.765)	-1.607** (.751)	-1.859** (.769)
Professional, and technical	-.663 (.692)	-.737 (.698)	-1.002 (.712)	-.718 (.696)	-.922 (.703)
Sales & adm. Support	.278 (.506)	.054 (.506)	-.027 (.515)	.080 (.500)	.059 (.524)



Service	.064 (.527)	-.104 (.525)	-.242 (.536)	-.093 (.519)	-.256 (.551)
Precision, craft, and repair	.483 (.524)	.434 (.525)	.326 (.531)	.343 (.519)	.476 (.538)
Operator, farmer & laborer (omitted)					
<i>Industry</i>					
Construction	-.328 (.874)	-1.119 (.719)	-.395 (.733)	-.934 (.704)	-.263 (.889)
Communication, transport & utility	-.094 (.596)	-.409 (.596)	.028 (.608)	-.279 (.592)	.088 (.616)
Trade	-.599 (.572)	-1.152* (.583)	-.537 (.578)	-.808 (.558)	-.660 (.602)
Finance, insurance, real estate	-1.112 (.891)	-1.168 (.897)	-.531 (.900)	-1.142 (.869)	-.578 (.973)
Professional service	.832 (.579)	.433 (.586)	.887 (.596)	.485 (.571)	1.018* (.608)
Personal service	.612 (.505)	.409 (.519)	1.022* (.537)	.451 (.494)	1.001* (.555)
Public administration	-1.019 (.921)	-1.385 (.920)	-1.018 (.931)	-1.282 (.911)	-.720 (.945)
Manufacturing (omitted)					
<i>Area</i>					
East	-.509 (.317)	-.592* (.315)	-.609* (.315)	-.605** (.313)	-.506 (.326)
South	-.478 (.392)	-.544 (.389)	-.578 (.391)	-.489 (.386)	-.542 (.403)
West	-.107 (.375)	-.035 (.374)	-.090 (.375)	-.099 (.367)	.033 (.387)
Midwest (omitted)					
N	1274	1274	1274	1274	1274
-2 log likelihood	476.074	478.291	475.507	488.724	450.288
χ^2 (df)	105.32****	103.10****	105.88****	92.67****	131.10****
Pseudo R ²	.181	.177	.182	.159	.226

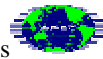
* p<.10; ** p<.05; *** p<.01; **** p<.001.

Logistic regression coefficients are reported. Standard errors are in parentheses. The two-sided z-test was applied to test all variables.



Table 3. The Determinants of the Intensity of Employers' Use of Temporary Workers: Tobit Models

	Model 1	Model 2	Model 3	Model 4	Model 5
<i>Study variables</i>	β (s.e. (β))	β (s.e. (β))	β (s.e. (β))	β (s.e. (β))	β (s.e. (β))
<i>Staffing Flexibility</i>					
Emp. variation	-.241 (.389)				-.235 (.394)
Varemp (full)	-.004 (.004)				-.003 (.004)
Varemp (part)	.007** (.003)				.006* (.003)
Decentralization	.157*** (.054)				.135*** (.056)
<i>Labor Cost</i>					
Mode of earnings		-.176** (.078)			-.157** (.080)
Training cost		-.022 (.024)			-.039 (.025)
Fringe		.112 (.319)			-.136 (.390)
Empf1dec (full)		-.096 (.166)			-.101 (.166)
Empp1dec (part)		.468** (.215)			.317 (.212)
<i>Specialized Services</i>					
Size			.096** (.047)		.109* (.059)
Diversity			-.225*** (.082)		-.218*** (.083)
<i>Avoiding Unionization</i>					
Union pressure				.314 (.304)	.532* (.323)
<i>Control variables</i>					
Core job	.120 (.138)	.086 (.139)	.140 (.141)	.100 (.138)	.121 (.138)
Job complexity	-.021 (.019)	-.015 (.019)	-.013 (.019)	-.021 (.019)	-.011 (.019)
Perwoman	.003* (.002)	.003 (.002)	.003* (.002)	.003* (.002)	.003 (.002)
Nonprofit	.278 (.179)	.255 (.182)	.166 (.182)	.243 (.179)	.181 (.185)
G. regulation	.038 (.057)	.052 (.059)	.009 (.060)	.019 (.057)	.048 (.062)
<i>Occupation</i>					
Managerial	-.708** (.339)	-.739** (.345)	-.842** (.350)	-.690** (.341)	-.756** (.347)



Professional, technical and sales & adm. Support Service	-.194 (.312)	-.199 (.317)	-.334 (.324)	-.237 (.318)	-.251 (.316)
Precision, craft, and repair Operator, farmer & laborer (omitted)	.153 (.231)	.067 (.233)	.028 (.234)	.064 (.232)	.074 (.234)
Industry	.110 (.243)	.016 (.244)	-.029 (.248)	.025 (.245)	-.030 (.247)
Construction	.329 (.240)	.293 (.241)	.270 (.242)	.262 (.240)	.355 (.243)
Communication, transport & utility Trade	.067 (.379)	-.321 (.308)	-.120 (.314)	-.228 (.298)	.018 (.388)
Finance, insurance, real estate	.030 (.269)	-.136 (.276)	-.004 (.275)	-.070 (.270)	.061 (.278)
Professional service	-.257 (.251)	-.489* (.259)	-.304 (.254)	-.359 (.251)	-.278 (.261)
Personal service	-.567 (.420)	-.597 (.421)	-.366 (.411)	-.573 (.406)	-.357 (.433)
Public administration	.378 (.263)	.208 (.266)	.341 (.269)	.243 (.260)	.444 (.276)
Manufacturing (omitted)	.383* (.232)	.287 (.239)	.477** (.246)	.306 (.231)	.527** (.251)
Area	-.277 (.401)	-.450 (.402)	-.336 (.403)	-.418 (.400)	-.110 (.403)
East	-.274* (.148)	-.278* (.148)	-.304** (.150)	-.292** (.148)	-.267* (.150)
South	-.267 (.183)	-.302* (.186)	-.286 (.183)	-.269 (.183)	-.304 (.189)
West	-.083 (.177)	-.020 (.177)	-.053 (.178)	-.063 (.176)	-.015 (.179)
Midwest (omitted)					
N	1274	1274	1274	1274	1274
-2 log likelihood	508.424	511.810	511.715	521.871	487.008
? ² (df)	104.98****	101.59****	101.69****	91.53****	126.40****
Pseudo R ²	.171	.166	.166	.149	.206

* p<.10; ** p<.05; *** p<.01; **** p<.001.

Tobit regression coefficients are reported. Standard errors are in parentheses. The two-sided t-test was applied to test all variables.

**TRAINING PRACTICES AND THEIR EFFECTIVENESS:
THE EXPERIENCE OF SMALL AND MEDIUM-SIZE
ENTERPRISES IN CHINESE TAIPEI**

Tung-Chun Huang
Institute of Human Resource Management
National Central University (Chinese Taipei)

**TRAINING PRACTICES AND THEIR EFFECTIVENESS:
THE EXPERIENCE OF SMALL AND MEDIUM-SIZE ENTERPRISES
IN CHINESE TAIPEI**

ABSTRACT

To determine whether training programs produce real benefits for small and medium-size enterprises (SMEs), we must investigate the relationships between those programs and their effects on the business performance of SMEs. Although a number of previous studies have attempted to accomplish this task, serious inadequacies, such as inconsistent definitions of training and “rough” methods of training classification and measurement, have raised doubts about the validity of their findings. To remedy these inadequacies and more accurately assess the relationships between training and training effectiveness, this study employs a comprehensive measurement of training including training organization, expenditure, duration, process, and delivery methods. Its findings show that firms with sophisticated training systems and strong management support for training are most successful at maximizing the effectiveness of their training programs.



INTRODUCTION AND RESEARCH OBJECTIVE

An educated and well-trained work force is considered to be essential to the maintenance of a business firm's competitive advantage in a global economy. It is also believed that training can and should be a powerful agent to facilitate a firm's expansion and the development of its capabilities, thus enhancing profitability (Cosh, Duncan, and Hughes, 1998). However, Westhead and Storey (1997) suggest that employees in small and medium-size enterprises (SMEs) are much less likely to receive training than their counterparts in larger organizations. They offer two possible explanations to account for this phenomenon. One is "ignorance," which suggests that small business owners are not aware of the benefits of training and consequently provides less than an optimal amount of it to their employees. Another is the "market-forces" explanation, according to which business owners provide a less-than-optimal level of training because they anticipate that the costs associated with training may exceed the benefits (returns) to be derived from it.

These two opposing arguments have important policy implications. If ignorance is the major reason for inadequate training, then either owners/managers are poorly informed or training programs have not been marketed with sufficient vigor, or both. Such a situation would justify government intervention in the form of minimum training requirements or direct training subsidies for SMEs. If, on the other hand, the market-forces explanation is found to be superior, then government intervention could prove totally ineffective. If we are to intelligently decide which policy direction to follow, we must first carefully examine the relationship between training programs and business performance, and determine the type and extent of benefits which training brings to SMEs.

Despite the growing importance of SME research during the last decade, very little attention has been paid to the effectiveness of training programs for small and medium-size businesses. Cosh, Duncan, and Hughes (1998), Marshall et al (1993, 1995), and Westhead and Storey (1996, 1997) have attempted to rectify this situation. However, their studies are inconclusive and their focus is strictly limited to Western society. Consequently, additional research on this issue from a greater variety of perspectives has been encouraged (Westhead and Storey, 1996).

In a survey of 1,480 SMEs in Canada, Baldwin et al (1994) found both the proportions of employees receiving training and training expenditure per employee to be negatively correlated with business profitability. They also discovered that the most successful firms tend to train fewer workers than less-successful ones. A study by Wynarczyk et al (1993) of fast-growth SMEs in the UK showed an insignificant relationship between the provision of training and firm performance when other related variables were controlled. Another survey conducted by the Cambridge Small Business Centre in the UK (1992), found no clear link between firm growth and the provision of training. Storey and Westhead (1994) after examining previous research on the relationship between training and small-business performance, concluded that the association between these two variables is not well established. Finally, Marshall et al (1995) suggested that management-training projects have little effect on the

performance of small firms, though they may be successful in larger companies with greater management skill and capacity.

Westhead and Storey claimed that the studies they had reviewed (1997) had failed to substantiate an alleged link between training and improved performance. Noting that training in SMEs may vary according to knowledge or skills conveyed, duration, proportion of the work force participating, and modes of delivery, they advocated studying the effects on firm performance of training programs classified according to their specific contents.

More recently, Cosh, Duncan, and Hughes (1998) investigated a sample of 1,640 UK SMEs that had participated in surveys in 1991 and 1995. As a result of their investigation, they found a positive link between training and firm survival, but one that was not statistically significant. The authors also examined the relationship between formal training and business performance in terms of employment growth and profitability. They found that training was strongly related to employment and sales growth, but unrelated to profit margins. In a subsequent review, Kitching (1998) faulted this investigation for defining “formal training” in a manner subject to differing interpretations by respondents. In addition he criticized the assignment of firms to trainer and non-trainer categories, based on the presence or absence of formal training programs, as “too rough” a system of classification. Kitching suggested a more sensitive conceptualization of the term “training investment,” one which takes account of differences in the nature and duration of training and the extent of employee coverage.

Like earlier research by Westhead and Storey (1997) and Kitching (1998), this study seeks to examine the relationship between training systems and their effectiveness. However, it employs a concept of training that is more comprehensive than that of other studies, one that includes training organization, expenditures, duration, employee coverage, and delivery methods. A key aim is to profile differences in the training practices of SMEs in Chinese Taipei and in the effectiveness of training programs conducted by such firms.

METHODOLOGY

Data Source

The population from which our sample was drawn is the “name list of manufacturing firms in Chinese Taipei,” an electronic file maintained by the Ministry of Economic Affairs. This list contains data on 7,686 firms with a work force of between 50 and 300 employees. Six hundred firms, randomly selected from the population to ensure representation by all size categories, were sent questionnaires regarding their training practices. Of the 568 questionnaires received by these firms (32 were undeliverable), 144 completed questionnaires were returned, for an effective response rate of 25.4%. A comparison of participating firms with non-participating ones showed no significant difference in firm size.

The average number of employees per sample firm was 146. Classified by ascending order of scale, 30.8% of the sample firms had fewer than 100 employees,



36.3% had between 100 and 200 employees, and 32.9% had between 200 and 300 employees. The typical sample firm had been in business for 22 years. Trade unions had been established at 31.6% of the respondent firms, but not at the remaining 68.4%. Ninety-six percent of the sample firms are privately owned, and the remainder are state-owned enterprises.

Classifying Respondent Firms by Training Effectiveness

Respondents were asked to rank the performance of their establishments with regard to ten aspects of training-related effectiveness, in accordance with a five-point scale ranging from “very good” (5) to “very bad” (1). The ten aspects are: product or service quality, work motivation, ability and knowledge, operational safety, profitability, work efficiency, job satisfaction, and the reduction of material wastage and absenteeism. Using the scores for these training-effectiveness indicators, this study employed cluster analysis to categorize the responding firms into “better” and “worse” performance groups. (See Table 1.) As a result, 84 firms were placed in the better training-effectiveness category and 46 in the worse category. (Since 14 of the sample firms did not complete the questionnaire, only 130 firms were classified in this manner.) The two groups were seen to be significantly different with regard to performance on the ten training-effectiveness indicators ($p < 0.01$). The cluster analysis procedure showed that the average scores of the firms in the better group were all higher than firms that in the worse group.

Is training effectiveness related to organizational characteristics? Data show that although the average number of employees per firm in the better training-effectiveness group (155) is a little higher than that of the worse group (141), there is no statistically significant difference between them. The better training-effectiveness group also has a larger amount of capital per firm (US\$69 million) than the worse group (US\$11 million); however, there is no significant difference here either. The only significant difference is that the average firm age (22 years) in the better group is considerably greater than that in the worse one (17 years). The implication is that perceived training effectiveness is not related to firm size as represented by employee number and amount of capital, but that older SMEs seem to achieve better training results than younger ones.

TRAINING ORGANIZATION AND EXPENDITURES, AND TRAINING PROVISIONS

Training consists of organized learning activities capable of improving individual performance through changes in knowledge, skills, or attitudes (Nadler, 1980). The training process includes such activities as identifying employee-training needs, designing annual training plans, devising training objectives, choosing delivery methods, implementing training programs, evaluating training results, and documenting training records. As an organizational subsystem (Goldstein, 1993), training must be closely coordinated with overall business strategy and the activities of line departments. Therefore, setting up a specific department within a firm to organize and implement employee training and development may result in more effective training.

Twenty-seven firms (33.8%) in the better training-effectiveness group responded “yes” to the question of whether they had set up a unit or department in charge of training affairs, while only eight firms (20.0%) in the worse training-effectiveness group did so. The proportion of firms establishing an independent training unit is significantly lower in the worse-effectiveness group than in the better one. This finding implies that establishing a specific department responsible for training does have a positive impact on training effectiveness. However, before taking action on this finding, an SME should first conduct a careful cost-benefit analysis to determine whether it is large enough to reap economies of scale from establishing a separate unit responsible for training.

We may also expect the size of the training budget to be related to training effectiveness. The present study shows that the average annual training expenditure per employee for the better training-effectiveness group was US\$182, higher than the US\$138 spent by the worse training-effectiveness group. However, the difference between the two amounts was not statistically significant. Another important indicator is the percentage of total payroll spent on training. The mean percentage for this indicator was 0.93% for the better training-effectiveness group and 0.84% for the worse one, although the difference was not significant. One possible explanation why no strong positive relationship emerged between training expenditure and training effectiveness is the way that training expenditure was calculated in this study. Specifically, the cost of maintaining an independent training staff, which was found to be more prevalent in the better training-effectiveness group, was not factored into the total cost of training. This practice would obviously place a downward bias on training expenditures incurred by larger firms, those, which are likely to spend the most on training, and thereby weaken the statistical relationship between training expenditure and training effectiveness.

In a comparison with training expenditures in other countries (Lynch, 1994), this study found that the percentage of total payroll spent on average by firms of Chinese Taipei on training exceeded that of Japanese firms (0.4%) and roughly approximated the average percentage spent by Canadian firms (0.90%). However, the 0.93% of payroll expended by the average firm of Chinese Taipei on training was well below the 1.8% spent by the typical firm in the United States (including large firms), 1.8% in West Germany, 1.5% in the Netherlands, and 1.7% in Australia. The percentages for these other countries were obtained by surveys taken ten to 15 years ago (1984-89), and we may expect that in the interim the gap in training expenditure between Western firms and SMEs of Chinese Taipei have, if anything, widened even further.

This study found a statistically significant relationship between the percentage of employees that received training and training effectiveness ($p < 0.1$). Firms in the better training-effectiveness group reported that 45.7% of their staff had received some type of training in 1998, versus 36.3% for the worse group. Differences were also reported according to position and job function. In the better firms, managers and supervisors received an average of 33.5 hours of training in 1998, professional and technical employees 32.4 hours, and clerical and manual workers 20.8 hours, respectively. The corresponding figures for firms in the worse group — 27.2, 22.0, and 14.2 hours — were considerably lower. However, the only job position to show a statistically significant difference ($p < 0.1$) in training time across the two types of firms was that of professional



and technical employee. Data used in this study indicate that the extent of training coverage and emphasis on technical training are closely related to training effectiveness, especially in the manufacturing sector.

MANAGING THE TRAINING PROCESS AND ENHANCING TRAINING EFFECTIVENESS

The training process includes such items as needs assessment, the setting of goals and objectives, the delivery of training services, the evaluation of results, and the coordination of training activities with other HRM functions. All of these steps are essential to the success of a training program.

Assessing the need for training is particularly important, because if this is not done an organization cannot be assured that the right type of training is being provided to its employees. As Table 2 indicates, there is a significant positive relationship between needs assessment and training effectiveness ($p < 0.1$). About 70% of the SMEs in the better training-effectiveness group had conducted needs analysis, while only 64.0% in the worse group had done so.

Training objectives provide a link between needs and results, helping to identify the type of instruction required in order closing performance gaps. Training objectives also serve as benchmarks against which to evaluate progress achieved in the realization of organizational goals. This study finds a significant difference ($p < 0.05$) between the proportion of firms in the better training-effectiveness group that designate training objectives (75.6%) and that in the worse group (57.8%) that do so. The implication is that firms that have a clear vision of their training objectives and know for what purposes training is being provided are more likely to achieve better training effectiveness.

This study does not find a significant relationship between results evaluation and training effectiveness, even though firms in the better training-effectiveness group are more likely to evaluate the effectiveness of their training programs than those in the other group are. However, the proportion of firms that submit the results of training evaluation to higher-level management is markedly greater ($p < 0.01$) in the better training-effectiveness group (78.5%) than in the worse one (48.8%). Similarly, the practice of applying the results of training evaluation to other HRM functions (promotions, job assignments, and the determination of compensation) is much more common in the better group (38.7%) than in the worse one (14.3%). This finding suggests that while there may not be a strong linkage between the evaluation of training results and training effectiveness, the manner in which SMEs employ evaluation results may have an important impact on the success of their training programs.

CATEGORIES OF TRAINING AND DELIVERY METHODS

There are three major venues for the delivery of training services: on-the-job, on-site off-the-job, and off-site off-the-job. Schuler and Jackson (1996) suggested that decisions concerning delivery sites and methods might be constrained by the type of learning that is to occur, as well as by considerations of cost and time. Table 2 lists three

venues and 14 delivery methods employed by firms participating in this study. Respondents were asked to report the frequency with which their organizations adopted each method, with 1 standing for “never,” 2 for “seldom,” 3 for “sometimes,” 4 for “often,” and 5 for “always.” Also presented are mean frequency scores and ANOVA test results for firms in the better and worse training-effectiveness groups.

On-the-job training allows trainees to learn how to perform their jobs under direct supervision. This type of training can be implemented by using such methods as apprenticeship training, job rotation, and assignment to a task-force team. Data indicate that SMEs in the better training-effectiveness group consistently employ all three methods of on-the-job training more frequently than do those in the worse group. However, the only statistically significant difference between the two groups was found to occur in the frequency with which they adopted the task-force-assignment method.

Many methods can be used to deliver training at the workplace but off the job, ranging from the traditional lecture to high-tech Internet learning. Firms in the better training-effectiveness group were seen to employ all nine off-the-job-training methods more frequently than did those in the other group. Moreover, there were found to be statistically significant differences in the frequency with which these groups employed all nine methods, with the exceptions of case studies and Internet teaching.

Two common methods by which business firms of Chinese Taipei deliver off-site training services to employees are enrolling them in college courses part-time and sending them to participate in workshops overseas. Since off-site training tends to be quite expensive, SMEs of Chinese Taipei employ it far less frequently than on-the-job or on-site training. Firms in the better training-effectiveness group are more likely to use both of the off-site training methods mentioned above than are firms in the worse group. This implies that the breadth and depth with which firms apply methods of delivering training are strongly and positively related to training effectiveness.

MANAGEMENT SUPPORT AND TRAINING EFFECTIVENESS

SME owners and managers play a pivotal role in making decisions relating to the provision of formal, job-related training (Matlay, 1996). The literature suggests that owners and managers of smaller firms tend to demand less training than those of larger ones do (Westhead and Storey, 1997). One possible explanation of this tendency is that time-related pressures and the high direct cost of training may make SMEs reluctant to invest in training or to allow their employees to attend training courses. If top management does not provide support for or undertake a commitment to employee training, a firm may focus little attention on training activities. We may thus expect a strong correlation to exist between the degree of management support for training and training effectiveness.

The present study poses two questions designed to evaluate the degree of management support for training. The first one asks whether line managers in a respondent firm encourage subordinates to participate in training programs. Possible response range from 1, “strongly disagree” to 5, “strongly agree.” The second question



asks whether, during business downturns and economic recessions, top management usually gives priority to cutting training expenditures in an effort to reduce operating costs. Responses to this question are: 1, “strongly agree”; 2, “agree”; 3, “it is hard to say”; 4, “disagree”; and 5, “strongly disagree.” (Note that the order of ranking responses is the reverse of that used for the previous question.) The mean score for responses to these two questions is used to indicate management support for training. The mean score for firms in the better training-effectiveness group (3.69) is markedly higher than that for firms in the worse group (3.26), and an ANOVA test indicates that the difference between the two is significant at $p < 0.01$. Thus management support is shown to be strongly related to training effectiveness.

RESEARCH IMPLICATIONS

The findings of this study have important implications for both academic researchers and training specialists. Previous studies attempted to estimate the impact of training on firm performance but did not achieve consistent findings. One of the major reasons for this inconsistency is the widely varying definition of training that these studies employed. Many of them measured only the amount of training provided. However, the provision of training may vary in the types of knowledge or skills conveyed, duration, numbers and percentages of employees covered, and modes of delivery. As a result of such variances, some types of training are more effective in improving individual firm performance than others improve. This study presents evidence that firms that have achieved greater effectiveness in training tend to have a more sophisticated training organization and training system than do those firms whose training methods have been less effective. The implication is that future studies seeking to investigate the relationship between training and performance should take special care in measuring training effectiveness. Simply determining whether formal training is offered and the amount of it that is provided to employees is not adequate, since poor training programs, even those that provide many hours of instruction, may not benefit individual employees or firm performance at all.

To managers and training specialists in SMEs, the findings of this study provide clear direction and guidance. Maintaining a separate unit responsible for training affairs helps improve training effectiveness. However, owners and managers of SMEs should evaluate the costs and benefits of establishing such an independent training unit before they take that step. Amid intensifying global competition and rapid technological change, expanding the proportion of the work force that receives training and increasing training hours, especially for professional and technical staff, are also conducive to better training effectiveness.

The training process in firms that have achieved better training effectiveness is more comprehensive than that in firms that have been less successful in training. In general, a firm that has conducted needs assessment, devised training objectives, submitted training results to management, and coordinated training activities with other HRM practices is more likely to achieve success in training than are those firms that have not made such efforts. For this reason, instituting a more comprehensive training process in SMEs is strongly encouraged. Also recommended is that training specialists should seek

to improve their knowledge of various training delivery methods and apply that knowledge broadly and frequently in implementing training programs.

Finally, but certainly not least important, are the commitment and support of top management for training. This study reveals a very strong relationship between management support and training effectiveness. With the size of the training budget, number of training hours, and proportion of training coverage all varying directly with the degree of management support, support from management may be the most critical element of all in achieving training effectiveness.

LIMITATIONS

The training-effectiveness indicators used in this study are based on subjective responses to questions about the impact of training on enhancing product or service quality, work motivation, ability, knowledge, and so on. A few scholars believe that subjective measures may be as reliable as more objective indicators (Dess & Robinson, 1984). However, since objective indicators are believed to achieve greater accuracy, it is hoped that future studies, time and resources permitting, will employ both subjective and objective measures of training effectiveness, so that comparisons can be made between the two.

A second limitation of this study is that a causal relationship between methods of delivering training and training effectiveness has not been established. Since the data used are cross-sectional, the only conclusion that can be made here is that better training systems are strongly correlated with training effectiveness. Longitudinal data must be collected and studied over the long term, or comparison made with an appropriate control group (Westhead and Storey, 1997), if we are to determine whether there is a causal linkage between comprehensive training systems and improved business performance. Furthermore, even if improvement in training systems leads to more effective training, how can we be certain that the benefits of better training justify its cost? Utility analysis may be helpful in answering such questions. Finally, due to the limited size of our sample, conclusions reached by this study may not be entirely applicable to very small manufacturing firms or service-sector firms in Chinese Taipei.



REFERENCES

- Cambridge Small Business Research Centre (1992). *The State of British Enterprises: Growth, Innovation and Competitive Advantage in Small- and Medium-sized Firms*. Cambridge: University of Cambridge.
- Cosh, A. Duncan, J., and Hughes, A. (1998). *Investing in Training and Small Firm Growth and Survival: An Empirical Analysis for the UK 1987-97*, DfEE Research Report RR36, HMSO, London.
- Dess, Gregory G. & Richard B. Robinson, Jr. (1984). Measuring organizational performance in the absence of objective measures: The case of privately held firms and conglomerate business units. *Strategic Management Journal*, 5: 265-73.
- Kitching, J. (1998), 'Book Review: Investing in Training and Small Firm Growth and Survival: An Empirical Analysis for the UK in 1987-97'. *International Small Business Journal*, 17(1), pp. 110-113.
- Marshall, J. N., Alderman, N., Wong, C., and Thwaites, A. (1995). "The Impact of Management Training and Development on Small- and Medium-sized Enterprises," *International Small Business Journal*13(4), 73-90.
- _____ (1993). "The Impact of Government-assisted Management Training and Development on Small- and Medium-sized Enterprises in Britain," *Environment and Planning C*, 11(), 331-348.
- Lynch, L. M. (1994). 'Introduction. In Lynch, L. M. (Ed), *Training and the Private Sector: International Comparisons*. Chicago: The University of Chicago Press, pp. 1-24.
- Matlay, H. (1996). 'Paradox Resolved? Owner/Manager Attitudes to, and Actual Provision of, Training in the Small Business Sector of the British Economy'. *Proceedings of the 19th ISBA National Small Firms Policy and Research Conference*, November 1996, Birmingham.
- Marshall, J. N., Alderman, N., Wong, C., and Thwaites, A. (1995). "The Impact of Management Training and Development on Small- and Medium-sized Enterprises," *International Small Business Journal*13(4), 73-90.
- Vickerstaff, S. (1992), 'The Training Needs of Small Firms'. *Human Resource Management Journal*, 2(3), pp.1-15.
- Westhead, P., and Storey, D. (1997). *Training Provision and the Development of Small and Medium-sized Enterprises*, DfEE Research Report No. 26, DfEE/HMSO.
- _____ (1996). "Management Training and Small Firm Performance: Why is the Link So Weak?" *International Small Business Journal*, 14(4), 13-24.
- Wynarczyk, P., Watson, R., Storey, D., Short, H., and Keasey, K. (1993). *Managerial Labour Markets in Small- and Medium-sized Enterprises*. London: Routledge.

Table 1. Results of Cluster Analysis of Training Effectiveness

Aspects of training effectiveness	Cluster mean		
	Better Training- Effectiveness Group (N=84)	Worse Training- Effectiveness Group (N=46)	F- Value
1. Enhanced product or service quality	3.96	3.00	107.6***
2. Improved work motivation	3.81	3.09	40.9***
3. Reduced turnover rate	3.31	2.70	23.2***
4. Improved ability and knowledge	4.17	3.50	48.1***
5. Improved operational safety	4.07	3.37	51.6***
6. Decreased materials wastage	3.70	2.85	58.5***
7. Improved profitability	3.55	2.76	47.9***
8. Increased work efficiency	3.88	3.00	63.1***
9. Increased job satisfaction	3.77	2.91	68.9***
10. Reduced absenteeism	3.42	2.59	47.1***

Note: The scale ranging from “strongly agree (5)” to “strongly disagree (1)”.

*** : p<0.01



Table 2. Mean Frequency of Adoption of Training Delivery Methods by Two Training-Effectiveness Groups

Types of training and delivery methods	Better Training-Effectiveness Group	Worse Training-Effectiveness Group	F-Value
On-job-training			
Job rotation	2.79	2.57	1.39
Apprenticeship training	2.94	2.86	.09
Assigning trainee as member of task force	3.34	2.32	28.68***
On-site off-job-training			
Lecture	3.18	2.67	5.84**
Group discussion	3.27	2.89	4.12**
Role playing	2.27	1.86	5.55**
Sensitivity training	1.88	1.44	7.38***
Videotapes	2.60	2.05	7.90***
Simulations	2.50	2.09	5.18**
Case study	2.91	2.64	1.83
Computer software	2.56	1.95	8.30***
Internet teaching	1.84	1.64	1.39
Off-site off-job training			
Part-time college courses	2.10	1.64	6.47***
Overseas workshops	2.13	1.41	15.53***

Note: The scale is scored as 1 for “never,” 2 for “seldom,” 3 for “sometimes,” 4 for

“often,” and 5 for “always.” ** : $p < 0.05$; *** : $p < 0.01$.

**RESEARCH OF CORE COMPETENCE FOR R&D PERSONS AT
IC COMPANIES IN CHINESE TAIPEI**

Jon-Chao Hong
Department of Industrial Education
National Taiwan Normal University (Chinese Taipei)

Ai-Ching Tseng
Department of Industrial Education
National Taiwan Normal University (Chinese Taipei)

RESEARCH OF CORE COMPETENCE FOR R&D PERSONS AT IC COMPANIES IN CHINESE TAIPEI

ABSTRACT

This research extracts some essences of Intelligence Capital(or IC. here after) and refers them to aspects of key competence currently defined or used by different organization. Based on three developed IC indices, a theoretical and practical study aimed at the feature of technical creativity and key competence of R&D person at high-technology, especially IC(Integrated Circuit) companies has been followed. In addition, employees' education distribution from five high-tech enterprises(TSMC, Weltrend, Holtek, Realtek and Vanguard International Semiconductor) in Chinese, Taipei, were especially ranked at this research, as become the background of later proposed checklist, which will serve the purpose of key competence assessment for R&D personnel at Taiwan's high-tech enterprises particularly. At last, it is also suggested that enterprise should implement a set of standardized assessment to measure R&D person's key competence since recruiting. Thereafter, it consequently benefits, such as, R&D person recruiting efficiency, later technology driven speed, and may even reducing engineer resign rate , eventually keeps enterprise with good competition.

KEY WORDs: high-tech enterprise ? core competence ? attitude? intellectual agility



INTRODUCTION

In current day, high-tech industry receives dramatic competition just as area, R&D human resource becomes especially important factor for enterprises in promoting their competition. So far, there seems no suitable checklist for high-tech enterprise to evaluate what type of core intelligence should R&D human possess? This research, therefore, focus on subjects like, how enterprise analyze and evaluate core intelligence of their R&D person? What correlation exists between core intelligence and their future achievement? Are there some models or instruments can be used during recruiting R&D people? All subjects are points, which need to be concerned for all high-tech enterprises in Chinese, Taipei.

How enterprise recruit new R&D person efficiently become more important especially in economic recession time. For example, twenty years ago a sales manager of Casio left. Cost, including training and possible trouble cause of task disconnection, was equal to \$185,000, while ten years later, it jumped to \$418,000. In addition, the cost of absence, American enterprise needs at least waste \$350,000,000 and more annually. Similar study at Chinese, Taipei also claims, cost at least NT1,500,000 for an electronic engineer quit out from high-tech enterprise. Besides that, many researches also point out that improper recruiting will increase human resource spending and other draw backs. Such as, employee resign, absence of illness, organization's bad work attitude, group counsel...etc.. Although engineer resign rate sometime is helpful for organization's human resource bringing up to date, it also costs a lot (Kao & Chan, 1999).

This research extracts some essences of Intelligence Capital(or IC. here after) and refers them to the aspects of key competence currently defined or used by different organization. Based on three developed IC indices, a theoretical and practical study aimed at the feature of technical creativity and key competence of R&D person at high-tech, especially IC(Integrated Circuit) companies have been followed. In addition, employees' education distribution from five high-tech enterprises(TSMC, Weltrend, Holtek, Realtek and Vanguard International Semiconductor), were especially ranked at this research, as become the background of later proposed checklist, which will serve the purpose of key competence assessment for R&D personnel at high-tech enterprises particularly. At last, it is also suggested that enterprise should implement a set of standardized assessment to measure R&D person's key competence since recruiting. Thereafter, it consequently benefits, such as R&D person recruiting efficiency, later technology driven speed, and may even reducing engineer resign rate , eventually keeps enterprise with good competition.

THE RESEARCH OF HIGH-TECH ENTERPRISES

Technology development and innovation has made economic evolution at this century significantly grown. It is more obvious at high-tech enterprises in Chinese, Taipei have created major economic efficiency at recent years. To begin with, high-tech enterprise at this research is first confined by four following dimensions (Ministry of Economic, 1998):

- Property: 1. New technology. 2. The technology with pioneering, international competition, the development of technology, and the improvement of marketing.
- Profile of enterprise: 1. The ratios of R&D cost in total production; 2. The ratios of employees' occupation; 3. The ratios of R&D cost and the technical levels of employees.
- Product of enterprise: 1. The amount of patents; 2. The revenue rate on innovated product sales; 3. The complexity of product and innovation.
- Overall: 1. High-tech employees, the ratios of R&D cost in sales quota, and the global market share; 2. The employee rates, amount of production, dependence, marketing, knowledge degree, power of production, related efficiency, the cost of R&D, the problem of money concentration, land, water resource, energy spend and pollution.

High-tech companies are encouraged with incentive from government and growth in a steady speed in Chinese, Taipei. The current condition trends to be in a mature period. To further march to new target of forming technology island. ? How to increase enterprise's R&D competence? becomes one of the most important strategy of enterprises in the future. Analyze from employees' condition in three consecutive years. Some common features, such as high education degree, young, and short working experience are found.

Profile of Employees (such as working department, average age, and average service duration).

Employees at the five companies mentioned before, including TSMC, Weltrend, Holtek, Realtek, and VIS, have the common characteristics of high schooling, young, and little working experience. We would get ideas for the characteristics of the employees from the annual report of these businesses(TSMC, 1998; Weltrend, 1998; Holtek, 1998; Realtek, 1998; VIS, 1998). (TSMC, 1998; Weltrend, 1998; Holtek, 1998; Realtek, 1998; VIS, 1998).

Table 1-1 -The Number of Employees (by position category) at TSMC

Year	Direct Employees	Engineering Division	Management Division	Total
1995	1,578	1,372	462	3,412
1996	1,830	1,715	572	4,117
1997	2,712	2,200	681	5,593

**Table 1-2-The Number of Employees at TSMC**

<i>Year</i>	<i>Total Number</i>	<i>Average Age</i>	<i>Average Service Duration</i>
1995	3,412	28	3.3
1996	4,117	28	3.3
1997	5,593	28	3.3

Table 2 -The Number of Employees (by Division Category) at Weltrend

<i>Year</i>	<i>Administration /Finance</i>	<i>Sales</i>	<i>Technique</i>	<i>Total</i>	<i>Average Age</i>	<i>Average Service Duration</i>
1995	6	8	39	53	30	2.6
1996	7	7	42	56	31.5	3.5
1997	6	7	48	62	32.5	4.2

Table 3- The Number of Employees(by Division Category) in Holtek

<i>Year</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
<i>Engineer</i>	454	609	894
<i>Administration/ Sales</i>	171	201	187
<i>Technician</i>	333	340	440
<i>Driver/Guard/Janitor</i>	12	12	12
<i>Total</i>	970	1162	1533
<i>Average Age</i>	28.5	29.7	30.6
<i>Average Service Duration</i>	2.8	2.9	2.8

Table 4 -The Number of Employees in Realtek

<i>Year</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
<i>R&D</i>	117(54%)	109(54%)	118(54%)
<i>Administration/ Sales</i>	76(35%)	71(35%)	74(34%)
<i>Quality Controlling</i>	24(11%)	23(11%)	27(12%)
<i>Total</i>	217	203	219
<i>Average Age</i>	31	31	32
<i>Average Service Duration</i>	4	4	4

Table 5 - The Number of Employees (by Division Category) in VIS

<i>Year</i>	<i>1995</i>	<i>1996</i>	<i>1997</i>
<i>Direct Employee</i>	1160	1007	680
<i>Indirect Employee</i>	731	581	361
<i>Total</i>	1891	1588	1041
<i>Average Age</i>	29.2	28.8	29.8
<i>Average Service Duration</i>	0.82	1.34	2.7

There are findings can be extracted from above tables. First, the average age of employees at these companies are between 28 and 32.5 year-old, and have work experience from 0.52 to 4 years. Second, the population of engineers is higher than that administrative staff. Except that with professional context, the R&D of the technology needs engineers with the ability throwing themselves into product improvement and with unique creative thinking ability. From this point, it can be found that if employees with product improvement ability or potentials or ability to do the R&D job is important in the high-tech enterprises.

Profile of Employees' education

Employees at the five companies mentioned before, including TSMC, Weltrend, Holtek, Realtek, and VIS, have the common characteristics of high schooling, young, and little working experience. We would get ideas for the characteristics of the employees from the annual report of these businesses (TSMC, 1998; Weltrend, 1998; Holtek, 1998; Realtek, 1998; VIS, 1998).

Table 6 -The Ratio of Employees' education background at TSMC

<i>Year</i>	<i>Doctor Degree</i>	<i>Master Degree</i>	<i>University/ Collage Degree</i>	<i>Senior High School</i>	<i>Under Senior High School</i>	<i>Total</i>
<i>1995</i>	1.6	15.3	38.7	43.3	1.1	100
<i>1996</i>	1.8	19	37.8	41.3	0.1	100
<i>1997</i>	1.8	20	37.6	40.5	0.1	100

Table 7-The Ratio of Employees' education background in Weltrend

<i>Year</i>	<i>Doctor Degree</i>	<i>Master Degree</i>	<i>University/ Collage Degree</i>	<i>Senior High School</i>	<i>Total</i>
<i>1995</i>	1	5	39	8	53
<i>1996</i>	1	5	42	8	56
<i>1997</i>	2	5	42	12	61

**Table 8 - The Ratio of Employees' education background at Holtek**

<i>Year</i>	<i>Doctor Degree</i>	<i>Master Degree</i>	<i>University/ Collage Degree</i>	<i>Senior High School</i>	<i>Under Senior High School</i>
1995	0.1%	12.27%	54.12%	32.47%	1.03%
1996	0.6%	17.9%	53.53%	27.19%	0.77%
1997	0.65%	18.4%	56.88%	23.42%	0.65%

Table 9- The Ratio of Employees' education background at Realtek

<i>Year</i>	<i>Doctor/ Master Degree</i>	<i>University/Collage Degree</i>	<i>Senior High School</i>
1995	19%	60%	21%
1996	20%	58%	22%
1997	29%	51%	20%

Table10 - The Ratio of Employees' education background in VIS

<i>Year</i>	<i>Doctor Degree</i>	<i>Master Degree</i>	<i>University/ Collage Degree</i>	<i>Senior High School</i>	<i>Under Senior High School</i>
1995	45	214	418	356	8
1996	57	369	626	528	8
<i>Growing Rate</i>	26.6%	72.4%	50%	48.3%	0
1997	63	428	771	621	8
<i>Growing Rate</i>	0.1%	16%	23%	17.6%	0

In the beginning of high-tech enterprises, the original main human power is graduated from senior high school, college, and university. But it appears from above data that the trend is more and more needs to recruit more bachelor, master, and doctor to join this working field. Because R&D of high-tech company requires not only professional knowledge but also the ability in improving products and creativity. Therefore, high-tech industries value the importance of employees' potential talent in product improvement or in R&D. The developments of human resources mainly depend on the trend of enterprises' need; it makes business thriving and vigorous when raising the employees' capabilities and cultivating the core competency of business.

THE CORE COMPETENCE OF THE R&D HUMAN RESOURCE IN HIGH-TECH ENTERPRISE

The flourishing achievement on economical development in past 30 years in Chinese, Taipei have gained the international recognition. In recent years, because the prosperous development on industrial enterprises, many talent persons from ITRI (Industrial Technology Research Institute, a high-tech research institute sponsored by government.) were recruited to the private enterprises. The R&D capabilities have been improved(ITRI, 1998).

At the meantime, besides the output of semiconductor are the fourth place in the world, computer hardware get the third place, and many products get the first place of market share(ITRI, 1998). These achievements are contributed by the efforts of R&D staff and other members in the high-tech industries.

There are still several expectations for the R&D developments at the high-tech enterprises in Chinese, Taipei. So it is important to explore the core competence and its related theory of the R&D human resource in high-tech enterprise. It is going to be discussed by the following three dimensions, first is core competence, second is attitude, and the third is intellectual agility:

1. *The core competence*: Competence generates value through the knowledge, skills, talents and know-how of employees. And with the core competence, enterprise could surpass others' competition and get a new market share. The core competence, in this classification, indicates the technical or academic knowledge, which is belonging to enterprise's property. It represents some part of competition, but not all. One kind of core competence can create many kinds of product. One kind of product could also be created by many kinds of core competence. Only the company holder can decide which kind of monetary property or realty is belong to core or non-core property (Roos, et al., 1997). For example,
 - a) At VIS (Vanguard International semiconductor, 1998), the core competencies are the process of product development and manufacturing of DRAM.
 - b) The competitive advantages of TSMC is R&D for production process(TSMC, 1998) . The core competence of TSMC is on logical memory, advanced process module, CAD, and mask process, ...etc.
 - c) Holtek focuses on logical IC products (54.3%)(Holtek, 1998) . The rest of its products includes communication IC (9.2%), peripheral IC (8.7%), consumer electronic IC (36.4%), memory IC (12.5%), and wafer foundry (33.2%). Holtek's expertise is at diverse technologies of process, such as photo-electronic, high-voltage, special low-voltage, and non-volatile...etc. R&D for IC, Memory Process, 3C Integration, and System-on-wafer...etc. are all Holtek's core competence.
 - d) Weltrend is doing business in the R&D, production, testing and sale of the products of digital & analogue combined application-specific IC (ASIC), Digital



IC and Analogue IC (Weltrend, 1998). Weltrend's products include Peripheral ICs, Consumer Electronics ICs, and ASICs...etc. Therefore, the core competency of Weltrend is focused on R&D and testing of electronic products.

- e) Realtek is developing, manufacturing and selling the following products: consumer electronics ICs, peripheral & multimedia ICs, other ASIC and related application software(Realtek, 1998,) . Table 11 shows the sales percentage of all products and annual growth of Realtek in 1997. It also indicates the core competence of Realtek.

Table 11 -Realtek 1997 Annual Sales & Growth Report (Unit: NT\$ 1,000)

<i>1997 Net income</i>	<i>Consumer electronics Div.</i>	<i>Peripheral Multimedia Div.</i>	<i>& Communication & Network Div.</i>
1,835,728	545,743	535,057	754,928
Sales (%)	29.8%	29.1%	41.1%
Growth (%)	22.5%	2.4%	40.3%

From above tables, it appears that the core competence can not be separated from enterprise's competition. And it also can be concluded by some examples of indicators in this competence field, such as :

- Percentage of company employees holding an advanced degree
 - IT literacy
 - Hours of training per employee
 - Average duration of employment
2. *The behavior and work attitude:* knowledge and skills are not everything. Companies need employees who are capable and willing to use their skills and abilities to the advantage of the company and who can motivate the whole company to reach its goal.

Attitude, therefore, is a 'soft' component. The company has very little impact on this side. Attitude depends mostly on personality traits and therefore can be improved very little by company efforts. Attitude, primary included by three factors: Motivation, behavior, and conduct, covers the value generated by the behavior of the employees on the workplace(Roos, et al., 1997). And it also can be concluded by some examples of indicators in this attitude field, such as:

- Communicated with others very well
- Get along with others very well
- With work empathy
- Explore difficult problem with comrades to solve the problem

McKinsey and Procter & Gamble companies believe that the work attitude is at least as important as competence, and both have known to hire university graduates with non-specialist degrees (such as architecture, physics or humanities) and give them specific training afterwards: thus, they select an attitude in the candidates and then create the competencies.

3. *Intellectual agility*: In a fast changing world like ours, the ability to apply knowledge in very different situations, as well as the ability to innovate and transform ideas in products, is crucial to the success of a company. Intellectual agility indicates the ability to see common factors in two distinct pieces of information and link them together, and the ability to improve both knowledge and company output through innovation and adaptation.

Intellectual agility is tightly linked to competence, more so than attitude is. If competence is the content, intellectual agility is the ability to use the knowledge and skills, building on it, applying it in practical contexts and increasing it through learning. Intellectual agility can include the following wits, such as: innovation, imitation, adaptation, and packaging. Especially, innovation can create an ability on the basis of exist knowledge and push an enterprise successfully into a multiple goals.

Intellectual agility also has some examples of indicator, such as :

- Savings from implemented suggestions from employees
- New solutions/ products/processes suggested
- Background variety index (individual and group level)
- Company diversification index

CONCLUSION & SUGGESTION

Conclusion

As we know that the most popular IQ tests in the whole world are Binet & Wechsler (Wechsler, 1958). It's for measurement and appraisal of adult intelligence. Since the evaluation tools were the product forty years ago. It also convinced us those tests are improper for test high-tech R&D person living in this high-tech era. Many scholars also doubt about the problems of intelligence recent years, such as, if the test with discrimination to different tribes, culture, educated or not ...etc.. (Hallahan & Kauffman, 1991). So the conclusion is that there is no such a proper instrument for measuring high-tech R&D person.

The core competence is composed by lots of knowledge skills and technologies. And with core competence, the enterprise could surpass comrade's competition and get into a new market. From above exploration it is found that the core competence can not be separated from enterprise's competition. And only the company holder can decide which kind of monetary property or realty belongs to core or non-core property.



Conclusion is made after exploring and studying on R&D human resource of several high-tech enterprises and related core competence theory. It is firm if the enterprise can have a set of instrument to evaluate R&D people's core competence at the recruiting stage. It will help not only upgrade high-tech enterprises' recruiting efficiency, but also promote R&D person's technical creativity and enterprise's competition at market.

Suggestion

This research has explored the core competencies of the R&D human resource in high-tech enterprise. It's found that the key essences to impact the development of enterprise is if their employee's ability is equal to the core competence which is needed by the company. Therefore, It can be concluded and also suggested the items of the checklist for the core competence of the R&D human resource in high-tech enterprise after synthesizing the above theory and some high-tech company's employee performance assessment forms. The following lists five directions: The first is professional attitude and enthusiasm, the second is professional knowledge and ability, the third is communication/team work/ work with others effectively, the fourth is justification and problem solving, and the fifth is innovation and improvement. The following is items of the checklist for the core competence of the R&D human resource in high-tech enterprise:

1. Professional attitude and enthusiasm

- Predicting and understanding the needs of the business, and managing it carefully.
- Aiming actively to the content of business which is provided by the company, giving it an evaluation and according to the result, takes an improvement action plan.
- Planning and participating every communication and coordination actively between tasks, smoothing the work proceeding.
- Joining TQM activity aggressively, and applying TQM's concept at work to promote the quality of the task.
- Demanding self to reach the request of work quality strongly.
- Obeying the work standard when the work is proceeding.
- Valuing and protecting the customer's Intellectual Property Right (IPR).

2. Professional knowledge and ability

- Studying consecutively related professional knowledge and skills and applying it properly in order to reach the best performance.
- Owning professional knowledge and skills to adapt current work needs.
- Owning the ability of project management.

- Being able to definitely understand and develop the skills which can reach the needs of task.
- Being able to actively take timing, not to need to be pushed or waked, can keep time management and accomplish task of his part with alignment.

3. munication/teamwork/effectively work with others

- Being able to coordinate with other related department/person and make work smoothly proceeding.
- Being able to quickly learn how to do a new additional task and also can discuss with comrade about the difficult task and its steps.
- Having different ideal from comrades, still respect them and effectively work with different personality people to accomplish the achievement.
- Cooperating through teamwork, with the most effectively route to reach the achievement.

4. Justification and problem solving

- Analyzing actively which task should be improved, reasonably explaining and proposing a recommendation.
- Being able to apply multiple thinking method, reasonably justifies the source of problem, and finds the best strategy to solve the problem.
- Being able to perceive potential problem, prevents it before and after in advance.
- Being able to find the best idea to solve problem in an extremely short time.

5. Innovation and improvement

- Being able to improve and apply tried concept and method to solve problem under a new additional task condition.
- Being able to introduce the concept of new knowledge and skill into available program.
- Having the aspect which is over imagined for work innovation and improvement., and it really benefits to the task improvement.
- Being able to understand the same enterprises' activities and working methods, and can propose a more innovated method.

R&D person is contributing more and more influence to life of enterprise in this technology booming era. Enterprise needs ceaseless innovation to support highly competitive market. The cultivation of R&D person can not be accomplished in one day or one night. However, without a standardized assessment for enterprise's recruiting, the



loss is not only enterprise can not find suitable R&D person but also review. Sometimes hiring wrong person might badly retard progression. Therefore, how to aim at the feature of technical creativity and key competence of R&D person at high-tech and excite teamwork's cooperation to generate creative ideas or inventions with performance index are main target of this research.

At last, this research recommends a set of assessment tools to measure applicants' key competence when they are recruited and help enterprises select suitable R&D persons. It will benefit high-tech R&D recruiting efficiency, later technology driven speed, and may even reducing engineer resign rate, eventually keeps enterprise with good competition.

REFERENCES

- Holtek Semiconductor, (1998), 1997 Annual Report for Holtek.
- The institute of science education of National Science Council(1998). The conference proceeding of creativity, intelligence, and thinking. Taipei: Science Education department of National Taiwan Normal University. International Technology Research Institute,(1998),1997 Annual Report for ITRI.
- Kao, G. H. & Chan,Y.Z.(1999). The enterprise should pay high for improper recruiting: The cost of human resource highly jump, for an electronic engineer's example, the cost for leaving is about NT1,500,000. Printed in *Free newspaper*, 1999/3/6.
- Ministry of Economic(1998). *The technology of enterprises' report 1997*. Taipei: The technology institute of Ministry of Economic.
- Realtek Semiconductor, (1998), 1997 Annual Report for Realtek.
- Roos, J.&G., Dragonetti, N.C., & Edvinsson, L.(1997). *Intellectual capital: Navigating the new business landscape*. London: MacMillan.
- Tidd, J & Trehwella, M.J.,(1997),Organizational and technological antecedents for knowledge acquisition and learning, *R&D Management*, 27(4),358-375.
- TSMC Semiconductor,(1998), 1997 Annual Report for TSMC.
- Vanguard International Semiconductor(VIS)(1998). 1997 Annual Report for VIS.
- Wechsler, D.(1958). *The measurement and appraisal of adult intelligence*(4th ed.). Baltimore: Williams & Wilkins.
- Weltrend Semiconductor, (1998), 1997Annual Report for Weltrend.

**MALAYSIA'S FINANCIAL CRISIS AND CONTRACTION IN
HUMAN RESOURCE:
POLICIES AND LESSONS FOR SMIS**

**Rujhan Mustafa
Faculty of Economics and Business
University Malaysia Sarawak (Malaysia)**

**Shazali Abu Mansor
Faculty of Economics and Business
University Malaysia Sarawak (Malaysia)**

MALAYSIA'S FINANCIAL CRISIS AND CONTRACTION IN HUMAN RESOURCE: POLICIES AND LESSONS FOR SMIS

ABSTRACT

The economic crisis, which has recently occurred in Malaysia, has affected not only the economy in aggregate, but also to the labor market. The 6.7 per cent contraction of the economy in 1998 caused the employment growth to slacken and the unemployment rate to soar to 3.9 per cent. The 3.9 per cent unemployment rate was of great concern, as rising unemployment had implications on efforts to reduce poverty. The crisis has also resulted in the closure of some SMIs enterprises, particularly when tight monetary policies were implemented at the beginning of the crisis, causing disruption in operations and severe liquidity problems. The widespread of the crisis in Malaysia has triggered policy makers to immediately address the shortcomings pertaining to the labor market. The facilitating and regulatory role played by the Government in the labor market had eased tension among workers arising from the economic crisis. The harmonious industrial environment had in a way helped to expedite the economic recovery. The holistic approach by the government in addressing the labor issues incorporated both the demand and supply sides of the labor market. Accessibility of information is considered important, thus the government making it compulsory for employers to report any step taken that can give a signal to the labor market. In addition, policies designed during period of crisis involved the players in the market, the employers and employees. The holistic approach did not segregate policies according to sectors, ownership, gender or sizes of firms. Firms irrespective of the ownership functions and sizes are treated equally when addressing labor issues. Thus employees working in small and medium industries should not expect to receive better or lesser treatments when confronting economic crisis.



INTRODUCTION

The economic crisis which has recently occurred in East Asia, has affected not only the economy in aggregate, but also more important the labor market. Thus, this paper attempts to analyze the effect of the economic crisis on the labor market in Malaysia. The macroeconomic overview will be discussed in the first section, followed by manpower demand and supply, the issues of retrenchment and human resource contraction, and the current and future trends in retrenchment. After highlighting the structure and performance of the market, this paper proceeds with policy responses and conclusion. The case provided in this paper could provide lessons to small and medium industries (SMIs) in the developing countries.

MACROECONOMIC OVERVIEW

Before the Thai baht came under attack and was devalued in July 1997, the countries of East Asia were prosperous. By July 1997, however, the economies of East Asia suddenly experienced economic turmoil and began collapsing one after another. Since then, the crisis has spread from the currency to banking and financial sectors, and then to the real economy. It has affected giant corporations, medium to small enterprises and individual workers as well as governments. As consequences, banks and businesses collapsed, some government leaders were replaced, and millions of workers lost their jobs.

Perhaps the clearest and harshest examples of the effects of the crisis are in Indonesia's economic and social situation. The rupiah plunged by as much as 80 per cent of its value, and the stock market shed 50 per cent of its value. Per capita income has dropped from US\$1,100 in 1996 to US\$460 or less in 1998. Some 6.6 million workers have lost their jobs since the beginning of the crisis. It is estimated that about 30 to 45 per cent of the population living below the poverty line.

While in Malaysia, the Malaysian economy had experienced high economic growths for almost ten years. During 1988-1997 periods, the GDP grew at an average rate of above 8.0 per cent per annum.¹ The high growth rates for this period was accompanied by low rates of inflation, rising per capita income and reduction in the incidence of poverty. For the period January-July 1997, the CPI in Malaysia averaged 2.7 per cent, compared to 4.5 per cent in South Korea, 5.6 per cent in Thailand and 11.6 per cent in Indonesia.² The per capita income increased significantly in 1997.

From the human resource perspective, this high economic growth was accompanied by very low rates of unemployment. The unemployment rate in 1997 was only about 2.6 per cent. If this figure is to be compared with the unemployment rate in the Organization of Economic Cooperation and Development (OECD) countries, which was about 7.5 per cent, the Malaysia's unemployment status is considered to be at full employment level, as the 2.6 per cent accounted the natural rate of unemployment.

¹ Excluding the year 1992 with 7.8 per cent per annum.

² IMF, *International Financial Statistics*, Aug. 1998.

The financial crisis spread very quickly to the other regional economies. The crisis has spread from one country to another, and also extended beyond the Asian region, to Russia and Brazil, and the whole world. Having experienced 8.0 per cent economic growth for ten consecutive years, the contagion effect of the financial crisis that erupted due to currency devaluation in Asian countries spread to impact the Malaysian economy in mid 1997. It did not only adversely affected the real economy and weakened the financial sector, but also had some socio-economic implications to the nation.

The real Gross Domestic Product (GDP) registered a negative growth for the first time since 1985 beginning in the first quarter of 1998 with -2.8 per cent and further down to -9.0 in third quarter of 1998 (Table 1). This clearly shows that after 10 years of good performance, high economic growth began to slow down towards the end of 1997 with 7.7 per cent, slightly lower than the 8.6 per cent of the preceding year. The labor market was not being affected at the onset of the crisis as the unemployment rate maintained at 2.6 per cent in 1997 (Table 2).

Table 1: Quarterly GDP Growth Rate 1995-1998

	1995	1996	1997	1998	1999
1 st Q	10.1	6.8	9.2	-2.8	-1.1
2 nd Q	10.7	7.6	8.4	-6.8	4.1
3 rd Q	9.3	8.8	7.5	-9.0	
4 th Q	7.5	11.0	6.0	-8.1	

Source: White Paper on the Status of Malaysian Economy, April 1999.

Table 2: Macroeconomic Framework

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
GDP Growth rate (%)	8.9	9.0	9.7	8.6	7.8	8.3	9.3	9.4	8.6	7.7	-6.7
Unemployment rate (%)						3.0	2.9	2.8	2.6	2.6	3.9
Per Capita Income (RM at current price)						8,024	8,996	10,068	11,228	12,051	11,835
Consumer Price Index (%)	2.6	2.8	2.6	4.4	4.8	3.6	3.7	3.4	3.5	2.7	5.3
National Saving rate (% of GNP)						34.7	34.4	35.3	38.5	39.4	41.2
Net Bank Negara Reserve (RM million)						76.4	68.2	63.8	70.0	59.1	99.4

Source: IMF, International Financial Statistics, and August 1998.

White Paper on the Status of Malaysian Economy, April 1999.

However, the prolonged financial crisis and economic downturn have deeply affected the scenario of employment. They have caused an unemployment crisis to gather force. The 6.7 per cent contraction of the economy in 1998 caused the employment growth to slacken and the unemployment rate to soar to 3.9 per cent. The 3.9 per cent unemployment rate was of great concern, as rising unemployment had implications on efforts to reduce poverty.



The crisis has also resulted in the closure of some SMIs enterprises, particularly when tight monetary policies were implemented at the beginning of the crisis, causing disruption in operations and severe liquidity problems. Data from Ministry of International Trade and Industry (MITI) shows that by the end of 1998, an estimated 10 per cent of SMIs in the manufacturing sector has ceased operation due to the crisis.

MANPOWER DEMAND AND SUPPLY

In 1998, a total of 74,610 vacancies were reported to the Department of Manpower (DOM), Ministry of Human Resource (MHR), an increase of 15.7 per cent compared to 64,643 vacancies in 1997. The vacancies represented only a portion of the actual number of vacancies in the labor market since employers are not required to report them to DOM.

Vacancies trend by sector and state did not differ much between the years 1997 and 1998. The majority of the vacancies reported were in the manufacturing sector: 63.1 per cent in 1997 compared with 69.9 per cent in 1998. State wise, Penang recorded the highest number of vacancies reported (9,408) in 1997 compared to 16,833 in 1998. Vacancies in production and related, equipment transport operator and manual workers category constituted 75.3 per cent of total vacancies reported in 1998 compared with 52.4 per cent in 1997.

In the first quarter of 1999, a total of 19,403 vacancies were reported to the DOM, MHR. In the second quarter, the number increased to 26,091 vacancies, an increase of 43 per cent compared to the same quarter in 1998. Further details are as shown in Table 3 below.

Table 3: New Registrants and Vacancies Reported

	Second Quarter		Change(%)	First Quarter 1999
	1998	1999		
New Registrants	33,497	34,407	+2.7	30,017
Vacancies	18,240	26,091	+43.0	19,403

Source: Department of Manpower, Ministry of Human Resource.

Employment opportunities were also apparent in terms of the number of new registrants registered in Employees Provident Fund's (EPF) record. From January to September 1998, the EPF registered a total of 285,825 new members representing an average of 31,760 new members per month during the period.

Demand for manpower is further evidenced in the number of foreign workers application received by the Technical Committee on Foreign Workers at the Ministry of Home Affairs (MHA). From February to 19 November 1998, the Committee has considered applications for the importation and redistribution of 179,480 foreign

workers in the plantation and manufacturing sectors. Of the total, 49.5 per cent was approved by the MHA. The per centage approved was quite low so as to ensure that locals are not deprived of job opportunities.

According to the Business Expectation Survey of Limited Companies 1998 (Department of Statistics), industries that indicated positive growth in employment include: coconut (4.5per cent), palm oil (4.8per cent), insurance, real estates and business services (4.2per cent), retail (3.6per cent) and wholesale (0.8per cent). Industries in the manufacturing sector that recorded growth in employment include crude oil refineries (10.9per cent), industrial chemicals (4.3per cent), wood and wood and cork products except furniture (3.3per cent), other chemical products (1.6per cent), textile (1.5per cent) and rubber products (0.3per cent).

On the supply side, there were 33,345 active registered job seekers with DOM in 1998 (job seekers) compared with 23,762 in 1997. The average number of new registrants also increased to 10,116 per month in 1998 compared with an average of 7,624 registrants per month in 1997. The increase can be attributed to the intensive efforts undertaken by DOM and Labor Department to register workers who had been retrenched.

ISSUES OF RETRENCHMENT AND HUMAN RESOURCE CONTRACTION

Retrenchment occurs when an employee's service is terminated, as the company can no longer provide work for the employee. Retrenchment is often due to reduced demand for the company's products or services, financial losses, mergers, organizational restructuring, bankruptcy, closing of plants, relocation across international boundaries, and changes in technology such as automation at the operational level. Excess of workers due to one of the above reasons will eventually result in retrenchment.

Retrenchment has almost become a taboo among Malaysian employees following the economic downturn. Negative implications on the retrenched workers should not be overlooked, as loss of job is likely to cause financial problems, psychological stress and even physical illness. A worker who lost his job will face difficulties servicing loans and once savings are used up, may not be able to support himself or his family. Financial problems due to loss of employment, coupled with mental stress and embarrassment can lead to ill health.

From an employer's point of view, retrenchment is to be avoided by all means as it causes a loss of public confidence in the company. It will not only lower the morale amongst remaining employees, but also tighten the cash flow, as funds must be set aside for payment of termination benefits. Before retrenching staff, an employer will usually consider other alternatives such as cost cutting, job freeze, early retirement, tight control upon overhead, reduced working hours and wages.

Employees who are entitled to retrenchment benefits are those covered by the Employment Act and its 1980 regulations on termination and lay-off benefits.



Besides, employees covered by a collective agreement or contract of employment with a termination provision are also entitled to such benefits.

Although the Malaysian industrial law recognizes the right for employer to determine the appropriate size of its workforce, a worker whose service is terminated for any reason can claim unfair dismissal through the machinery of the Department of Industrial Relations and the Industrial Court. The Court will judge whether the retrenchment is genuine and reasonable procedures have been followed before dismissing workers. Should the worker choose to challenge the termination, he can claim unfair dismissal according to the procedures in the Industrial Relations Act Section 20.

According to the Act, the quantum of benefits depends upon the worker's length of service. Employees with less than a year's service are not entitled to benefits. For those with 1 to 2 years of service, they are entitled to 10 days' wages for every year of service. For 2 to 5 years of service, 15 days' wages for every year of service, whilst for more than 5 years of service, they are entitled to 20 days' wages for every year of service. For an incomplete year, the payment is pro-rata.

The recent economic downturn in Malaysia has an impact on the working class when it raises negative implication on the employment scenario. Many companies opted to terminate workers since the crisis broke out in 1997. Based on the statistics provided by the MHR, 18,863 workers were retrenched by over 140 companies³. Seventy-eights per cent of them were from manufacturing sector, while the rest were from transport, commerce, mining and construction sectors. The layoff scenario also had a negative impact on the serving employees, as there were uncertainty on their jobs. In addition, there was also a growing concern among the trade unions and MHR that employers were taking advantage of the economic slowdown to implement unnecessary pay cut and other measures that would seriously jeopardize the well being of the employees.

The economic situation had worsened in 1998, resulting in contraction in employment growth: rising retrenchment and high unemployment rate. A total of 83,865 workers were retrenched in 1998 compared with only 18,863 workers in 1997. Out of the figure, 20,082 of them were in Selangor, 16,884 in Penang and 10,863 in F.T Kuala Lumpur.

Table 4: Number of Retrenched by State, 1998

State	Number Retrenched (%)
Selangor	20,082 (23.9)
Penang	16,884 (20.1)
F.T Kuala Lumpur	10,863 (13.0)
Others	36,036 (43.0)
Total	83,865 (100.0)

Source: Labor Market Report, Malaysia, 1998.

³ This figure might be underreported since mandatory reporting of employers started only in 1998.

The highest number of retrenchment for 1998 was registered in the third quarter involving 26,238 workers. However the number of retrenched workers decreased significantly to 18,116 workers in the fourth quarter ie. a decrease of 31 per cent. Overall, the fourth quarter registered the lowest retrenchment for 1998.

The manufacturing sector recorded the highest number of retrenchment in each quarter where, in 1998, 53.8 per cent or 45,151 workers retrenched were from this sector. In terms of category of occupations, the majority of the workers retrenched were from the production and related, transport equipment operator and manual worker category, representing 53.8 per cent or 45,196 workers.

Table 5: Number Retrenched by Sector, 1998

Sector	Number Retrenched (%)
Manufacturing	45,151 (53.8)
Wholesale and Retail Trade, Restaurant and Hotel	10,434 (12.4)
Construction	9,334 (8.8)
Finance, Insurance, Real Estate and Business Services	6,596 (7.9)
Agriculture, Forestry, Livestock and Fishing	5,108 (6.1)
Community, Social and Personal Services	4,242 (5.1)
Others	3,000 (3.6)
Total	83,865 (100)

Source: Labor Market Report, Malaysia, 1998.

Table 6: Distribution by Category of Occupations

Category of Occupation	Number Retrenched (%)
Prod. and Related Workers, Transport Equipment Workers and Laborers	
** Skilled Workers	15,971(19.0)
** Unskilled Workers	14,708(17.5)
** Semi-Skilled Workers	14,517(17.3)
Professional, Technical and Related Workers	12,125(14.5)
Clerical Workers	9,927(11.8)
Administrative and Managerial Workers	6,275 (7.5)
Others	10,342 (12.3)
Total	83,865 (100.0)

Source: Labor Market Report, Malaysia, 1998.

The retrenchment did not only occur in large corporations, but SMIs also opted for dismissing their workers when facing with the economic crisis. In 1998, about 16,521 number of workers being retrenched were from the SMIs.



Table 7: Retrenchment by SMI

State	Number
Selangor	3,304
Pulau Pinang	1,734
F.T. Kuala Lumpur	1,487
Johor	3,303
Trengganu	743
Other states	5,950
Total	16,521

Source: SMI Development Corporation
Labor Market Report, 1998

There were many reasons given by employers cited in the Labor Market Report 1998 for retrenching their workers as shown in Table 9. About 59.9 per cent or 2,867 employers stated reduction in demand for products as the main reason for retrenchment. Another 11 per cent reported high production cost, 8.1 per cent reorganizing their companies, 6.4 per cent had closed their operation, 2.4 had sold their companies and 12.3 per cent stated other reasons for retrenchment.

Table 8: Reason for Retrenchment

Reason for Retrenchment	No. of Employers
Reduction in Demand for Product	2,867 (59.9)
High production cost	526 (11.0)
Company Reorganisation	386 (8.1)
Closure	307 (6.4)
Sale of Company	114 (2.4)
Others	589 (12.3)
Total	4,789 (100.0)

Source: Labor Market Report, Malaysia 1998.

In terms of equity, the distribution are as follows: 69.5 per cent or 3,330 companies were Malaysian owned, 17.9 per cent or 857 companies foreign owned and 12.6 per cent or 601 joint-venture companies.

Certain quarters claimed that retrenchment amongst women was very high. In 1998, 42.3 per cent or 36,284 of 83,865 workers retrenched were women. A majority of the women 64.5 per cent or 23,387 were from the manufacturing sector. In terms of occupational category, some 59.1 per cent or 21,450 workers were from the production and related, transport equipment operator and manual worker category.

Clerical and related workers also exhibited high number of women retrenched representing 17.6 per cent of the total or 6,390 workers.

It is observed that women workers who were retrenched came from the sector and category that employed high number of women workers. It is easier to get alternative jobs in the said sector and category. Women are not victimize in retrenchment exercise as employers are required to institute retrenchment according to LIFO (Last In First Out) principle rather than gender.

CURRENT AND FUTURE RETRENCHMENT TREND

As the economic crisis was getting deeper, the Government had taken a reversal approach in its policies from tight monetary and fiscal policies to expansionary fiscal and monetary policies in middle 1998. This was to induce investment in the economy, and it has shown some positive result especially in relation to the retrenchment figure. In terms of the weekly retrenchment figures, it has shown a declining trend after reaching its peak in the middle July 1998. The weekly number of workers retrenched has dropped from 5,245 in the middle of July 1998 to 316 in late August 1999 (Refer to Appendix I - Graph 1). For the year 1999, as at September 4, a total of 25,592 workers were retrenched. Details sectors are as shown in Appendix II.

The government and Bank of America forecasted the economy will recover and achieve a growth rate of 1.0 per cent in 1999, whilst Goldman Sachs, an international investment bank, forecasted a 2.0 per cent growth in 1999. Based on these forecasted economic growths, the labor market is expected to continue to remain stable.

Table 9 below shows comparison of retrenchment for the second quarter 1998/99 and first quarter 1999. Retrenchment showed a downward trend. The figure for the second quarter 1999 dropped 44.9 per cent to 10,403 workers compared to 18,693 workers in the same quarter last year.

Table 9: Number of Workers Retrenched and Number of Employers Involved

	Second Quarter		Change(%)	First Quarter 1999
	1998	1999		
No. of workers	18,693	10,304	-44.9	11,454
No. of Employers	1,277	680	-46.8	735

Source: Labor Department, Peninsular Malaysia.
 Labor Department, Sabah.
 Labor Department, Sarawak.



Table 10: Retrenchment by State, September 1999

State	Number Retrenched (%)
Selangor	6,474 (25.3)
F.T Kuala Lumpur	4,852 (19.0)
Perak	3,761 (14.7)
Penang	2,655 (10.4)
Kedah/Perlis	1,991 (7.8)
Johor	1,720 (6.7)
Other States	4,139 (16.2)
Total	25,592(100.0)

Source: Labor Market Report, 1998.

Table 11: Number Retrenched by Sector, September 1999

Sector	Number Retrenched (%)
Manufacturing	13,967 (54.6)
Wholesale and Retail Trade, Restaurant and Hotel	3,072 (12.0)
Construction	2,525 (9.9)
Finance, Insurance, Real Estate and Business Services	2,338 (9.1)
Agriculture, Forestry, Livestock and Fishing	1,332 (5.2)
Community, Social and Personal Services	1,246 (4.9)
Others	1,112 (4.3)
Total	25,592 (100.0)

Source: Labor Market Report, 1998.

POLICY RESPONSES

The preceding section has shown that the economic crisis has contracted the work force not only the large but also the SMIs. The widespread of the crisis in Malaysia has triggered policy makers to immediately address the shortcomings pertaining to the labor market. As the economic situation has deeply affected the scenario of employment, it emerges that Malaysia is not only lacking in accurate information on labor market, but also lack of proper human resource (HR) planning in the long run. Labor market information is the information on the interplay of relationship between labor supplies (availability of manpower) and labor demand (availability of vacancies).

At the national level, labor market information is needed for the efficient allocation of human resources throughout the country to influence labor market actions. At the middle level, institutions and persons use labor market information to

match and facilitate supply and demand of labor. The direct participants in the labor market, such as the job seekers or employers, use labor market information either to guide them in their search for employment or in selecting the best-qualified job seekers. On the whole, labor market information can be used to balance the supply of and demand for labor with maximum utilization.

Beginning from January 1998, MHR initiated proactive measures by closely monitoring developments in the collection of labor market data on retrenchment, job vacancies, registration of retrenched workers, re-training, and industrial relation such as the number of strikes, workers involved and man-days lost due to strikes and picket. In addition, employers involved in retrenchment have been encouraged to provide exit services that includes interview techniques, counseling and career guidance to facilitate workers in finding alternative jobs. In retrenchment cases that involve large number of cases, the Labor Department, DOM and Industrial Relations Department under the MHR, gave in-situ service to employers and workers in various aspects such as statutory retrenchment benefits, registration and emplacement to alternative jobs with the cooperation of other employers that demand for workers⁴. The Government has established task forces at district and national levels comprising representatives from relevant Government departments, employers and workers' unions.

Various incentives were given to employers to encourage training and retraining of workers as alternative to retrenchment such as exemption from paying Human Resource Development Council (HRDC) levy to employers facing financial difficulties and credited unclaimed levy amounting to RM66 million to employers' account to encourage employers to continue training their workforce even during the economic downturn. The Government has also established a Training Scheme for Retrenched Workers under HRDC with an initial allocation of RM5 million in May 1998. Workers retrenched from sectors covered by HRDC are eligible to apply for training for any courses up to diploma level. As of 31 December 1998, 572 applications were approved with financial assistance of RM2.52 million.

In ensuring the well being of retrenched workers, stepped-up efforts were taken in ensuring that employers pay retrenchment benefits to their workers. As an example, in the case of Saship in Labuan, the Industrial Relations Department (IR) under MHR had persuaded the management to arrange for staggered payments to the 700 affected workers. As at the end of December 1998, approximately RM4 million was already paid-out and the remaining RM4 million was paid in January 1999, RM500 per worker before Hari Raya (Muslim Festival) and the remainder at the end of January 1999. The Employment Act 1955 was also amended with effective from August 1998, where employers are required to retrench foreign workers before retrenching local workers. This step is taken to ensure that the job opportunities of local workers are secured.

⁴ Read-Rite Company retrenched more than 4,000 workers in Penang, In this case, most of the workers were able to secure alternative jobs before the actual effective date of retrenchment.



Measures taken by MHR have helped to maintain the harmonious industrial relations environment. Data from MHR shows that in 1998, 12 strikes involving 1,777 workers with 2,635 man-days lost were recorded compared to five strikes involving 812 workers with 2,396 man-days lost in 1997. Even though, the number of strikes increased significantly, the number of man-days lost almost remain unchanged. Only 14 pickets were recorded in 1998 compared with 34 pickets in 1997. Similarly the number of industrial disputes where the number dropped from 463 disputes involving 139,187 workers in 1997 to 448 disputes involving 85,053 workers in 1998, thus signifying a stable working labor environment.

Overall, the MHR is urging the companies to be empathetic and to consider other retrenchment alternatives such as reduced working hours and working days, flexible working time, pay cut, voluntary lay-off, and making an offer to employees to resign voluntarily. In general, employers responded positively to the government’s call in taking the above measures before resorting to retrenchment. Employers are required to report the implementation of these alternatives to the Labor Department at least one month before the effective date of retrenchment. From August to December 1998, most employers (or 67.2 per cent) chose pay cuts compared to voluntary separation scheme (28.4per cent) and voluntary lay-off (4.4per cent). The number of employers and employees involved between August to December 1998 are shown in the following Table 12:

Table 12: Alternative for Retrenchment

Measures	No. of Employers	No. of Employees
Pay-Cut	795	22,514
Voluntary Lay-Off	52	6,342
Voluntary Separation	336	6,193

Source: Ministry of Human Resource, 1998.

During the economic downturn, industrial harmony is maintained with the cooperation of all parties: workers, employers and the government. Efforts undertaken by the Labor Department and the Industrial Relations Department under MHR have been successful in preventing industrial disputes and maintaining harmonious industrial relations between employers and workers.

CONCLUSION

Economic crisis has not only affected employment in the large corporations but also in small and medium industries. Despite of the contraction of 6.7 per cent of the economy, the retrenchment rate in Malaysia represented only one per cent of the total employment. The low retrenchment rate was accompanied by harmonious industrial environment. This was made possible by the holistic approach taken by the government in addressing the immediate issues confronting the labor market during the economic crisis. The facilitating and regulatory role played by the Government in

the labor market had eased tension among workers arising from the economic crisis. The harmonious industrial environment had in a way helped to expedite the economic recovery.

The holistic approach by the government in addressing the labor issues incorporated both the demand and supply sides of the labor market. Accessibility of information is considered important, thus the government making it compulsory for employers to report any step taken that can give a signal to the labor market. In addition, policies designed during period of crisis involved the players in the market, the employers and employees. The holistic approach did not segregate policies according to sectors, ownership, gender or sizes of firms. Firms irrespective of the ownership functions and sizes are treated equally when addressing labor issues. Thus employees working in small and medium industries should not expect to receive better or lesser treatments when confronting economic crisis.

As employees working in SMI are not likely to be given special treatment during economic crisis, they are expected to be more productive as compared to their counterparts working in large industries. SMI should focus on the export market rather than relying on the domestic market for expansion, as only 20 per cent of SMI were involved in exports. Thus employees in SMI should be more aggressive and competitive rather than being complacent in order to compete in the international market. Being able to capture the export market, means less likely for employees working in SMI to be retrenched in case of economic crisis reoccurring.

APPENDIX II

Weekly Retrenchment Data by Sector, 1 February 1998 - 4 September 1999

Week	Total	Manufacturing	Construction	Commerce	Finance	Others
1/2 - 7/2/98	480	231	60	129	29	31
8/2 - 14/2	1,583	390	263	630	151	149
15/2 - 21/2	3,159	2,744	117	134	135	29
22/2 - 28/2	2,173	1,327	313	136	207	190
1/3 - 7/3	2,578	1,159	990	141	211	77
8/3 - 14/3	3,460	2,301	303	195	248	413
15/3 - 21/3	2,797	1,776	231	445	155	190
22/3 - 28/3	1,463	255	379	325	128	376
29/3 - 4/4	2,200	883	116	216	193	792
5/4 - 11/4	1,041	308	44	158	269	262
12/4 - 18/4	2,473	727	220	310	306	910
19/4 - 25/4	1,181	215	112	266	260	328
26/4 - 2/5	1,150	545	231	91	97	186
3/5 - 9/5	1,381	683	109	213	97	279
10/5 - 16/5	1,262	513	279	203	144	123
17/5 - 23/5	1,741	834	252	176	140	339
24/5 - 30/5	1,487	718	164	188	63	354
31/5 - 6/6	1,467	773	211	245	82	156
7/6 - 13/6	1,519	826	123	254	69	247
14/6 - 20/6	974	185	127	197	302	163
21/6 - 27/6	1,812	776	579	222	95	140
28/6 - 4/7	1,033	590	109	103	209	22
5/7 - 11/7	1,127	593	169	124	118	123
12/7 - 18/7	5,245	4,715	17	296	110	107
19/7 - 25/7	2,919	2,108	232	318	122	139
26/7 - 1/8	2,622	1,278	122	317	143	762
2/8 - 8/8	1,266	567	113	211	241	134
9/8 - 15/8	1,600	1,077	137	161	129	96
16/8 - 22/8	2,277	1,256	337	132	128	424
23/8 - 29/8	1,448	330	201	221	548	148
30/8 - 5/9	1,278	88	279	379	175	357
6/9 - 12/9	1,444	573	91	383	141	259
13/9 - 19/9	1,684	818	114	397	59	296
20/9 - 26/9	1,984	1,420	211	185	48	120
27/9 - 3/10	1,299	444	252	212	154	237
4/10 - 10/10	1,711	1,092	218	185	67	149
11/10 - 17/10	1,465	733	201	257	126	148
18/10 - 24/10	1,080	459	171	117	94	239
25/10 - 31/10	2,214	928	254	162	121	749
1/11 - 7/11	1,132	547	208	156	64	157
8/11 - 14/11	878	199	134	129	61	355
15/11 - 21/11	854	389	108	224	46	87
22/11 - 28/11	2,171	1,280	81	445	15	350
29/11 - 5/12	2,685	154	171	106	72	2,182
6/12 - 12/12	1,047	414	46	93	43	451
13/12 - 19/12	1,350	1,150	69	33	57	41
20/12 - 26/12	371	126	20	90	15	120
27/12 - 2/1/99	734	341	44	127	92	130
3/1 - 9/1	868	260	453	38	45	72
10/1 - 16/1	503	161	34	147	74	87
17/1 - 23/1	864	537	11	72	148	96
24/1 - 30/1	616	444	30	49	24	69
31/1 - 6/2	544	157	102	52	7	226

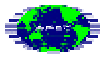


7/2 - 13/2	946	506	208	48	78	106
14/2 - 20/2	659	266	39	127	98	129
21/2 - 27/2	737	331	36	158	28	184
28/2 - 6/3	1,381	1,114	50	122	43	52
7/3 - 13/3	774	401	89	162	35	87
14/3 - 20/3	2,637	1,954	81	102	337	163
21/3 - 27/3	478	68	50	120	80	160
28/3 - 3/4	496	41	146	65	75	169
4/4 - 10/4	1,395	1,022	186	41	74	72
11/4 - 17/4	720	375	38	64	62	181
18/4 - 24/4	1,581	1,043	65	77	101	295
25/4 - 1/5	521	126	145	104	19	127
2/5 - 8/5	623	312	52	134	19	106
9/5 - 15/5	481	50	58	60	127	186
16/5 - 22/5	935	471	123	31	144	166
23/5 - 29/5	793	348	41	193	94	117
30/5 - 5/6	919	578	67	61	171	42
6/6 - 12/6	1,061	874	17	59	50	61
13/6 - 19/6	516	212	13	162	47	82
20/6 - 26/6	274	130	24	44	26	50
27/6 - 3/7	471	182	36	192	45	16
4/7 - 10/7	514	366	28	50	30	40
11/7 - 17/7	428	320	37	20	17	34
18/7 - 24/7	383	86	57	114	36	90
25/7 - 31/7	698	268	29	196	33	172
1/8 - 7/8	374	272	5	57	35	5
8/8 - 14/8	331	140	21	24	40	106
15/8 - 21/8	127	42	17	39	17	12
22/8 - 28/8	408	337	1	5	12	53
29/8 - 4/9	316	67	132	30	59	28

Source: Ministry of Human Resource, 1999.

REFERENCES

- Bank Negara Malaysia, *Quarterly Economic Bulletin*, Kuala Lumpur, various issues.
- Economic Planning Unit, *White Paper: Status of the Malaysian Economy*, Prime Minister Dept., April 1999.
- Economic Planning Unit, “Key Economics Indicators –Response to Recovery Measures”
- Prime Minister Dept., June 1999.
- Economic Planning Unit, Malaysia and World Bank: *The Asian Financial Crisis – Impact at the Firm Level – The Malaysian Case*, 1999.
- IDE-JETRO Institute of Developing Economies, “1999 Economic Outlook for East Asian” Tokyo.
- Institute of Developing Economies, *Asian Economic Crisis 97/98: Issues in Macroeconomics Imbalances, Capital Outflows and Financial Crisis*, Tokyo, March 1999.
- International Monetary Funds, “The IMF’s Response to the Asian Crisis”, January 17, 1999.
- Jomo K.S. (Ed.), *Tigers in Trouble: Financial Governance, Liberalisation and Crises in East Asia*, Hong Kong University Press, 1998.
- Lawrence H. Summers, “Opportunities Out of Crises: Lessons from Asia”, US Public Affairs Office, March 19, 1998.
- Mahathir Mohamad, *In The Face of Attack: Currency Turmoil*, 1998.
- Ministry of Human Resource, “Labour Market Report 1998”
- Ministry of Human Resource, “Synopsis Labour Market Report –Second Quarter 1999”
- New Straits Times, “Economist Krugman Praises Our Capital Controls”, June 5, 1999.
- Paul Krugman, “The Myth of Asia’s Miracle’ Foreign affairs, Nov-Dec 1994.
- Paul Krugman, “What Ever Happened to the Asian Miracle?”, Fortune, 18 Aug. 1997.
- Paul Krugman, “Will Asia Bounce Back?” Speech for Credit Suisse First Boston, Hong Kong, March 1998.
- Ranjit Gill, *Black September*, Epic Magt. Services, Singapore, 1997.



Rasiah R., “Economic Effects of the Southeast Asian Recovery Package”, paper presented at the Automobile Shakeout Regional Workshop, Kuching, 26-28 May 1999.

Rujhan Mustafa, “Malaysia’s Financial Crisis: Policy Responses and Prospects”, (forthcoming) Chapter in “Southeast Asia into the Twenty First Century: Critical Transition, Continuity and Change, 1999.

Ngeow Yeok Meng, “Retrenchment during Economic Downturn”, available from http://skali2.com/colours/iw/009/iw19980220_01.html

Ngeow Yeok Meng, “Implications Of Retrenchment”, available from http://www.skali.com/colours/iw/011/iw19980316_01.html

Stanley Fisher, “The Financial Crisis in Emerging Markets: Lessons for Eastern Europe and Asia”, EastWest Institute New York, April 23, 1999.

Steven Radelet & Jeffrey Sachs, “The East Asian Financial Crisis: Diagnosis, Remedies, Prospects”, Harvard Institute for International Development, April 20, 1998.

**INTERNAL CAPABILITIES, EXTERNAL LINKAGES, AND
ORGANIZATIONAL PERFORMANCE: A STUDY ON
TECHNOLOGY-BASED KOREAN VENTURES**

Choonwoo Lee
College of Business Administration
Seoul National University (Seoul, Korea)

Kyungmook Lee
College of Business Administration
Seoul National University (Seoul, Korea)

**INTERNAL CAPABILITIES, EXTERNAL LINKAGES, AND
ORGANIZATIONAL PERFORMANCE: A STUDY ON
TECHNOLOGY-BASED KOREAN VENTURES**

ABSTRACT

This study examined the influence of internal capabilities and organizational linkages to external entities on firm performance by using data from 143 technology-based young Korean enterprises. Internal capabilities were operationalized by entrepreneurial orientation, technological capabilities and financial resources invested. External linkages were captured by partnership-based linkages and sponsorship-based ones. Partnership-based linkages were measured by strategic alliance with other firms, participation in venture associations, and collaboration with universities or research institutes. Sponsorship-based linkages consisted of financial and non-financial support from venture capitalists, commercial banks and the Korean government. Sales volume and competitiveness of products/services indicated organizational performance. Regression results showed that technological capabilities and financial resources are important predictors of organizational performance. Among external linkages, alliance with other firms and venture capital companies significantly enhances organizational performance. Several interaction terms have very significant influence on performance. Implications and directions for future research were discussed.



INTRODUCTION

As an agent of creative destruction, technology-based young firms are one of the engines of economic development and wealth creation (Schumpeter, 1934). Technology-based young firms create new jobs (Birley, 1986) and foster technological innovations (Tushman & Anderson, 1986). However, these young firms are very prone to failure as “liability of newness” arguments suggested (Stinchcombe, 1965). As a result, scholars, policy-makers, and entrepreneurs are very concerned with factors that contribute to the success of technology-based young firms. This paper examines the influence of firm internal capabilities and firm’s linkages to external entities on the organizational performance of technology-based young firms.

What determines organizational performance is a perennial research question for organizational scholars. Many different perspectives have been developed to explain performance differential among firms. Several perspectives such as industrial organization (e.g., Caves, 1984) and population ecology (Hannan & Freeman, 1985) have emphasized industry or environmental conditions and ignored intra-industry performance differential among firms. By contrast, other perspectives have underscored the characteristics and activities of organizations rather than environmental conditions and explained intra-industry performance differential. Among those perspectives, two perspectives are very contrasting.

First, resource-based view of the firm (RBV hereafter) emphasizes firm idiosyncratic resources (e.g., Barney, 1991; Penrose, 1959; Wernerfelt, 1984). RBV regards the firm as a bundle of resources and suggests that characteristics of firm resources significantly affect the firm’s competitive advantage (Barney, 1986, 1991; Penrose, 1959; Peteraf, 1993; Wernerfelt, 1984). Firms of which resources are valuable, scarce, imperfectly tradable, and hard to imitate can have a sustainable advantage over competitors (Barney, 1986; Dierickx & Cool, 1989; Peteraf, 1993; Reed & DeFlippi, 1990). The firm resources investigated before include human resource, technological resource, financial resource, organizational culture, managerial capabilities, etc (Barney, 1986; Hall, 1991, 1993; Prahalad & Hamel, 1990).

Second, social capital theory suggests that social capital of organizations is a very important antecedent of organizational performance (Leenders & Gabbay, 1999). Recently, Organizations as an open system should mobilize external resources to produce products/services and should have ability to attract and retain customers (Burt, 1992; Pennings & Lee, 1999; Pennings, Lee, & Witteloostuijn, 1998; Uzzi, 1995). Firm’s ability to mobilize extramural resources and to attract customers is influenced by the quality of a firm’s linkages to external entities, because social relations mediate economic transactions and confer organizational legitimacy (Granovetter, 1985). While RBV has focused on resources or capabilities accumulated inside the firm, social capital theory has underscored a firm’s relational characteristics with external entities.

Drawing on the two perspectives, this paper examines the influence of internal capabilities and linkages to external entities on organizational performance in the context of technology-based young Korean enterprises. Additionally, this study investigates the joint effects of internal capabilities and linkages to external entities on organizational performance. We used survey data from 143 firms that were producing computer software, electric and

electronic products, and biotechnological products.

This study can contribute not only to field of management and organization and but to entrepreneurs. The current state of theory on technology-based young firms is in its own infancy. Theoretically, this study can test empirical validity of RVB and social capital theory on competitive advantage and can identify key success factors of venture business. More important contribution is that this study combines the two theoretical perspectives. Few studies have combined the two research streams, and to our knowledge no study has examined the joint effects of internal resources and linkages to external entities on organizational performance. Practically, this study can provide managerial implications to entrepreneurs in technology-based industries. Results of this study can suggest what kinds of internal capabilities entrepreneurs should accumulate and what kinds of external linkages entrepreneurs should develop.

THEORY AND HYPOTHESES

Internal Capabilities and Organizational Performance

What are the crucial internal capabilities that determine the performance of technology-based young firms? Several investigators have emphasized the attributes of entrepreneurs such as entrepreneurial attitude, education, work experience, and start-up experience as key success factors (e.g., Cooper & Bruno, 1977; Kazanjian, 1988; Miller, 1983; Mintzberg & Waters, 1987; Van de Ven, Hudson, & Schroder, 1984). By contrast, several papers such as Eisenhardt and Bourgeois (1988), Eisenhardt and Schoonhoven (1990), Goodstein and O'Reilly (1988), and Roure and Maidique (1986) have demonstrated that the attributes of top management team such as team size, joint work experience and heterogeneity in functional backgrounds of founding members were also important predictors of venture success.

Recently, several scholars have extended the antecedents of technology-based venture's success to the characteristics of organization as a whole. These characteristics include founding strategy (Romanelli, 1989), the degree of technical innovation within the core technology of the firm (Boeker, 1989; Maidique & Patch, 1982), the amount of financial expenditure after foundation (Schoonhoven et al., 1990). This paper examines the attributes of organization as a whole while controlling for founder's attributes and environmental conditions.

Review on literature of RVB and entrepreneurship combined with interviews with top executives of our sample firms suggest three important kinds of internal capabilities that significantly influence the performance of technology-based young organizations. They are entrepreneurial orientation, technological capabilities, and financial resources invested. Definitions of these variables and their relationship with organizational performance are provided as follows.

Entrepreneurial orientation. Entrepreneurs usually found a new venture to create a new market niche with new products/services or to substitute established players with better quality, cheaper price, etc. The creative destruction process calls for entrepreneurs to invest a great deal of resources in innovation (Kao, 1995; Schumpeter, 1934, 1947). Technology-based young organizations are not likely to succeed without the investment in innovation. Without



innovation, young organizations have to rely on traditional ways of doing business; traditional products/services, traditional distribution channels, usually higher price than established players. Head-to-head competition with established players is highly likely to lead the failure of new organizations due to the deficiency of many critical resources such as scale, legitimacy, network ties with resource holders such as suppliers and customers, etc. As a result, new organizations should differentiate themselves from established players by introducing innovations.

To generate innovations, entrepreneurs of technology-based young organizations should run the organization entrepreneurially (Covin & Slevin, 1991; Zahra, 1993). The term “entrepreneurial orientation (EO hereafter)” can capture the organizational processes, methods, and styles that firms use to act entrepreneurially (Lumpkin & Dess, 1996; Miller, 1983). It has been studied as a key determinant of the performance of new ventures in entrepreneurship literatures (e.g., Lumpkin & Dess, 1996). We adopted three dimensions of EO suggested by Miller (1983); innovativeness, risk-taking propensity, and proactiveness. Numerous studies have adopted or extended the conceptualization in new venture investigation (e.g., Covin & Slevin, 1989; Ginsberg, 1985; Lumpkin & Dess, 1996; Morris & Paul, 1987; Schafer, 1990). Innovativeness reflects a firm’s propensity to engage in and support new ideas, experimentation, novelty, and creative processes that may result in new products, services, new market, and manufacturing processes (Lumpkin & Dess, 1996). Risk-taking propensity of a firm is its willingness to make large and risky resource commitments (Miller, 1983). Finally, proactiveness refers to how a firm relates to market opportunities through active market research and introduction of new products/services ahead of competitors (Lumpkin & Dess, 1996; Miller & Friesen, 1978). This discussion provides following hypothesis.

Hypothesis 1: The level of entrepreneurial orientation is positively associated with organizational performance.

Technological capabilities. Technology-based young organizations usually were established to enter the existing market niches or create new market niches by developing and utilizing new technologies. Not surprisingly, technological capabilities have been regarded as a critical success factor that determines the performance not only of technology-based organizations (e.g., Bettis & Hitt, 1995; Henderson & Clark, 1990; Tushman & Anderson, 1986) but also of technology-based new ventures (Chandler & Hanks, 1994; Dollinger, 1995; Shrader & Simon, 1997). Technological capabilities are defined as technological knowledge, technical expertise or know-how generated by R&D (Dollinger, 1995). Especially, patents and utility models patents and designs, which are protected by patent laws and thus can be used exclusively, allow new ventures to create new products, identify market opportunities, and differentiate themselves from competitors. Technological capabilities of young organizations that are not protected by laws are very vulnerable to be imitated by competitors, especially by large established competitors. Large firms can absorb the unprotected technologies of young organizations by scouting the key technicians or researchers with a lure of thick compensation that young organizations cannot afford to provide. Patent laws cannot protect several kinds of competitiveness enhancing technological capabilities. One of them is quality control capability. Absent of other signaling indicators for product quality, quality assurances provided by domestic and international institutions enhance organizational performance by letting potential customers know the technological capabilities of new ventures.

This discussion leads us to following hypothesis.

Hypothesis 2: Technological capabilities a new venture built is positively associated with organizational performance.

Financial resources. Financial resources that a new venture invested before are very important predictor of venture performance (Dollinger, 1995; Schoonhoven et al., 1990; Shrader & Simon, 1997). Schoonhoven et al. (1990) argued that the amount of capital a new venture has expended before would increase the speed with which first products reach market. Technology-based young organizations usually invest all available financial capital during early development stage. However, they usually run short of financial resources that should be invested for technology development, market research and advertising, because they typically are less able to mobilize financial resources from external entities from banks than more established companies are. Young firms endowed with a large amount of capital have many advantages. They can invest more to develop products, advertise, research market, and hire experts whose capabilities are necessary for organizational success. Other things being equal, young firms that invested more in R&D, advertising, and market research are more likely to perform better in the future. This discussion leads us to following hypothesis.

Hypothesis 3: The amount of financial resource that a venture invested before is positively associated with organizational performance.

Linkages to External Entities and Organizational Performance

Organizations, either established larger ones or new start-ups, does not have sufficient resources needed and thus has to exchange the resources with organizational environment (Pfeffer & Salancik, 1978). Especially new start-ups that usually are established only with ideas and thus are deficient of many resources should mobilize resources from external environment. In mobilizing external resources, linkages to external entities play very important role. It is because economic actions are embedded within larger organizational networks, which not only facilitate some types of actions but also constrain actor's choices and actions transcending pure cost-benefit analysis (Granovetter, 1985). Dollinger (1985) found that financially successful entrepreneurs were particularly active in networking with business people and regulators. Hansen (1995) also found that entrepreneurial networks are positively associated with organizational growth. Networks are vital to perceive opportunities, test ideas, and garner resources to create new enterprise (Aldrich & Zimmer, 1986).

The networks among organizations have been investigated as a key factor that influences organizational actions and performance. Recently suggested term "corporate social capital" captures this effect of social networks on organizational performance (e.g., Pennings et al., 1998). Corporate social capital can be defined as "the set of resources, tangible or virtual, that accrue to a corporate player through the player's social relationships, facilitating the attainment of goals (Gabbay & Leenders, 1999: 3)."

We differentiated partnership-based linkages from sponsorship-based linkages. Partnership-based linkages are cooperative and bilateral relationships in the sense that participants in the relationship give-and-take resources for a considerable time span. Sponsorship-based linkages are unilateral relationships in the sense that external entities



provide unilateral supports to a new venture without receiving explicit rewards. Both kinds of linkages can enable a firm to mobilize resources needed for input transformation and sell the output (Baum & Oliver, 1991; Eisenhardt & Schoonhoven, 1996).

Partnership-based linkages. Partnership-based linkages to external entities can be defined as cooperative or collaborative relationships with environmental constituents (Baum & Oliver, 1991; Dollinger, 1989). Literature review and interviews with top executives of our sample firms suggest that three kinds of partnership-based linkages are crucial to enhance the performance of technology-based young organizations. They are linkages to (1) resource supplying organization including venture capitalists and consuming organizations, (2) other technology-based young organizations, and (3) universities and research institutes. Strategic alliance is used as an instrument to have a long-term relationship with suppliers and customers. Participation in venture associations and informal entrepreneurs' network help a firm to establish relationship with other young organizations. Formal R&D contracting-out provides linkages to universities and research institutes.

Strategic alliances with suppliers and customers provide a great advantage to young firms. Strategic alliance can signal enhanced legitimacy for firms (Baum & Oliver, 1991; Eisenhardt & Schoonhoven, 1996), provide opportunities for gaining new competence (Hagedoorn, 1993; Hennart, 1991), and offer specific knowledge-based resources such as manufacturing or customer information (Hamel et al., 1989; Teece, 1987). Alliance can also help firms to gain market power (Hagedoorn, 1993), move more quickly into new markets and technologies, and create option for future investment (Eisenhardt & Schoonhoven, 1996). Through strategic alliances, a firm can secure stable sources of resource supplies and sales of products/services. New ventures usually have a great difficulty in securing suppliers and customers who are questioning the long-term survival of the venture. Suppliers are reluctant to transact with a new venture especially when the transaction requires transaction-specific investments, because the investments are not likely to be recovered. Customers are also reluctant to buy products/services of new ventures, because they suspect the quality and performance of products/services produced by new ventures, and worry about repair services and value of warranty in cases of the venture's failure. Several studies have illustrated the benefit of having strong relationship with others for a venture success. For instance, Uzzi (1996) showed that strong ties with suppliers, which are very similar to strategic alliance, enhance the survival chance of new ventures.

Equity investment of venture capital companies into a new venture not only provides financial resources and management know-how but also enhances legitimacy. Since venture capital companies that invested in a new venture have a strong incentive to make the venture succeed, they provide management related know-how and refer potent professionals who can help the venture. Potential suppliers, buyers, investors and employees face a great deal of uncertainty in deciding whether they transact with the new venture or not. The equity participation of venture capital companies signals to those suspecting entities that the new venture has a high chance of success. The legitimacy and lowered perceived uncertainty enable a new venture to mobilize external resources with better terms.

By participating in venture associations and informal entrepreneurs' networks, entrepreneurs can obtain valuable information about management of venture business, new

market trends and opportunities, and potential cooperators (Pennings & Harianto, 1992). Noria (1992) linked interpersonal contacts within Route 128 business community to implications for cooperative action among firms. The networks also help entrepreneurs find right professionals such as lawyers, accountants, and venture capitalists who can help the ventures, since networks can function as powerful referring networks. The reference will be more valuable when it has a solid ground to believe the referee because of two reasons. First, information transferred through trustworthy relations is more credible and interpretable because the identity of actors and the intensity of their social ties are as important as the information itself (Uzzi, 1996). Second, the network functions as a social control mechanism, because the network diffuse information about economic actors, and the fear of reputation loss resulting from opportunistic behavior deters firms linked to the network from behaving opportunistically against each other (Raub & Weesie, 1990). Noria (1992) linked interpersonal contacts within Route 128 business community to implications for cooperative action among firms. In addition to direct interpersonal contact, status and reputation also enhance the likelihood of cooperation (Podolny, 1994) These qualities signal the skill and trustworthiness of potential partners and so facilitate cooperation, particularly when there is high uncertainty (Eisenhardt & Schoonhoven, 1996).

The collaboration with universities and research institutes provides a means of developing technological knowledge, which cannot be developed by a new venture alone (Mapes, 1967). Universities also provide consulting assistance to a new venture and opportunities for continuing education for professional employees (Cooper, 1973). In the long run, the collaboration can enable new venture to recruit researchers with high caliber who will not join the venture otherwise. In the collaboration process, professors and researchers are personally acquainted with the venture and thus recommend their students/fellow young researchers to join the venture. In addition, graduate students who participate in the projects can get to know about the venture and its technology and are likely to join as key members of the venture when they believe the success potential of the venture. Interviews with the founders of successful technology-based Korean ventures also indicate that they actively used the collaboration with universities and research institutes for developing technology in the short term and for hiring high-quality employees. These discussions lead us to following hypothesis.

Hypothesis 4: The partnership-based linkages to other firms, venture capital companies, venture associations, and universities/research institutes are positively associated with organizational performance.

Sponsorship-based linkages. Sponsorship-based linkages of an organization are unilateral relationships in the sense that external entities provide supports to the organization without receiving explicit rewards. Young organizations that are supported by powerful institutes have a great advantage (Flynn, 1993). The linkages increase the amount of external resources available to a new venture, providing the opportunity for organizational growth. Reducing the potentially adverse effects that arise during vulnerable early stage of the organization (Stinchcombe, 1965), the linkages protect the new ventures from environmental threats (Hall, 1982; Miner, Amburgey, & Sterns, 1990). Young organizations can mobilize resources from those institutes free of charge or with better terms. The sponsorship of those institutes also enhances the social legitimacy and status of a new venture (Baum & Oliver,



1992; Podolny, 1993). The enhanced legitimacy and status enable a new venture to mobilize resources from other entities that are critical for venture success.

In the context of technology-based young Korean organizations, the Korean government has initiated creating a richer and more nurturing environment conducive to birth and survival of technology-based ventures. The government itself nominated several technology-based ventures as promising ones and provided research funding for technology development to those ventures. The Korean government has established a variety of promising small enterprise nomination programs. When selected as a promising small enterprise by government, a venture can obtain a developmental fund from the government and social legitimacy.

The Korean government also encouraged powerful financial institutions to provide more supports to technology-based ventures. Several commercial banks in Korea have established the promising small enterprise nomination programs. When selected as a promising small enterprise by a bank, a new venture can borrow money with an interest rate lower than market rate and also get social legitimacy. These discussions lead us to following hypothesis.

Hypothesis 5: The sponsorship-based linkages to venture capital, commercial banks, and government agencies will increase organizational performance.

Interactions. Above hypotheses suggest that internal capabilities and linkages to external entities individually influence organizational performance. While internal capabilities indicate organization's ability to transform inputs into outputs efficiently, corporate social capital - organization's linkages to external entities - determines ability to mobilize inputs needed for transformation and to dispose outputs (Burt, 1992). Internal capabilities help a firm to build social capital, since a firm with a higher level of distinctive capabilities is more likely to be selected as an alliance partner by other firms (Chung, Singh, & Lee, 1999). Corporate social capital also facilitates the accumulation of internal capabilities, because other firms linked to the focal firm offer access to valuable information, resources, and economic opportunities that are necessary for the accumulation of internal capabilities (Knoke, 1999).

Organization of which transformation capabilities are much greater than capabilities for garnering inputs and disposing outputs cannot fully utilize its transformation capabilities, since it has a difficulty in mobilizing necessary inputs from environment and in disposing outputs at a reasonable price. When the quality and performance of the outputs and the value of transformation capabilities can be accurately measured without substantial cost, external entities can rely on the measurement in deciding if they will transact with the focal firm. When the measurement is not easy as in the case of the output of technology-based young organizations, even a firm with a high level of transformation capabilities is not able to acquire extramural resources. It is because external entities face a great deal of uncertain in assessing the value of transformation capabilities and potential outputs.

Organization of which capabilities for garnering inputs and disposing outputs are much greater than transformation capabilities cannot acquire the inputs and dispose outputs in the long run. Social relations in which exchange between actors are not reciprocal for a long time

are likely to be broken, since one actor unilaterally sacrifices itself for the other for a long time (Chung, Singh, & Lee, 1999; Gouldner, 1960; Levi-Strauss, 1957). External entity that has exchange relations with a focal firm lacking transformation capabilities does not have strong incentive to maintain its relationship for a long time. In sum, organizations that keep the balance between internal capabilities and social capital can fully utilize them and thus can perform well. These discussions lead us to the following hypothesis.

Hypothesis 6. Internal capabilities and linkages to external entities will have positive interaction effect on organizational performance.

METHODS

Sample and Procedures

Population of our study is technology-intensive young Korean firms. We sampled firms from those firms that were enrolled as a venture company in Korean Small & Medium Business Administration. At the end of 1998, 2043 firms were enrolled. Among them, 1012 firms were producing computer software, electric and electronic products, and biotechnological products. We sent questionnaire to all of the 1012 firms. 175 firms (19 % response rate) responded to the questionnaire. To reduce unobserved heterogeneity, we deleted 19 firms that were founded by a joint venture of large Korean conglomerates or founded before 1983. We also deleted 13 additional responding firms due to missing information. As a result, we used data from 143 firms.

The data collection procedures are as follows. First, we interviewed top executives and upper echelon managers of 50 firms to find key variables that affect the performance of our sample firms. We also pretested our questionnaire by using 11 firms in December 1998. All of the questions in the final questionnaire asked factual (not perceptual) information. Most of prior empirical studies that measure entrepreneurial orientation use the several items with Likert 5 Scales. But this subjective measurement could have some problems (Chandler & Chandler, 1994; Jennings & Lumpkin, 1989). We sent the questionnaire to the CEO or founding members. These individuals were chosen because of their extensive knowledge of their firm's organizational characteristics. Considering smallness of our sample firms and their newness, they were very likely to have correct information. Also questioning factual information rather than perceptual information would enhance the accuracy of our data. The key informant method has been commonly used in organizational research when secondary archival data were not available (Hansen & Wernerfelt, 1993). 102 firms indicated that their top executive responded the questionnaire. Remaining 46 firms pointed out that top echelon managers filled out the questionnaire. The respondents were followed by phone calls to clarify any incomplete data.

Measurement of Internal Capabilities

We measured internal capabilities by three indicators; entrepreneurial orientation, technological resources, and financial resource invested.

Entrepreneurial orientation. Following suggestions of Miller (1983), Covin and Slevin (1991), and Stevenson and Jallio (1990), we measured entrepreneurial orientation by three



indicators: innovativeness, risk-taking propensity, and proactiveness. As Lumpkin and Dess (1996) suggested, we measured innovative activities as the number R&D employees divided by the total number of employees in 1997. We measured risk-taking propensity by two indicators; (1) the number of risk-taking R&D projects divided by total number of R&D projects in 1997 and (2) R&D expenditure per risk-taking R&D project (total risk-taking R&D expenditure / the total number of risk-taking projects in 1997). We treated a project for developing a brand new product as least in Korean industry as a risk-taking R&D project. Proactiveness were captured by three index by the ratio of market research costs to sales volume, the ratio of advertising expense to sales volume, and the ratio of the number of sales employees to total number of employees. Reliability test by using factor analysis suggested the deletion of proactiveness indicators. To create a single composite indicator for entrepreneurial orientation, we standardized an indicator of innovativeness and two indicators of risk-taking propensity by using mean and standard deviation of the corresponding indicator and added the three standardized scores.

Technological capabilities. We measured technological capabilities by three indicators; (1) the number of technologies developed by themselves, including the number of patents and patents submitted, (2) the number of utility model patents and designs that were registered to the Korean Patents Administration, and (3) the number of foreign and domestic quality assurance marks acquired. We standardized each of the indicators by using the mean and standard deviation of corresponding indicator and added them up to create a single indicator. Prior studies have used the number of patents (e.g., Miller & Shamise, 1996) or subjective indicators (e.g., Chandler & Hanks, 1994) to measure technological capabilities. Since the average age of our sample firms are 3 years and acquiring a patent usually takes three or more years, we could not use the number of patents only.

Financial resources invested. We measured financial resources invested by the amount of total R&D investment, advertising and market research investment in 1997. Schoonhoven et al. (1990) measured financial resources invested with monthly average of total costs and expenses accrued after organizational founding. The logic is that organizational performance largely depends on the amount of financial resource invested during the previous years.

Measurement of Linkages to External Entities

We differentiated linkages to external entities into two kinds. First, partnership-based linkage is more explicit and reciprocal relationship with external entities. Second, sponsorship-based linkage is a kind of uni-directional relationship. External entities provide unconditional support or long-term investment.

Partnership-based linkages. We measured partnership-based linkages by three indicators. The first indicator is the number of other firms with which a focal firm has a strategic alliance for marketing or technology development. The second is the number of formal associations for entrepreneurs and informal entrepreneur's network that a focal firm participates in. The third is the number of collaborating R&D projects and technology exchange programs with universities or research institutes.

Sponsorship-based linkages. We measured sponsorship-based linkages by three

indicators. The first indicator is the number of venture capital firms that invested equity in the focal firm. The second is measured by two index; (1) the number of cases in which financial institutes named the focal firm as a promising small enterprise, and (2) the number of financial institutes from which the focal firm received a loan with a below market interest rate during 1997. We standardized each of the two indicators by using the mean and standard deviation of corresponding one and added them up to create a single indicator. The third is measured by two index; (1) the number of cases in which Korean central or local governments named the focal firm as a promising small enterprise, and (2) the number of government research projects that the focal firm executed alone or with other organizations during 1997. We standardized each of the two indicators by using the mean and standard deviation of corresponding one and added them up to create a single indicator.

Measurement of Organizational Performance

How can we measure the performance of technology-based young enterprises? Profitability such as ROI (return-on-investment) may not be an appropriate performance indicator for those firms, because many of them are usually in the stage of product development (Hart, 1995). In addition, it is very difficult to gather accurate accounting data, since many of those firms did not establish an accurate formal accounting system yet. We could not use the speed of shipping first product for revenues after foundation (Schoonhoven et al, 1990), organizational growth (Eisenhardt and Schoonhoven, 1990) or organizational survival (Brüderl, Preisendörfer, & Ziegler, 1992), since we did not have firm level data from the founding. After interviewing top managers of our sample firms and considering prior studies on technology-based young enterprises, we selected two indicators; sales volume and the competitiveness of products/services.

Sales volume. Sales volume is the amount of sales during 1998. Entrepreneurs are very interested in sales volume and it is not sensitive to accounting methods that the focal firm adopted (Chandler & Hanks, 1994).

Competitiveness of products/services. We developed the second measure to reflect the fact that entrepreneurs usually found new firms with the objectives of outcompeting or replacing existing companies or creating a new market niche. To measure the competitiveness of products/services, we asked five questions about the competitiveness of products/services that the focal firm sold in 1998; (1) the number of products/services of which performance or quality was improved in 1998, (2) the number of products/services of which production cost competitiveness was enhanced in 1998, (3) the number of products/services that created a new market niche in 1998, (4) the number of products/services that penetrated established market successfully in 1998, and (5) the number of products/services that substituted significantly import from foreign countries in 1998. We divided the five numbers by the total number of products/services that the focal firm was selling, and then we computed the average of the five ratios. The average ratio indicates the percentage of products/services that had or improved competitiveness. Since the ratio itself does not inform us financial contribution to the focal firm, we multiplied the ratio and sales volume. Sales volume data for each of products/services with competitiveness would be more desirable, but we could not gather those data. Therefore, we estimated the sales volume from products/services with competitiveness. The measurement error would produce less significant coefficients for



independent variables, and likely to generate conservative bias in interpreting results.

Control variables

We controlled for variables that may affect performance indicators. Controlled variables include firm size measured by the total number of employees in 1997. We controlled for the average growth rate of market that the focal firm participated in during 1997 and the number of competing firms in 1997, since they can indicate environmental munificence (Chandler & Hanks, 1994; Schoonhoven et al. 1990). Also controlled is the length of founder's industry experience that would have positive effects on organizational performance (Brüderl, Preisendörfer, & Ziegler, 1992). We also controlled for organizational age that is the number of years elapsed after founding since it would positively influence performance as "liability of newness" arguments suggest (Stinchcombe, 1965).

Analysis

We employed ordinary least squares (OLS) regression to analyze the data. As we already mentioned in measurement section, we lagged the effect of independent variables at least one year. Two dependent variables were the organizational performance in 1998, while independent variables were either 'stock' indicators at the end of 1997 or 'flow' indicators before the end of 1997. We selected the length of lagging effect on the basis of interviews with top executives. The lagged dependent variable model would be a more rigorous test of the effects of firm characteristics on firm performance (Mosakovski, 1993).

In order to test the additive effects of internal capabilities, external linkages, and the interaction between internal capabilities and external linkages, we ran four different models for each dependent variable. The first model with only control variables is a benchmark against which to test the effects of internal capability on organizational performance. The second model has both control variables and internal capabilities in order to test positive global effects of complementarity in comparison to the first model. The third adds external linkages to the second model. The last model is a full model that includes control variables, internal capabilities, external linkages and interaction terms. It tests the additive effects of interaction terms on alliance formation relative to the third model.

RESULTS

Table 1 provides the means, standard deviations, and correlations of all variables. Positive and significant correlations between internal capability indicators and social capital indicators suggest that internal capabilities can help the development of social capital and vice versa. Also notable are positive and significant correlations among social capital indicators. Table 2 and 3 reports the results of four regression models explaining sales volume and competitiveness of services/products respectively.

Insert Table 1 about Here

Global tests. We conducted a series of global tests comparing successive models by using incremental F-test, as shown in the bottom of Table 2 and 3. The first global test indicates that Model II, which includes internal capabilities, as well as control variables,

explains the sales volume and the competitiveness of services/products significantly better than Model I, which has control variables only ($p < .001$). Also, the second global test indicates that Model III, which uses external linkages, explains the dependent variables significantly better than Model II ($p < .001$). The final global test shows that addition of interaction terms significantly improves explaining power of the model ($p < .001$). These global tests indicate that we have to consider internal capabilities, external linkages, and their interaction terms together to explain the performance of technology-based young organizations better.

Insert Table 2 about Here

Insert Table 3 about Here

Internal capabilities. We can test each of the hypotheses on the basis of the Model IV results. Hypothesis 1 suggests that internal capabilities of organization is positively associated with organizational performance. As the hypothesis predicts, financial resources invested positively influence both indicators of organizational performance. Entrepreneurial orientation does not have any significant effect on the dependent variables in Model IV. Contrary to the hypothesis, technological capabilities significantly decrease both indicators of organizational performance in Model IV. While the variable has significant and positive effect on the dependent variables in the other models, the positive coefficient becomes negative one when we introduce interaction terms in Model IV. Hypothesis 1 is not supported.

External Links. Hypothesis 2 suggests that linkages to external entities is positively associated with organizational performance. As the hypothesis predicts, linkages to other enterprises and venture capital companies have positive and significant influence on both indicators of organizational performance. Contrary to the hypothesis, linkages to commercial banks significantly decrease both indicators of the dependent variables. Linkages to government significantly decrease sales volume but significantly increase product competitiveness. Linkages to universities/research institutes do not have any effect on sales volume but have significantly negative effect on product competitiveness.

Interactions. The effect of interaction terms are mixed in general. Several interaction terms have positive influence on organizational performance, while other terms have negative influence on the dependent variables.

DISCUSSION AND CONCLUSIONS

This study provides several theoretical and practical implications for researchers and managers who are concerned with technology-based young organizations. First of all, this study showed the importance of financial capital invested and technological capabilities. Financial resources invested are as important as technological resources in determining organizational performance in the context of technology-based young organizations. The venture managers have to accumulate technological capabilities and to accurately assess market opportunities for venture success.

Second, the results of this study showed that linkages to external entities are very important for venture success as social capital theory suggested. Among various linkages, strategic alliances with venture capital companies, suppliers and customers are critical for



venture success. Sponsorship-based relationships are not so important for enhancing organizational performance.

Third, this study showed that there are very strong interaction effects of internal capabilities and linkages to external entities. The result suggested that organizations should simultaneously develop internal capabilities and social capital.

The weakness in the present study provide some suggestions for future research. First, this study focused on the formal inter-organizational relationships. Future research needs to consider informal inter-organizational relationships or social network such as entrepreneur's and founding team's personal networks (Dubini & Aldrich, 1991; Ostgaard & Birley, 1994). The study of analyzing both of them could reveal the dynamics of external resource mobilization through social networks and furnish comprehensive results about external resource mobilizing of capabilities.

Second, future research can examine conditions under which the interaction effects of internal capabilities and corporate social capital are more prevalent. We claimed that difficulty in evaluating the outputs of a firm and the firm itself increases the strength of interaction effects. The results of this study showed that the interaction effects are very strong in the current setting, but did not showed that they are not strong in other less uncertain conditions.

Third, we could not use longitudinal methodology due to limitations in collecting data. Future research can collect data from the founding of sample firms and investigate other kinds of performance indicators such as survival, growth rate, and time interval between founding and the shipment of first commercial product for generating revenue.

REFERENCES

- Aldrich, H. E., & Zimmer, E. R. 1986, Entrepreneurship through social network, In D. L. Sexton & R. W. Smilor (Eds.) *The art and science of entrepreneurship*: 3-24 Cambridge, MA: Ballinger Publishing.
- Aldrich, H. E. 1979. *Organizations and Environment*. Englewood Cliffs, N.J.: Prentice-Hall.
- Amit, R., & Schmaker, P. J. 1993. Strategic assets and organizational rent. *Strategic Management Journal*, 14: 33-46.
- Astley, W. G., & Van de Ven, A. 1983. Central perspectives and debates in organization theory. *Administrative Science Quarterly*, 28: 245-273.
- Astley, W. G. 1984. Toward an appreciation of collective strategy. *Academy of Management Review*, 9: 536-535.
- Barney, J. B. 1986a. Organizational culture: Can it be a source of sustained competitive advantage? *Academy of Management Review*, 29(2): 656-665.
- Barney, J. 1986b. Strategic factor markets: Expectation, luck, and business strategy. *Management Science*, October: 1231-1241.
- Baum, J. A. C., & Oliver, C. 1991. Institutional linkages and organizational mortality. *Administrative Science Quarterly*, 36(2): 187-219.
- Birley, S. 1985. The role of networks in the entrepreneurial process. *Journal of Business Venturing*, 1: 107-117.
- Bogaert, I., Martens, R., & Van Cauwenbergh, A. 1994. Strategy as a situational puzzle: The fit of components. In Hamel, G., & Heene, A. (Ed.), *Competence-Based Competition*: 57-74. New York: John Wiley & Sons.
- Bollinger, L., Katherine Hope, & James M. Utterback 1983. A review of literature and hypotheses on new technology-based firms. *Research Policy*, 12(1): 1-14.
- Brush, C. G., & Chaganti, R. 1997. Cooperative strategies in non-high-tech new ventures: An exploratory study. *Entrepreneurship Theory and Practice*, Winter: 37-54.
- Cable, D. M., & Shane, S. 1997. A prisoner's dilemma approach to entrepreneur-venture capitalist relationship. *Academy of Management Review*, 22(1): 142-177.
- Castanias, R. P., & Helfat, C. E. 1991. Managerial resources and rents. *Journal of Management*, 17: 155-171.
- Castrogiovanni, G. J. 1991. Environmental munificence: A theoretical assessment. *Academy of Management Review*, 16: 542-565.



- Chandler, G. N., & Hanks, S. H. 1994a. Founder competence, the environment and venture performance. *Entrepreneurship: Theory and Practice*, 18(3): 77-90.
- Chandler, G. N., & Hanks, S. H. 1994b. Market attractiveness, resource-based capabilities, venture strategies and venture performance. *Journal of Business Venturing*, 9(4): 331-350.
- Conner, K. 1991. A historical comparison of resource-based theory and five schools of thought within industrial organization economics: Do we have a new theory of the firm? *Journal of Management*, 17: 121-154.
- Covin, J., & Slevin, D. P. 1986. The development and testing of an organizational-level entrepreneurship scale. In B. A. Kirchoff, W. A. Long, W. E. McMillan, K. H. Vesper, & W. E. Wetzel (Eds.), *Frontier of Entrepreneurship Research*: 628-639. Wellesley, MA: Babson College.
- Covin, J. G., & Slevin, D. P. 1989. Strategic management of small firms in hostile and benign environments. *Strategic Management Journal*, 10: 75-87.
- Covin, J. G. & Slevin, D. P. 1991. A conceptual model of entrepreneurship as firm behavior. *Entrepreneurship: Theory and Practice*, 16(1): 7-24.
- Delery, & Doty, D. H. 1996. Modes of theorizing in strategic human resource management: Tests of universalistic, contingency, and configurational performance predictions. *Academy of Management Journal*, 9(4): 802-836.
- Dierickx, I., & Cool, K. 1989. Asset stock accumulation and sustainability of competitive advantage. *Management Science*, 35: 1504-1511.
- Dollinger, M. J., & Peggy, A. G. 1992. Inter organizational and collective strategies in small firms: Environmental effects and performance. *Journal of Management*, 18(4): 695-716.
- Dollinger, M. J. 1995. *Entrepreneurship: Strategies and resources*. Boston: Irwin.
- Dubini, P. & Aldrich, H. E. 1991. Personal and extended networks are central to entrepreneurial process. *Journal of Business Venturing*, 6(5): 305-313.
- Eisenhardt, K. M., & Schoonhoven, C. B. 1990. Organizational growth: Linking founding team strategy, environment and growth among U.S. semiconductor ventures, 1978-1988. *Administrative Science Quarterly*, 35(3): 504-530.
- Eisenhardt, K. M., & Schoonhoven, C. B. 1996. Resource-based view of strategic alliance formation: strategic and social effects in entrepreneurial firms. *Organization Science*, 7(2): 136-150.
- Flood, P. C., Fong, C, M, Smith, K. G., O'Regan, P., Moore, S., & Morley, M. 1997. Top management teams and pioneering: A resource-based view. *The International Journal of Human Resource Management*, 8(3): 291-306.

- Flynn, D. M. 1993. Sponsorship and the survival of new organizations. *Journal of Small Business Management*, 31: 51-63.
- Granovetter, M. 1992. Problems of explanation in economic sociology. In Nohria & R. Eccles (Eds.), *Networks and organization*: 25-56. Boston, MA: Harvard Business School Press.
- Grant, R M. 1991. A resource-based theory of competitive advantage: Implications for strategy formulation. *California Management Review*, Spring: 114-135.
- Hakansson, H., & Johnson, J. 1993. The network as a governance structure. In Grabher, G. (Ed.), *The embedded firm, the socio-economics of industrial network*: 78-105. London: Routledge.
- Hall, R. 1991. The contribution of intangible resources to business success. *Journal of General Management*, 16(4): 41-52.
- Hall, R. 1993. The strategic analysis of intangible resource. *Strategic Management Journal*, 13: 135-144.
- Hamel, G. 1994. The concept of core competence. In Hamel, G., & Heene, A. (Eds.), *Competence-based competition*: 11-33. New York: John Wiley & Sons.
- Hart, M. M. 1995. *Founding resource choices*. Harvard University, DBA Degree.
- Herron, L., Sapienza, H. J., & Smith, D. S. 1992. Entrepreneurship theory from an interdisciplinary perspective: Volume ? . *Entrepreneurship Theory and Practice*, Spring: 5-11
- Hofer, C. W., & Sandberg, W. R. 1987. Improving new venture performance: Some guidelines for success. *American Journal of Small Business*, 12(1): 11-26.
- Itami, H. 1987. *Mobilizing invisible assets*. Cambridge, MA: Harvard Business Press.
- Jennings, D. F., & Lumpkin, J. R. 1989. Functioning modeling corporate entrepreneurship: An empirical integrative analysis. *Journal of Management*, 15(3): 485-503.
- Jennings, D. F. 1994. *Multiple perspectives of entrepreneurship: Text, Readings and Cases*. Cincinnati Ohio: South Western Publishing Co..
- Kao, Raymond W. Y. 1995. *Entrepreneurship: A wealth-creation and value-adding process*. New York: Prentice-Hall.
- Kirzner, I. M. 1983. Entrepreneurs and the entrepreneurial function: A commentary. In Ronen J. (Ed.), *Entrepreneurship*: 281-290. Lexington Books, Lexington, Mass.
- Larson, A. 1992. Network dyads in entrepreneurial settings: A study of the governance of exchange process. *Administrative Science Quarterly*, 37: 76-104.



- Lenz, R. T. 1980. Strategic capability: A concept and framework for analysis. *Academy of Management Review*, 5(2): 225-234.
- Lumpkin, G. T., & Dess, G. G. 1996. Clarifying the entrepreneurial orientation construct and linking it performance. *Academy of Management Review*, 2(1): 135-172.
- Mahoney, J., & Pandian, J. R. 1992. The resource-based view within the conversation of strategic management. *Strategic Management Journal*, 13: 363-380.
- Mahoney, J. T. 1995. The management of resources and the resource of management," *Journal of Business Research*, 33: 91-101.
- Miller & Shamise 1996. The resource-based view of the firm in two environments: The Hollywood Film Studios from 1936 to 1965. *Academy of Management Journal*, 39(3): 519-44.
- Miner, A., Amburgey, J., & Sterns, T. 1990. Interorganizational linkages and population dynamics: Buffering and transformational shields. *Administrative Science Quarterly*, 35: 685-713
- Morris, M. H., Davis, D. L. & Allen, J. W. 1994. Fostering corporate entrepreneurship: Cross-cultural comparisons of the importance of individualism versus collectivism. *Journal of International Business Studies*, 25(1): 65-90.
- Mosakowski, E. 1993. A resource-based perspective on the dynamic strategy-performance relationship: An empirical examination of the focus and differentiation strategies in entrepreneurial firms. *Journal of Management*, 19(4): 819-839.
- Naman, J. L., & Slevin, D. P. 1993. Entrepreneurship and the concept of fit: A model and empirical tests. *Sloan Management Journal*, 14: 137-153.
- Ostgard, T. A. & Birley, S. 1994. Personal networks and firm competitive strategy: A strategic or coincidental match? *Journal of Business Venturing*, 9(4): 281-305.
- Pennings, J .M. 1982. Commentary / elaboration: Elaboration on entrepreneur and his environment. In Kent, C. A., Sexton, D. L., & Vesper, K. H. (Eds.), *Encyclopedia of Entrepreneurship*: 307-315. Englewood Cliffs, NJ: Prentice-Hall.
- Pennings, J. M., & Harianto, F. 1992. Technological networking and innovation implementation. *Organization Science*, 3(3): 356-382.
- Pennings, J. M., Lee, K., & Witteloostuijn, A. 1998. Human capital, social capital, and firm dissolution. *Academy of Management Journal*, 1.4(4): 425-440.
- Penrose, E. T. 1959. *The growth of the firm*. New York: M. E. Sharpe, Inc..
- Peteraf, M. A. 1993. The cornerstones of competitive advantage: A resource-based view. *Strategic Management Journal*, 14: 179-192. .

- Pfeffer, J., & Salancik, G. R. 1978. *The external control of organizations: A resource dependence perspective*. New York: Harper & Row, Pub..
- Prahalad, C. K. & Hamel, G. 1990. The core competencies of the corporation. *Harvard Business Review*, May-June: 79-91.
- Reed, R., & DeFillippi, R. J. 1990. Causal ambiguity, barriers to imitation, and sustainable competitive advantage. *Academy of Management Review*, 15: 88-102.
- Romanelli, E. 1989. Environments and strategies of organization start-ups: Effects on early survival. *Administrative Science Quarterly*, 34(3): 369-388.
- Ronen, J. 1988. Individual entrepreneurship and corporate entrepreneurship: A tentative synthesis. *Entrepreneurship, Innovation and Economic Growth*, 2: 243-267.
- Rumelt, R. P. 1984. Toward a strategic theory of the firm. In R. Lamb(Ed.), *Competitive Strategic Management*: 556-570. Prentice Hall, Englewood Cliffs, MD.
- Sandberg, W. R., & Hofer, C. W. 1987. Improving new venture performance: The role of strategy, industry structure and the entrepreneur. *Journal of Business Venturing*, 2: 5-28.
- Schoonhoven, C. B., Eisenhardt, K. M., & Lyman, K. 1990. Speeding products in market: Waiting time to first product introducing in new firms. *Administrative Science Quarterly*, 35(1): 177-208.
- Schuler, R. D. 1986. Fostering and facilitating entrepreneurship in organizations: Implications for organization structure and human resource management practice. *Human Resource Management*, 25(4): 607-629.
- Schumpeter, J. A. 1934. *The theory of economic development*. Cambridge, MA: Harvard University Press.
- Schumpeter, J. A. 1942, *Capitalism, socialism and democracy*. NY: Harper & Brothers.
- Schumpeter, J. A. 1947. The creative response in economic history. *Journal of Economic History*, 7: 149-159.
- Shrader, R. C. & Simon, M. 1997. Corporate versus independent new ventures: Resource, strategy and performance differences. *Journal of Business Venturing*, 12: 47-66.
- Specht, P. H. 1993. Munificence and carrying capacity of the environment and organization formation. *Entrepreneurship: Theory and Practice*, 17(2): 77-87.
- Stapford, J. M. & Baden-Fuller C. W. F. 1994. Creating corporate entrepreneurship. *Strategic Management Journal*, 15(7): 521-537.
- Starr, Jennifer Ann. 1996. Resource parsimony, resource cooptation and habitual



entrepreneurs: New concepts for entrepreneurship theory and research. University of Pennsylvania, Ph.D. Dissertation.

Stevenson, H. H., & Jarillo, J. C. 1990. "A paradigm of entrepreneurship: entrepreneurial management. *Strategic Management Journal*, Special Issue, 11: 17-27.

Stinchcombe, A. L. 1965. Social structure and organizations. In James G. March (Ed.), *Handbook of Organizations*: 142-193. Chicago: Rand McNally.

Timmons, J. A., & Bygrave, W. D. 1986. Venture capital's role in financing innovation for economic growth. *Journal of Business Venturing*, 1(2): 161-176.

Tjosvold, D., & Weicker, D. C. 1993. Cooperative and competitive networking by entrepreneurs: A critical incident study. *Journal of Small Business Management*, Jan.: 11-21.

Van de Ven, A. H., R. Hudson & D. M. Schroder 1984. Designing new business startups entrepreneurial, organizational, and ecological considerations. *Journal of Management*, 10(1): 87-107.

Wernerfelt, B. 1984. A resource-based view of the firm. *Strategic Management Journal*,: 171-180.

Zahra, S. A., & Covin, J. G. 1995. Contextual influences on the corporate entrepreneurship performance relationship: A longitudinal analysis. *Journal of Business Venturing*, 19: 43-58.

Zahra, S. A. 1991. Predictors and financial outcomes of corporate entrepreneurship: An explanatory study. *Journal of Business Venturing*, 6: 259-285.

Zahra, S. A. 1993. A conceptual model of entrepreneurship as firm behavior: A critique and extension. *Entrepreneurship: Theory and Practice*, Summer: 5-21.

Table 1

Descriptive Statistics and Correlation Matrix (N=143)

Note : $p < .05$ if $|r| > .13$

Variables	Mean	S.D.	1	2	3	3-1)	3-2)	3-3)	4.	5.	6.	7.	8.	9.	10.	11	12	13	14	15	
1. Sales Volume in 1998	42.4118	103.5793																			
2. Product Competitiveness in 1998	15.5392	43.8540	.69																		
3. Entrepreneurial Orientation of the firm	0.0727	0.4763	.05	.21																	
1) Innovativeness	41.4083	23.3601	-.12	.03	.72																
2) Risk-taking	0.0675	0.6281	.30	.28	.43	-.17															
3) Proactiveness	0.0336	0.9630	-.16	-.10	.20	.27	-.07														
4. Technological resource	-0.052	0.6209	.49	.52	.00	-.10	.21	-.07													
5. Financial resource	569.60	1287.93	.91	.53	.07	-.03	.21	-.09	.36												
6. Linkages to other enterprise	3.0070	5.3214	.01	-.03	-.06	.04	-.21	-.05	.00	-.00											
7. Linkages to venture networks	0.9580	1.1313	.06	.16	.05	.07	-.08	-.02	.18	.54	.11										
8. Linkages to universities	1.9021	1.9548	.12	.15	.01	.09	-.14	.15	.35	.07	.33	.20									
9. Linkages to venture capital	0.4965	1.1313	.71	.55	.07	.03	-.04	-.14	.35	.66	-.01	.18	.16								
10. Linkages to financial institutes	-0.0295	0.8267	.31	.36	-.12	-.11	-.10	-.05	.43	.21	.03	.23	.16	.35							
11. Linkages to government	-0.0257	0.9344	.32	.33	-.10	-.06	-.14	-.10	.49	.27	.07	.34	.13	.39	.62						
12. Organizational size	30.7692	43.6321	.78	.40	-.16	-.30	.12	-.18	.44	.73	-.02	.07	-.00	.64	.50	.54					
13. Organizational age	4.5944	3.3802	.34	.17	-.22	-.35	.06	-.14	.35	.23	.06	.09	.05	.25	.27	.28	.46				
14. Entrepreneur's experience	14.4406	7.2991	.09	.08	-.04	-.06	.01	.14	.18	.08	.01	-.06	.11	.05	.10	.17	.16	.36			
15. Market growth rate	89.2132	265.5017	.03	.06	.27	.25	.02	.82	.04	.02	-.07	-.05	.15	-.03	-.01	-.07	-.05	-.08	.18		
16. Number of competitors	10.3038	17.4774	.14	.06	.05	.17	.02	-.09	.00	.14	.03	-.02	-.06	.13	.09	.10	.11	.04	.13	.04	



TABLE 2
Results of OLS Models : Sales Volume in 1998 (N = 143)

Variables	Model I	Model II	Model III	Model IV
Intercept	-10.473 (12.837)	-4.456 (7.805)	-8.166 (9.098)	-18.512 (7.109)
Organizational size	1.870*** (.142)	.424*** (.123)	.455*** (.145)	.544*** (.118)
Organizational age	-.127 (1.953)	2.087* (1.148)	1.791 (1.125)	.103 (.815)
Entrepreneur's experience	-.689 (.830)	-.644 (.473)	-.490 (.466)	-.154 (.322)
Market growth rate	.0292 (.021)	.0839 (.012)	.0674 (.012)	.0406 (.009)
Number of competitors	.319 (.318)	.112 (.182)	.114 (.178)	.115 (.123)
Entrepreneurial orientation		7.114 (7.232)	5.597 (7.101)	.894 (5.002)
Technological capabilities		24.694*** (5.753)	28.632*** (6.447)	-40.976*** (10.527)
Financial resource		.0568*** (.004)	.0509*** (.004)	0.0737*** (.007)
Linkage to other enterprise			.351 (.618)	2.042*** (.572)
Linkage to venture networks			-1.926 (2.955)	2.307 (2.265)
Linkage to universities			.293 (1.887)	1.613 (1.649)
Linkage to venture capital			11.534*** (3.912)	10.585*** (3.011)
Linkage to financial institutes			3.254 (5.007)	-11.600** (4.514)
Linkage to government			-12.270*** (4.830)	-6.965* (4.058)
Technological resource x Linkage to other enterprise				10.963*** (1.401)
Financial resource x Linkage to other enterprise				-0.0056*** (.002)
Technological resource x Linkage to venture networks				18.382*** (2.719)
Financial resource x Linkage to financial institutes				.0421*** (.006)
Technological resource x Linkage to government				-39.250*** (5.110)
Financial resource x Linkage to universities				-.0112*** (.002)
Technological resource x Linkage to venture capital				20.073*** (5.037)
Adj. R2	.605	.872	.881	.946
Incremental F-test		80.284***	2.655***	114.585***

Note: Standard errors are in parentheses.

* p < .10; ** p < .05; *** p < .01

TABLE 3
Results of OLS Models : Product Competitiveness in 1998 (N = 143)

Variables	Model I	Model II	Model III	Model IV
Intercept	1.649 (8.040)	10.011 (7.085)	15.288 (8.098)	1.735 (3.813)
Organizational size	.410*** (.089)	-.0513 (.112)	-.324** (.129)	.119* (.063)
Organizational age	-.267 (1.223)	-.0794 (1.042)	-.0395 (1.002)	-.152 (.428)
Entrepreneur's experience	.0807 (.520)	0.0014 (.430)	.149 (.415)	-.0245 (.170)
Market growth rate	.0129 (.013)	-.0015 (.011)	.0024 (.011)	.0032 (.005)
Number of competitors	.0170 (.199)	.0119 (.165)	-.0927 (.158)	.135** (.065)
Entrepreneurial orientation		15.811** (6.565)	11.966* (6.321)	1.972 (2.652)
Technological capabilities		28.301*** (5.222)	25.627*** (5.738)	-6.221* (3.278)
Financial Resource		.0141*** (.003)	.0132*** (.004)	.0124*** (.004)
Linkage to other enterprise			.0674 (.550)	1.108*** (.350)
Linkage to venture networks			.360 (2.631)	.702 (1.184)
Linkage to universities			-2.284 (1.680)	-3.149*** (.863)
Linkage to venture capital			12.136*** (3.482)	3.443** (1.605)
Linkage to financial institutes			10.406** (4.457)	-5.559** (2.405)
Linkage to government			.121 (4.299)	4.723* (2.814)
Financial resource x Linkage to universities				.0069*** (.001)
Financial resource x Linkage to other enterprise				-.0040*** (.001)
Financial resource x Linkage to financial institutes				.0225*** (.003)
Technological resource x Linkage to venture networks				10.805*** (1.360)
Financial resource x Linkage to government				-.017*** (.003)
Technological resource x Linkage to venture capital				7.582*** (2.213)
Financial resource x Linkage to venture capital				-.0012** (.001)
Adj. R2	.135	.412	.474	.916
Incremental F-test		22.514***	3.615***	291.937***

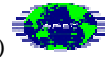
Note: Standard errors are in parentheses.

* p < .10; ** p < .05; *** p < .01

**THE ROLE OF ETHICAL DECISION MAKING STYLES IN
JUDGMENTS OF ETHICAL O. D. CONSULTING BEHAVIOR**

Louis P. White

**School of Business and Public Administration
University of Houston – Clear Lake (USA)**



THE ROLE OF ETHICAL DECISION MAKING STYLES IN JUDGMENTS OF ETHICAL O.D. CONSULTING BEHAVIOR

ABSTRACT

The study demonstrates that individuals classified in accordance, with Forsyth's (1980) four ethical decision making styles differentially evaluate the ethicality of fifteen of fifteen types of O.D. interactions. The differences between each of the four groups are shown to be related to two types of client-consultant interactions: (1) withholding of information and resources and (2) willful misrepresentation, manipulation and misuse of data. The findings shed light on an issue not previously addressed in the O.D. literature, yet considered critically important to the success of O.D. intervention efforts. Implications of the results of the results for the training of new O.D. practitioners and for resolution of client-consultant conflicts are discussed.

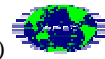


To what extent can ethical judgements of organizational development consulting behavior be explained by individual differences in ethical decision making styles? Unfortunately, the answer is not available in the existing Organization Development (O.D.) literature. O.D. scholars have contributed case studies and narrative descriptions of interactions leading to ethical dilemmas (e.g., French and Bell, 1984; Huse, 1980; Lippit and Lippit, 1978; Maidment and Losito, 1980; Miles, 1979; Pfeiffer and Jones, 1977; Shay, 1965; Walton and Warwick, 1973; Warwick and Kelman, 1973; Zaltman and Duncan, 1976). Further, they have produced empirical results indicating that ethicality rating depend upon the nature of the client-consultant interaction being evaluated (Rhodeback, Lai and White, 1990) and have shown that these ratings are culturally dependent (White and Rhodeback, 1992).

Whereas scholarly case studies and narrative descriptions facilitate a preliminary understanding of the ethical dilemmas confronting the change agent and client system, Rhodeback, et. al. (1990) and White and Rhodeback (1992) have demonstrated empirically that those outside the field can recognize and evaluate the ethicality of client-consultant interactions. Moreover, these studies have isolated two sources of judgements of variation: the nature of the behaviors being judged and the cultural membership of the rater. Extant cultural differences do suggest, among other possibilities, that variations in judgements of ethical behavior may be related to differences in ethical decision making styles; however, White and Rhodeback did not address why, within respective cultures, ethical judgments vary.

The conspicuous absence of attempts to empirically elaborate on the role of individual differences in judgements of ethical O.D. consulting behavior is critical for two reasons. First, a successful intervention effort involves a reciprocal relationship between the change agent and various members of a client system (White and Wooten, 1983). This indicates that at least two individuals will bring their respective, and potentially different, ethical decision making styles to the consulting table. Knowing how these styles differ should enhance the client and consultant's ability to recognize in themselves and each other, an antecedent condition for role conflict. Secondly, if two or more parties do exhibit different ethical decision making styles, and conflicts do emerge, an understanding of these stylistic differences may facilitate constructive approaches to conflict resolution congruent with each individual's ethical value system.

Fortunately, scholars outside the O.D. field have conducted extensive research relevant to an understanding of individual differences in ethical judgements, including Hogan (1970,1973); Kelman and Lawrence (1972); Kohlberg (1968, 1976); Rest, Cooper, Coder, Masanz and Anderson (1974) and Schlenker and Forsyth (1977). Perhaps the most parsimonious of these explanations has been proffered by Schlenker and Forsyth. They suggest that there are two important dimensions underlying these differences: (1) the extent to which the individual accepts or rejects universal moral rules when making judgements and (2) the extent to which the individual believe that desirable consequences are always achieved with the right action. The first dimension has been labeled "Relativism" and the second, "Idealism". Forsyth (1981, 1984) has demonstrated that crossing the Relativism and Idealism dimensions yields an elegant four-group typology which can be used to describe differences in ethical decision making styles. Forsyth



characterizes these four groups as Situationists, Absolutonists, Subjectiveists and Exceptionists. A brief description of these different decision making is provided below:

Situationists

According to Forsyth (1980), Situationists are individuals who are highly Idealistic and highly Relativistic. These individuals reject moral absolutes when making ethical judgments and believe that desirable consequences always follow the right action. When evaluating the ethicality of a situation these individuals will carefully consider whether or not the right actions were taken. “Rightness” is purportedly based on an individual analysis of each situation’s consequences.

Absolutists

Forsyth notes that Absolutists are similar to Situations in that both are highly Idealistic, i.e. both believe that describe consequences always follow the right action; however, unlike Situationists the Absolutists endorse the application of universal moral rules. Absolutists reject the Relativistic approach to ethical decision making exhibited by the Situationists. No exceptions are allowed to moral “truths.” Good is good and bad is bad.

Subjectivists

Forsyth notes that subjectivists are similar to Situationists in that both are highly Relativistic. Like the Situationists, Subjectivists reject universal moral rules. However, unlike both the Situationists and Absolutists, Subjectivists are not high Idealists. They recognize that both good and bad consequences come from ethical decisions. As such the Subjectivist’s ethical decision making style reflects an emphasis on their individual values and perspectives rather than adherence to universal moral principles. According to Forsyth, these individuals are highly pragmatic. Judgments are not made out of concern for the extent to which they may harm others or whether or not the actions fit the context; instead, Subjectivists believe that every individual should make ethical decisions in keeping with one’s own perspective.

Exceptionists

Exceptionists are described by Forsyth as utilitarian and pragmatic. They are neither highly Idealistic nor highly Relativistic. This group is said to evaluate the ethicality of a situation by determining whether or not the actions taken produce the greatest good for the greatest number. Potential benefits of an action are weighted against the potential costs when making judgment of ethical behavior. While they may invoke moral rules, they are just as likely to exclude these rules when and if the greatest numbers of people could benefit.

Considered collectively, Forsyth refers to these different ethical decision making styles as “Ethical Ideologies”. These different ideologies have been shown to be related to differences moral judgments of social science research (Forsyth and Pope, 1984), but have not been examined in the context of ethical judgments relevant to organizational



development practice. If it can be assumed that Forsyth's results are generalizable, then one may expect that individuals using these different ethical decision making styles will differentially evaluate the ethicality of organizational development consulting interactions.

Hypothesis: Ethicality ratings of O.D. consulting behaviors will differ according to the individual's ethical ideology.

Given evidence to support the preceding hypothesis, the remainder of the study was intended to focus on describing and interpreting the differences among the four groups.

Previous research has suggested that different consulting interactions elicit different judgments of ethicality (Rhodeback, et. al., 1990; White and Rhodeback, 1992); therefore, it was anticipated that more than one linear combination of situations subject to ethical judgments would be needed to characterize group differences. Given this expectation, the following exploratory research questions were posed:

1. How many of three possible functions are useful in describing the nature of the group differences?
2. In the event that multiple functions can be used to describe these group differences:
 - a. In what ways do the groups resemble one another and in what ways do the groups differ?
 - b. Which consulting interactions define these functions?

Whereas, the first research question was intended to determine if groups might differ in more than one way, the second set of questions was intended to illustrate the meaning of those differences.

METHOD

Participants

Three hundred and twenty two (332) graduate business students enrolled in evening business courses at three universities completed two questionnaires, the White and Rhodeback Survey of Ethical Behavior in Organizational Development Consulting (White and Rhodeback, 1987) and Forsyth's (1978, 1980) Ethical Position Questionnaire. The age of the respondents ranged from 20 to 63, with a median age of 27. Fifty-eight percent (58%) of the respondents were male, thirty eight percent (38%) were female. The remaining subjects did not respond to this item. Most of the students (91%) were employed as managers, professionals or administrators. The remaining were full time students.

Measures

The Survey of Ethical Behavior in Organizational Development Consulting



(Rhodeback and White, 1987) was created by sampling from the domain of change agent and client behaviors which may lead to role conflict or ambiguity and subsequently, may produce ethical dilemmas (White and Wooten, 1986). The instrument is composed of 38 items which were combined to form fifteen scales. Each scale reflects client-consultant interactions described by organizational development scholars and practitioners as behaviors leading to ethical dilemmas (Gellerman, Frankel, and Ladenson, 1990; Macy and Izumi, 1993). The fifteen scales were created by forming composites of items designed to measure the same types of interactions. Individual item scores were derived from respondent assessments of each situation's ethicality using a five point Likert-type scale ranging from Very Ethical (5) to Very Unethical (1).

The Ethical Position Questionnaire Forsyth's (1978, 1980) methodology was used to identify each individual's ethical decision making style. Scale scores obtained from Forsyth's Ethical Position Questionnaire, were used to classify individuals as Situationists, Subjectivists, Absolutists or Exceptionists. In keeping with Forsyth's methodology, individuals were assigned to these classes based in the relative magnitude of each individual's score on two scales, Relativism and Idealism. Each of these scales is composed of ten items with each item eliciting a response of Agree-Disagree on a nine point continuum.

RESULTS

Test of the hypothesis: ethical ratings depend upon ethical decision making style.

A four group multivariate analysis of variance (MANOVA) was employed to test the global hypothesis that groups comprising the four ethical ideologies differ in their ethicality ratings of the fifteen consulting interactions. Group means and standard deviations for the fifteen scales are reported in table 1.

TABLE 1

The results of the global test revealed that at least two of the groups differed in their ethicality ratings ($F=2.37$, $df=45,894$; $p < .001$). pair-wise multivariate analyses of variance were employed to determine which of the four groups differed on the jointly considered scales. The experiment wise error rate was controlled by testing each at .034, in keeping with a Bonferroni approach. The results revealed that each group's ethicality ratings differed from every other group including: Subjectivists and Absolutists ($F=3.04$, $df=15,140$); Subjectivists and Situationists ($F=2.99$, $df=15,138$); Exceptionists and Situationists ($F=2.77$, $df=15,142$); Exceptionists and Absolutists ($F=2.58$, $df=15,144$); Exceptionists and Subjectivists ($F=1.91$, $df=15,142$); and Situationists and Absolutists ($F=1.91$, $df=15,140$). The results indicate that Subjectivists, Exceptionists and Absolutists to differ in their judgment of ethical consulting behavior.

Research question 1: the number of functions.

A multiple discriminant function analysis (MDA) was employed to interpret groups differences in the ratings of the fifteen scales. Since the MANOVA results were statistically significant it was known that the first of the three possible functions would



significantly separate the four groups. Successive tests of the remaining functions, with the receding function removed from consideration, indicated that the second function was significantly separating the groups (Wilk's $\lambda = .847$, $X^2 = 150.07$, 28df, $p < .01$), but the third function was not (Wilk's $\lambda = .93$, $X^2 = 219.86$, 13df, $p = .09$). a canonical correlation of .40 was obtained for the first function and .31 for the second function. This indicates that the proportion of total variability explained by differences between ethical ideologies is 25%. The percentage of the total, explainable variance attributable to each function is 53% and 29% for the first and second functions, respectively. This indicates that the first function is more closely aligned with group differences in ethical judgments than the second function.

Research question2a: Group resemblance and differences.

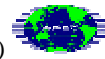
Figure 1 presents a graph of the group centroids for the two significant functions. The horizontal axis corresponds to the first discriminant function. The horizontal space between each group indicates how much the groups are distinguished from one another on this function. This first discriminant function separates the Low idealists (Exceptionists and Subjectivists) from the High Idealists (Absolutists and Situationists). Exceptionists and Subjectivists appear on the far right side of the graph, with the Absolutists and Situationists appearing on the far left side.

FIGURE 1

The graph indicates that individuals believing the right consequences will always follow the fight actions (Absolutists and Situationists) are more similar in their judgments of ethical organizational development consulting behaviors than those who recognize that good or bad consequences can occur (Exceptionists and Subjectivists). Further, those who recognize that good or bad consequences can occur from an otherwise ethical decision tended to rate consulting interactions as more ethical (Subjectivists and Exceptionists) than those who idealistically maintain that good outcomes are always a function of correct actions (Absolutists and Situationists).

The vertical dimension corresponds to the second discriminant function and illustrates which groups are distinguished in a way unrelated to the way they are separated on the first function. Whereas the first function clearly separated the High and Low Idealists, the second function is less effective in separating the High and Low Relativists. Exceptionists (Low Relativism) are clearly distinguishable from the Subjectivists and Situationists (Both High relativism) on this function; however, there is a greater resemblance between Absolutists (Low Relativists) and Situationists (High Relativism) than exists between the Absolutists and Exceptionists (both Low Relativism), or Subjectivists and Situationists (both High Relativism). This function most effectively separates the Exceptionists from the Subjectivists.

The graph makes clear the correspondence between ethical ideology and ethicality rating of OD. consultant and client behaviors. Despite the existence of significant multivariate differences between all groups, the Absolutists and Situationists closely resemble one another on the second function. The Exceptionists and Subjectivists, while



similar on the first function are clearly distinct on the second function. By contrast, the Absolutists and Situationists are more distinguishable on the first function. This suggests that the extent to which differential judgments are discernible is dependent upon the nature of the judgments being considered. In this case, two linear functions were required to distinguish the groups.

Research question 2b: The variables defining the functions.

Table 2 presents the discriminant function-ethics scale correlations, rank ordered within each of the two significant functions. As the Table indicates, all fifteen of the ethics scales exceed a .20 function correlation, meeting a criterion typically used to determine if a variable is contributing to a linear function composed of several variables. In effect, all of scales contribute to at least one of the two functions. Nine of the ethics scales were used to interpret the first function, with the remaining six used to interpret the second function.

TABLE 2

Function 1. Subjectivists and exceptionists distinguished from absolutists and situationists

The scale with the highest function correlation is Scale 2: The consultant prevents the client from participating in intervention decisions. The relative magnitude of this correlation indicates that this is the largest contributor to the separation of Absolutists and Situationists from the Exceptionist and Subjectivists. That is, Absolutists and Situationists viewed this behavior on the part of the consultant very differently than did the Exceptionists and Subjectivists.

As indicated in Table 1, both the Subjectivists and Exceptionists provided more favorable ethicality ratings than the other groups. This suggests that both are more accepting of client exclusion than their High Idealist counterparts. Perhaps it is the Subjectivist's pragmatic perspective influencing their more favorable judgment of client exclusion than the judgments made by the Absolutists and the Situationists. They may believe that the consultant, as the expert, is exercising an individual value judgment which can only be made by an expert. The Exceptionists may be weighing the costs and benefits of exclusion, rather than attending to the goodness or badness of the action, as the Absolutists would; or its fit within the context of the situation, as the Situationists might.

The second, third, fourth and fifth largest correlations with the first function are contributing about equally to group differences, but less so than scale 2. This is indicated by a range in the scale-function correlations of .39 to .47. Three of the four scales are indicative of information or resource withholding (Scales 1, 13, and 10). The fourth scale involves the consultant's use of ingratiating behavior to improve status with the client. The results suggest that the Subjectivists and Exceptionists, as compared to Situationists and Absolutists, place differential ethical emphasis on the open exchange of information between the client and the consultant.

As indicated in Table 1, the Subjectivists and Exceptionists tended to provide more



favorable ethicality ratings than the other groups on these scales, indicating that withholding of information or resources at the expense of another party is generally viewed more favorably by pragmatic decision makers than idealistic decision makers. Further, the Subjectivists and Exceptionists tended to view ingratiating behavior more favorably than the other two groups, indicating that the pragmatic orientation of these groups identify them as less critical in their ethical judgments than the Absolutists or Situationists.

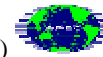
Four other scales provided modest contributions to the first function, as indicated by scale-function correlations ranging from .23 to .33. Three of the scales were designed to measure different facets of willful misrepresentation and misuse of information (scale 7,8 and 11). The fourth scale is another form of information manipulation, i.e., consultant failure to reveal errors made during the consulting engagement.

Considered collectively, the scales contributing the most to group separation on this first function are those indicative of failure to endorse an equal partnership in the client-consultant relationship, i.e., exclusion of the client from decisions effecting the consulting engagement, information and resource withholding. These situations have stronger function correlation than those scales depicting willful misrepresentation and misuse of data. This suggests that the separation of High Idealists from Low Idealists from Low Idealists may be attributed principally to their judgmental differences with respect to these types of interactions. More favorable judgments came from those pragmatic individuals who assess the costs versus the benefits of an action and from those who assume that any behavior is ethical, as long as it is congruent with one's personal philosophy. Less favorable ratings came from those who strictly apply universal moral rules when making ethical judgments and from those who evaluate the "fit" between the context and the action.

Function 2. exceptionists distinguished from subjectivists, absolutists and situationists

Six scales define this function and distinguish the Exceptionists from the other groups. The scale with the highest function correlation is Scale 6, Management uses consultant-derived data in ways incongruent with the original intent. On this scale, the differences between the Subjectivists and Exceptionists are clear. Table 1 indicates that the Subjectivists provided a more favorable ethical judgment than the remaining groups whose mean ratings are very similar. Scale 6 is not, however, indicative of the general tendency for those situations defining this function.

Five of the six scales defining Function 2 contribute about equally to group separation, as indicated by function-variable correlations ranging than the Subjectivists (Scale 3,4 and 9). Further, the Exceptionists provided more favorable ratings on four of the scales when compared to the average of the remaining three groups. This is the reason the Exceptionist centroid, reported in Figure 1, is positive, while the remaining groups have negative centroids. The scales defining this second function include those indicative of manipulation/coercion (Scale 3 and 5), willful and deliberate information misrepresentation or misuse of data (scale 6,9 and 14) and withholding of services (scale 4).



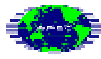
Overall, the results suggest that individual differences in the judgments of what constitutes ethical organizational development consulting can be expected to vary according to ethical decision making styles. All four groups differed from one another when fifteen organizational development interactions were treated as jointly dependent. Nevertheless, the nature and extent of differences in judgments of O.D. interactions were not the same across all four groups as indicated by the existence of two significant discriminant functions. The placement of the groups in the discriminant planes suggests that while differences exist, some groups are more distinguishable from one another than others. These results suggest that it is naïve to ask which group will provide more lenient or harsh judgments of ethical organizational development consulting behaviors. A more sophisticated question would be: in what ways do individuals using different ethical styles similarly and differentially judge ethical behaviors?

These findings suggest that the pragmatic Exceptionists and Subjectivists similarly evaluate situations involving information and resource withholding, provide more favorable ethical judgments of these actions than those who are highly idealistic. However, they are polar opposites when evaluating instances of manipulation and willful misuse of data, with Exceptionists providing, in general, more favorable ethical ratings. Ethical judgments made by the idealistic Absolutists and Situations differ more when they are evaluating acts that involve information withholding than they do when evaluating deliberate manipulation or information misuse. Regardless of the type of situation they are judging, their ethical evaluations are decidedly harsher than the Exceptionists, and certainly harsher than Subjectivists in their evaluations of information and resource withholding.

These results suggest that decision making styles influence both the extent to which an action is regarded as ethical or unethical, and the nature of the issue viewed as ethical or unethical. Such findings have important implications for O.D. scholars and practitioners.

DISCUSSION

White and Wooten (1984, 1986) have suggested that ethical dilemmas in organizational development consulting emerge from unresolved role ambiguity and conflict between the client and consultant. They have proffered a model suggesting that this ambiguity and conflict emerge if antecedent conditions are left unresolved. They have described these antecedent conditions as differences in change agent and client values, goals, resources, skills and abilities. The findings present here provide further elaboration of these antecedent conditions by illustrating that what is perceived as ethical or unethical is subject to the individual's decision making style and the type of interaction being judged. The results imply the possibility that clients and consultants relying on different ethical decision making styles may not even be aware that they have engaged in behaviors viewed as ethical violations by others. As such, ethical making style is an antecedent condition to the recognition of an emergent ethical dilemma not previously identified in the White and Wooten model, or for that matter, in the Organizational Development literature.



The information from this study having implication for trainers and educators, sheds light on which specific dilemmas create difficulties for a given 'ethical ideology'. By supplying awareness education as to the differential effects of a given dilemma (Rhodeback, Lai, and White, 1990; White and Rhodeback, 1992) relative to a given 'ethical ideology' (Forsyth, 1981, 1984) change agents and client systems will be better prepared to deal with the dynamic properties of an O.D. intervention. For example, training scenarios can be prepared illustrating specific dilemmas while correspondingly training practitioners as to the reaction propensities of each of the four categories of ethical ideologies. This would enable the change agent and client system to recognize the dilemma and the behavior of the role sender and the role receiver as a function of 'ethical ideology'.

For experienced practitioners as well as those organizations employing O. D. consultants, the findings provide a tool for understanding one's own and other's ethical decision making styles. While stylistic differences suggests the possibility of unresolvable impasses, knowledge of stylistic differences also provides a framework of departure for discussing ways to resolve conflict congruent with each individual's ethical value system. Thus boundarying the range of offensive behaviors either the change or client system have engaged in.

The results provide an incremental step in achieving a better understanding of individual variations in ethical judgements of O. D. consulting. Nevertheless, perceptions are not behaviors. Additional research is needed to determine the nature and extent to which ethical decision making styles are related to client-consultant engagement in the types of behaviors evaluated in this study. Furthermore, it would be beneficial to learn if, and in what ways, individuals with different ethical decision making styles also differ in their approaches to the resolution of ethical dilemmas in the O. D. arena. More modest requirements also exist. For example, replication of this study would be very useful given the need to cross validate the discriminant model. Further, the issue of cultural influences when dealing with the ethics of O. D. consulting behaviors needs to be investigated (Law, 1996). The subject to variable ratio of 20:1 implies that the results should be stable; nevertheless, replication would be particularly useful in ensuring that the weaker of the two functions reported was not an artifact of capitalizing on chance.



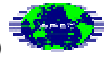
REFERENCES

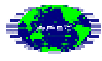
- Fletcher, J. 1996. Situation ethics. Philadelphia, Pa.: Westminister Press.
- Forsyth, D. 1978. Moral attribution and the evaluation of action. Unpublished doctoral dissertation, University of Florida.
- Forsyth, D. 1980. A taxonomy of ethical ideologies. Journal of Personality and Social Psychology Bulletin, 7, 218-223.
- Forsyth, D. and Pope. 1984. Ethical ideology and judgements of social psychological research: multidimensional analysis. Journal of Personality and Social Psychology, 40. No. 6, 1365-1375.
- French, W. L. and Bell, C. H. Jr. 1984. Organization development. 3rd ed. Englewood Cliffs, N. J.: Prentice Hall.
- Gellerman, W., Frankel, M. S. and Landnson, R. F. 1990. Values and ethics in organizational and human systems development: Responding to dilemmas in professional life. San Francisco, CA. Josey-Bass.
- Huse, E. F. 1980. Organizational development and change. 2nd ed. St. Paul, Minnesota: West Publishing Company.
- Kelman, H. C. & Lawrence, L. H. 1972. Assignment of responsibility in the case of Lt. Calley: Preliminary report on a national survey. Journal of Social Issue, 28, 177-212.
- Kohlberge, L. 1976. Moralization: The cognitive developmental approach. In T. Likona(Ed.) Morality theory, research and social issues. New York: Holt, Rinerhart & Winston.
- Law, C. M. 1996. A culture-based perspective of organization development implementation. Research in Organizational Change and Development, 9: 49-79.
- Lippit, G. and Lippit, R. 1978. The consulting process in action. La Jolla, Ca.: University Associates.
- Macy, B. A. and Izumi, H. 1993. Organizational changes, design, and work innovations: A meta-analysis of (3) North American field studies – 1961-1991. In W. Passmore and R. Woodman (eds.) Research in Organizational Change and Development, vol. 7: 235-313. Greenwich, CT: JAI Press.
- Maidment, R. and Losito, W. 1980. Ethics and the consultant/trainer. Selected Paper no. 11. Madison, WI.: American Society for Training and Development.
- Miles, M. B. 1979. Ethical issues in OD intervention. OD Practitioner, October: pp. 1-10.
- Pfeiffer, J. W. and Jones, J. E. 1977. Ethical considerations in consulting. In J. E. Jones

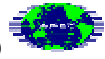


and J. W. Pfeiffer (eds) The 1977 Handbook for Group Facilitator. La Jolla, CA: University Associates.

- Rest, J. R., Cooper, D., Coder, R., Masanz, J., Anderson, D. 1974. Judging the important issues in moral dilemmas – An objective measure of development. Developmental Psychology, 10, 491-501.
- Rhodeback, M., Lai, W. B. and White, L. P. 1990. Ethical Considerations in Organization Development: An Empirical Approach. Organizational Development Journal, Winter: 40-45.
- Schlenker, B. R. and Forsyth, D. R. 1977. On the ethics of psychological research. Journal of Experimental Social Psychology, 30: 369-396.
- Shay, P. W. 1965. Ethics and professional practices in management consulting, Advanced Management Journal, 30, no. 1: 13-20.
- Walton, R. E. and Warwick, D. P. 1973. OD: the ethics of organizational development Journal of Applied Behavioral Science, 9, no. 6: 681-699.
- Warwick, D. P. and Kelman, H. C. 1973. “Ethics in Social Intervention” in G. Zaltman (ed.) Process and phenomenon of social change. New York: Wiley.
- White, L. P. and Rhodeback, M. J. 1992. Ethical dilemmas in organization development: A cross cultural analysis. Journal of Business Ethics, 11, 663-670.
- White, L. P. and Wooten, K. C. 1986. Professional ethics and practice in organizational development. New York: Praeger Publishers.
- White, L. P. and Wooten, K. D. 1983. Ethical dilemmas in various stages of organizational development. Academy of management Review 1, no. 2; 57-73.
- Zaltman G. and Duncan, R. 1976. Ethics in social change. in G. Zaltman and R. Duncan (eds) Strategies for planned change. New York: John Wiley and Sons: 323-377.







**THE BEHAVIOR AND MECHANISM DISCUSSION OF
INTELLIGENCE-INTEGRATION IN SMALL AND
MEDIUM-SIZED ENTERPRISES**

Zhou Zhen

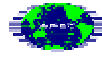
**School of Economics and Management
Tongji University (China)**

Luo Jinlian

**School of Economics and Management
Tongji University (China)**

Zhang Yi

**School of Economics and Management
Tongji University (China)**



**THE BEHAVIOR AND MECHANISM DISCUSSION OF
INTELLIGENCE-INTEGRATION IN SMALL AND MEDIUM-SIZED
ENTERPRISES**

ABSTRACT

With the emerging of the age of knowledge economy , the small and medium-sized enterprises, which play a magnitude role in a state's economy, are facing a new task that maybe more important than financing the task of "intelligence-integration". It means a modem administration activity aim at absorbing the brain resources. This article with the small and medium-sized enterprises as the main object, the maximizing of the whole state's brain resources as the main object.



FOREWORD

The small medium-sized enterprises are those total sales or turnover is less than 50 million CNY, which have the characteristics of short-term objectives, fast-changing strategies, lack of professionals and the forth.

The “Intelligence-Integration” in small and medium-sized enterprises means an administration activity developing and taking full advantage of intelligence resources that are existing, creative, but may not be taken seriously, to serve for enterprises and create considerable values.

The purpose of intelligence-integration services for small and medium-sized enterprises is to provide the best integration of market, capital, technology, information and human resources, to improve competitive edges and to strength the risk-resistance capability. Based on the diagnosis of aspects such as development strategies and policies, regulations and rules, operation processes, staff behavior specifications and organizational culture, with the introduction of an effective management mode to improve regulations and rules, offering proposals on business strategy, operation process and organizational culture, meanwhile implementing a series of training on staff management, performance and behavior standardization, the enterprises may have much knowledge of self-management, form an operation mechanism involving responsibility, right and benefit, to achieve healthy, long-term and steady development by motivating employees.

STRENGTHS AND WEAKNESS

There is a saying: “It is easy to turn round for small boats.” Indeed, as for big enterprises, the small enterprises with combination of ownership and managerial authority have unparalleled strengths in business decision and specific operation efficiency. Small-scale enterprises can react in business and adapt at external environment quickly. But it is easy to “turn round”, also easy to “turn over”. Small enterprises have much more difficulties than edges as well.

- Small number of employees, lack of professionals in some sectors;
- Leaders make decisions only on their intuition without scientific basis;
- Most of leaders are specialists or experts in some field, having little knowledge of other fields, lacking modern management skills;
- Enterprises’ development keeps steady resulting from leaders’ personal traits and the promising prospects; lacking standardized management.
- Leaders wouldn’t like to have links with best enterprises for worrying about being annexed.

The characteristics mentioned above confuse many leaders after small enterprises have developed to some extent. Either turn round abruptly in the face of “dangerous shoal” in markets; or stop developing further and keep within their own field, even



knowing the clouded prospects, and miss new improvement opportunities; or go forward without thinking and lead to competitors' counterattack. Therefore, if small enterprises are expected to become large businesses one day, it is urgent to be supported by the government and society. Since small and medium-sized enterprises play an important role in economy and society, after separating ownership from managerial authority, governments should emphatically establish social service system and provide pre-, during-, after-production service for small and medium-sized enterprises and form a service network.

INTELLIGENCE-INTEGRATION

The study of "intelligence-integration" will concentrate much on the point of "shareability". Usually, it is inevitable to pay high price for valuable acquisitions. But small and medium-sized enterprises hope to pay as less as possible and obtain as much as possible. Though it seems like a daydream, a kind of new mechanism can be constructed to maximize the sharing and bring every bit of talent into full play as several times, dozens times even decades times, which is the same as data-sharing revolution in network era. So intelligence-integration is just to make fortunes by others' brains. We can say it is a further development of recommending new talents.

Available Intelligence-integration Cases

Hong Kong Hang Lung Center

To study Chinese business management deeply, Hang Lung Center invited some scholars to Hong Kong in July of this year, with systematic and well conceived planning. During this period, scholars were divided into groups, and every group respectively put forward current problems on Chinese business management, then select meaningful issues to design research programs, finally all the groups reported their programs together. Thus, Hang Lung Center has acquired not only different aspects of management issues and information, also the research programs. It can't be estimated in the view of research and information values.

Henan Bangjie Company

Bangjie began to integrate intelligence in 1999. It invested 500 thousand CNY to found "Bangjie Center for Small and Medium-sized Enterprises Management Research" with prominent universities, in which professors directly participate in management-decision making, offer programs and resolving measures. But very few people know that thousands of money has to be spent in advertising for one product, here only 500 thousand CNY spent, long-term help can be got from the "intelligent group".

Guangdong Hua Wei

Hua Wei Company invites six professors from the People's University of China to diagnose the matter of management regularly and irregularly, which only needs to



pay 3,000~20,000 CNY per person per month for consulting.

The above examples indicate that small and medium-sized enterprises can get high-level intelligence service but cost a little.

Reference Conception of Intelligence-integration

Lease Intelligence-integration

Lease means lessors grant lessees to possess and use properties during contracted period when paid by lessees.

When an enterprise requires urgently some specialists in a short period, for instance, a network technician to establish MIS, and no specialist can undertake the task internal, it is certain to employ one from external. But the problem is that the specialist may not be wanted any more after the system is established, and daily maintenance can be dealt with by computer operators. So, this kind of costly recruitment is not appropriate for small and medium-sized enterprises.

It is not necessary to have eggs every day, perhaps have one in a week. So we can buy some eggs when wanting and have chickens bred rather than raise a hen by ourselves. The characteristic of tentative requirement of eggs is the same as that of lease. It is very ideal to rent a hen to have eggs. But it is still very difficult to find a place to buy eggs at any time.

Construct Service Network of Intelligence-Integration

There are a lot of operating entities that provide all kinds of specialized services. They will come up to serve when enterprises have requirements and make a phone call. These entities are so specialized that the costs and prices of the services are not very high.

“Wisdom Bank”

Banks are considered as a place to collect and distribute funds. Small and medium-sized enterprises make relationship with banks for support of loans. In fact, we can set up a suppositional institute, suppositional wisdom bank or talents banks and so forth, to provide intelligence services for small and medium-sized enterprises, such as

1. Consulting service of how to use and develop human resources.

2. Information consulting. Small and medium enterprises are restricted by its scope and have not enough funds to develop new products, but banks have natural advantages of it. Banks keep in touch with hundreds of thousands of enterprises and have a whole view of them, so they can provide the small and medium enterprises with such information as market requirements, new approaches, technologies, equipment which are helpful for products development.



3. Financing consulting. Lack of specialized finance talents, small and medium-sized enterprises are not familiar with financial market. Banks can help them finance efficiently, simply and low-costing. Also banks can provide consulting on long, medium or short-term investment for those having idle funds.

4. Planning and operation of assets reconstruction. Assets reconstruction involves a series of specialized knowledge and experiences of finance, investment and securities. Banks can offer consulting on information, laws and regulations, which may become resources of new transaction, also contribute to economic reforms.

“Enterprises Clinic”

According to newspaper, Shanghai Light Industry Holding Company has set up an “enterprises clinic” that over 10 famous entrepreneurs offer services. They point out problems on the spot for the fixed enterprises that are in difficulties. The first 12 large-loss enterprises have registered. They and their “doctors” make efforts to search for a method to turn losses into profits.

It is an inspiring report. “See doctor” can be said to an action of intelligence-integration. If “enterprises clinic” is popular just like practical hospitals, and enterprises in trouble can get help conveniently, it is no doubt a Gospel for small and medium-sized enterprises.

FEASIBILITY CONDITIONS

If “intelligence-integration” is to be developed to a social service system, not only an organizational behavior, or some clever person grasps opportunities to become a pioneer in a new industry, the problems should be considered all-sidedly and carefully.

Demand of Intelligence Requirers

Considering intelligence-integration as a process from which both two participants can benefit, it involves at least two groups: requirers and suppliers. Here the requirers we mainly mean are small and medium-sized enterprises, whose demand can be understood. Then a direction current is formed:

Suppliers $\xrightarrow{\text{intelligence}}$ requirers

Recognizing the importance of intelligence for enterprises, especially for small and medium-sized enterprises, it is possible to understand equally the urgency of intelligence requirers. That is to say, the factors on the right of arrow have strong incentives to intelligence-integration.

Demand of intelligence suppliers

Intelligence requirers’ urgency can be understood relatively, then do the suppliers

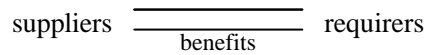


have the same strong requirements or care little about it?

Companies are worried as if a house caught fire when needing hands, but specialists still stay at home doing nothing—they hope to be sold off.

According to statistics, in big and medium-sized cities the turnover rate of specialists increases as 5% per year at present, and ideas of selecting occupation have changed a lot. The first choice is not light pressure of work and job stability any more, but high salary and able to give full play to their professional knowledge. Under the circumstances, more and more specialists hope to be commercialized and “sold” by intermediary companies.

This shows us that not only enterprises, those potential intelligence suppliers also have strong, not less than enterprises’, demand, eager to turn knowledge into wealth, individual and social wealth as possible. It is a new issue in the Age of Knowledge Economy. The model of above section can be converted into:



Social Demand

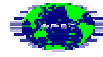
It is surveyed by State Scientific and Technological Commission, in our country, only 14.6% of professional technicians can give full play to their talent while working, and 30% of them can do little for the present. Another management center for scientific research shows, in large and medium-sized enterprises of China, only 47.7% of engineering technicians are able to develop themselves and the rest 52.3% can do nothing.

Some enterprises may have many “inventory talents” for the following reasons:

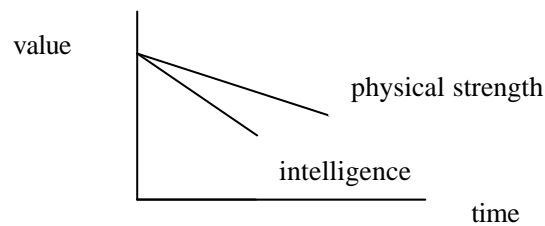
1. Some enterprises recruit many talents of the same sort, which causes the surplus. Or they employ the kind of talents who are not needed at present.
2. Some enterprises have not enough market requirements for their products to make full use of the fixed assets and human resources.
3. A few leaders are narrow minded, so that they are reluctant to bring the professional knowledge of the talents into full play out of envy.
4. Some leaders tend to appoint people by favoritism and real talents work on unsuitable positions.

For these reasons, the limited human resources are wasted somewhere and can’t contribute to the society or country. So the society needs to build up a system through which the human resources can flow freely and make the most of their wisdom.

The common ground of “financing” and “intelligence-integration” is that both will devalue with the passage of time, till to be scrapped and valueless.



Equipment and machinery will devalue for wear and tear; currency and cash also have “time value”. Capitals will become a loss as “opportunity cost” without being used. Human resources, which will devalue as the passage of time likewise, means the sum of labor forces among all of the people within some scope, or the generalization of people who possess intelligence and physical labor capacities which can propel the society and economy forward. Skills are getting rusty without practising; physical labors are going down with aging. Science and technology stated above will be affected more obviously by the time. As the following illustrates, the speed of losses of intelligence is much faster than that of physical capabilities.



So patent technologies will be protected within the number of years. Beyond this, the protection will become meaningless because the technology has lost its value. Values of human resources are named as “human resource capital”. It promotes a dynamic concept and warns us to add new values continuously, which is increment of human resource capital. Because of the depreciation of intelligence capital, naturally it is very urgent to take full advantage of it and make it revalue.

It is easy to know from the above analysis, the real significance of proposing the concept of “intelligence-integration” is that it points out a bright direction of resolving problems of enterprises’ existence and development, especially for small and medium-sized enterprises, not only puts forward a completely new and modern conception of using talents. When facing a golden opportunity large enterprises perhaps have to give up for the complexity of changing production line, but small enterprises can catch this opportunity to change the whole business in short time. The present facts have proved, neither lacking these enterprises which need the “golden ideas”, nor having the available “pioneering intelligence”, on the contrary, both sides are eager to exchange their requirements, just being short of a smooth and complete communicating channel.

DISCUSSION OF BUILDING THE SOCIAL MECHANISM OF INTELLIGENCE-INTEGRATION

“Intelligence-integration” is very important to support small and medium-sized enterprises as well as “financing”. So a kind of social mechanism has to be built, and it’s a tremendous, social systematic project just like the construction of “financing mechanism”.

The Principle of “Pareto Optimum”



The economy can not improve any others' utilities by changing the allocation of products and resources without decreasing one's utility. On the contrary, "Pareto no efficiency" means the economy can promote one or some people's utility by changing the allocation of products and resources with holding one's utility. In the situation of no efficiency in economy, if reallocating the resources, the level of some people's utility will increase while others' won't lower. This reallocation is called "Pareto improvement".

Here, we regard products and resources as labor forces and human resources, and consider improving the utility of one or some enterprises even the whole society. Then we can say the use of talents is in a state of "Pareto no efficiency" and needs "Pareto improvement".

At present, the specialists generally work in a state of "light load", which shows the situation of using talents is dissatisfactory. People's talent cannot be done justice in their own unit. If we make the most of talents to improve the utility of some enterprises which need hands urgently, while keeping the utility of those the talents belong to, is it possible to improve the using efficiency of the whole country or society? From the analysis of current situation, it is quite possible. It only needs to change the method of allocating talents in the society, namely, "Pareto improvement".

Establish New Methods of Allocating Talents

Talents are also a production factor. The quantity and quality of talents are the main deciding elements. If talents of the whole society are considered thoroughly and brought into full play, the method of allocating talents is an important factor besides the quality and quantity.

From an elementary level to an advanced level the method can be divided into 3 parts:

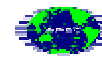
Brownian movement→intermediary communication→operating lease

Brownian movement

"Brownian movement" is a physics concept. It means molecules or atoms of fluid move and collide at random and irregularly, and the movement of individuals is hard to predict and control. We name it as Brownian movement because irregular, spontaneous movements and random collisions of talents fulfill the allocation process in talents market. The process is spontaneous, blind, random and macro-uncontrollable, but is direct, flexible, convenient and efficient during the contact of requirers and suppliers.

suppliers→requirers

The allocation of "Brownian movement" is relatively primitive. The essential motivation is the benefits of two sides. Like molecules' energy consumption incurred by collision in Brownian movement, the method of allocating talents, in the sense of whole society, has few probabilities of rational allocation. It is impossible to gain much social



effects, the balance of demand and supply is also temporary and partial. Meanwhile, for lack of micro statistics, the market information on demand and supply is inclined to be false and delayed. It will cause excessive feedback of all kinds of information, worsen the imbalance and uncontrollability. In addition, considering their own benefits, intelligence requirers and suppliers couldn't conscientiously undertake the responsibility of safeguarding whole social interests. As well it may lead to conflicts between them.

Generally speaking, the talent allocation of Brownian movement is a method with obvious faults.

Intermediary Communication

This talent allocation with intermediary communication means suppliers and requirers select each other by the way of special middle-organization, till meet both sides' demand. Its characteristic is that intermediary organizations gather information on supply and demand, select the suitable partners and play a role of "go-between". Suppliers and requirers get in touch with each other through them.

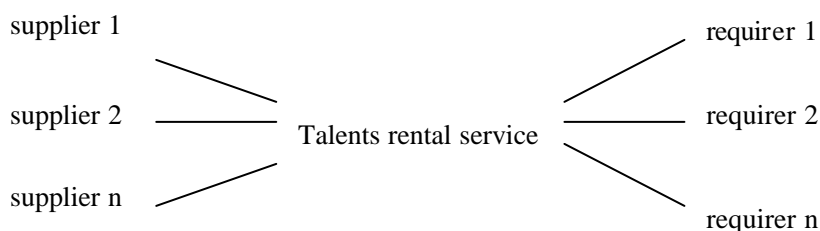
suppliers→middle-organization→requirers

This method is open, information sharing and widespread. It greatly improves the scale benefits of allocation, to a relative extent, overcomes and eliminates the faults of Brownian movement such as blindness, spontaneousness and uncontrollability, which makes the management of talents market enter a standard, perfect and harmonious stage.

Although this method may play a role of guidance by immediately releasing information, it is not authoritative. Evaluated from the whole society, this method can't, to the greatest degree, realize the whole benefits of social talents and avoid the blindness of operation. Under the circumstances of imperfect market and legal system, some intermediary organizations are very prone to lack of standardization.

Operating Lease

Operating lease regards talents as a relatively independent production factor. Departing from other factors, as a kind of resources or capital inventory, a managing object and profitable means, talents are managed by professional companies, and allocated in a way of compensated lease according to the employing units' demand. This special business is called "talents rental service" or "talents assigning company".



The difference from intermediary organizations is that talents rental service is a



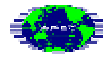
socialized enterprise with corporate qualification, and possesses rights of operation, management, control and gains. It is an independent behavior object with united operating qualification of responsibility, rights, duty and benefits on human resource development, allocation and supersession. Without shifting ownership, rental companies assign talents, offer labors to requirers and collect rents according to the market and demand. After fulfilling tasks the talents will return and wait for the next opportunity. The talents are long-term employees and paid by the rental company.

The allocation of operating lease is carried out in an open job market. Suppliers and requirers both can accomplish the commercialization of intelligence and labor forces with the aids of information communication from renting companies and regulating function of markets, on the base of consensus reached by three sides of management (talents rental company), supply (talents for lease) and lease (employing unit). This method will eliminate very effectively the social faults of smothering and stifling real talents caused by private monopoly of human resources. It is very valuable for resolving structural problems on imbalance of talents' supply and demand, and common on-the-job unemployment.

To sum up, we can draw a conclusion that the allocation of operating lease is the direction and goal tried to meet. It has many important edges:

1. It breaks with the traditional dual-subject model, that is, individuals as suppliers and employing units as requirers, and achieves a leap to more steady and balancing three-subject model involving business administration, talents and employing units.
2. It realizes the strategy of talents optimum allocation transfers from microcosm to macrocosm, from individual to entirety, from labor forces to social resources.
3. It makes the administers, suppliers and requirers reach an agreement to the greatest degree on benefits on the base of three rights (social management right, individual occupation selection right, unit using talents right) mutual control, market regulation and contract guarantee.
4. It indicates talents as an independent productive factor, separate from productivity and will realize the specialized allocation, enterprise operation, socialized management and industrial development.

The more markets develop, the more divided management, which is an inexorable law of increasing economic benefits. Under the condition of modern market economy, talents as the most complex and initiative production factor, it is an inevitable direction to establish a market-oriented, specialized, socialized and large-scale business management mechanism with the help of internal benefits mechanism. It is an important task for government to establish the talents using and allocating mechanism.



Concepts Training and Proposals of Government Measure

Leading Directors to Form a Social “Intelligence Sharing” Concept

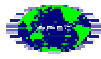
In modern society the flow of trained personnel has become more and more frequent and normal. “Changing a job” or “job hopping” is very widespread. Enterprises begin to face the problem of retention while thinking of recruitment of talents. In some enterprises, critical technicians are only paid relevant salaries with their technical level, not supported even allowed to attend examinations similar to professional posts to obtain general standards admitted by society. So they have no qualifications for working for other businesses and have to keep their minds on their work in the unit.

We can't say this method of work is not clever, but it is very narrow and limited if considered from interests of the whole society not from individual benefits. Talents belong to the country and whole society in the final analysis. They become one part of an enterprise merely through the interest's relation or realize their values by the medium of enterprises. The method of keeping one's own property obstinately will impede talents inevitably to improve and develop further, which is the social loss, also enterprises' own loss. Since human resources is a dynamic concept the static human resources will depreciate continuously. It is necessary to add new values constantly. Monopolizing talents will result in shortage of incentives to ongoing study.

I am impressed deeply by the viewpoint of “intelligence sharing” proposed by a personnel manager from some enterprise. He advocates talents shouldn't be taken as our own private property and should be encouraged to develop themselves; the flow of talents shouldn't be regarded as flood and beast of prey as well. If every enterprise can do this the human resources of whole society will be extraordinary active and prosperous, every enterprise will become a processing station among the talent flow and contributes to our society.

Referring to the supporting forms of “risk investment” and “pioneering fund” to small and medium-sized enterprises, establishing a special collecting organization, pooling those temporarily idle intelligence resources, just like collecting idle capital from masses to form an “intelligence fund”, and searching for targets to “invest intelligence”.

Building up a management organization to serve for small and medium-sized enterprises specially, providing guidance service on “intelligence-integration”, for instance, valuable information such as acquisition methods of expiring patents. Training management staff to form the concept of intelligence-integration; establishing intermediary organizations sponsored by government, making a model for markets; investigating conditions of supply and demand, publishing the data to catch attention.



REFERENCES

Academy of Management Journal , Anne S.Tsui

China Business , Sponsored by Industrial Economic Research Center of Social Science Institute of China

China Medium- and Small-Sized Enterprise, 1997—1999

Decision , 1997.2

Economic and Research , 1998.5

HR Development , 1997.4

Knowledge Mangement , Sun Tao ,

Modern Enterprise , 1999.2—1999.5

Modern Enterprise Business , 1998.4

Political Economics Analysis for Gradual Reform , Fan Gang, Shanghai Far-East Publishing House

Shanghai Medium- and Small-Sized Enterprise, 1997.6

www.asiansources.com

www.libnet.sh.cn

www.china-union.com