

ISSUES WITH THAI WEEE (WASTE ELECTRICAL AND ELECTRONIC EQUIPMENT) RECYCLING BILL: COMPARISON WITH OTHER ASIAN COUNTRIES

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ABSTRACT

Recycling of Waste Electrical and Electronic Equipment (WEEE) in Thailand is currently handled by the informal sector, leading to serious environmental pollution and exports to surrounding countries. Under such circumstances, Thailand's WEEE recycling bill for 2017, which has already been examined over a long time period, changed the responsibility of the manufacturers from bearing the financial burden to collecting the WEEE. Compared to other emerging Asian countries that have already passed their respective household appliance recycling bills, namely China, India, and Vietnam, the present household appliance recycling bill of Thailand is similar to that of India and Vietnam. Furthermore, there are some improvements (e.g., the manufacturer is required to establish and implement a WEEE collection goal). However, collectors designated by manufacturers are forced to compete on the purchase price, which includes the environmental cost, with the informal sector, thus making collection practically difficult. For resolving these issues, an objective guideline should be established to determine if such items generated by consumers may be classified as used products or WEEE.

Keywords: Waste Electrical and Electronic Equipment (WEEE), Extended Producer Responsibility (EPR), Informal recycling,

Introduction

Presently, the household appliance recycling bill is being re-examined in Thailand. In this paper, first organizing the current issues with household appliance recycling in Thailand, which depends on the informal sector. Next, presenting an overview of changes in the household appliance recycling bill, which has been considered for a long time, and comment on the responsibilities of the manufacturer in terms of Extended Producer Responsibility (EPR). Finally, comparing this bill with similar legislations in China, India, and Vietnam, and pointing out the issues associated with the household appliance recycling bill in Thailand.

Current situation pertaining to household appliance recycling in Thailand

According to Pollution Control Department (PCD)(2016), the estimated tonnage of household hazardous waste (HWW) generated in 2015 was 591,127 tonnes, an increase from 2014 by 14,811 tonnes or 2.57%. Approximately 384,233 tonnes or 65%, was waste electrical and electronic equipment (WEEE)(Figure 1).

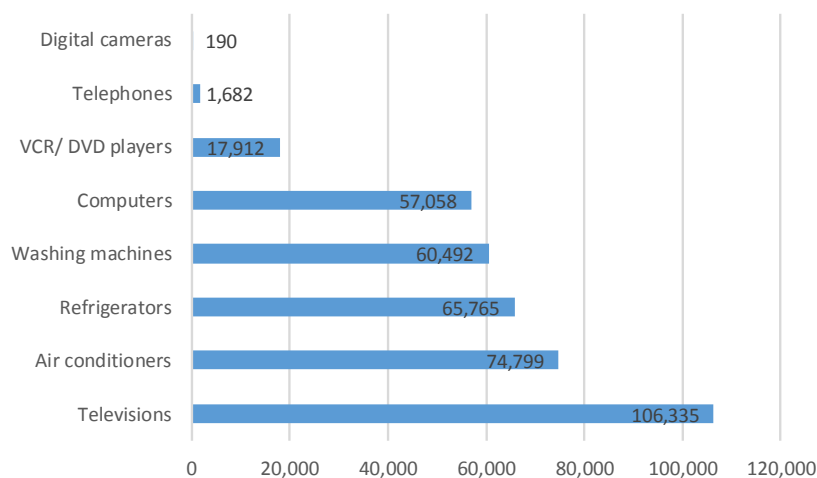


Figure1 :Estimate of the Amount of Electronic Equipment Waste in 2015 (tonnes/year)

Source: PCD (2016), Thailand State of Pollution Report 2015

However, the household appliance recycling bill has not been passed in Thailand. Therefore, the WEEE generated in Thailand is being traded by the informal sector. Generally, consumers sell their WEEE to collectors called “Sa-leng” or to junk shops. Junk shops dismantle the WEEE and sell the components as used products, while the unnecessary parts are recycled.

The informal sector illegally disposes off dismantled parts such as cathode-ray tubes that cannot be sold (Figure 2). For example, in Ubonratchathani province, coated copper wires are burned to recycle copper (Figure 3). Such recycling by the informal sector could lead to environmental pollution and damage public health.



Figure 2: Informal WEEE Recycling at Soi 36 Rachadapisek Road

Source: Google map@13.8220496, 100.5860333 (DEC 26, 2017 accessed)



Figure 3: Informal WEEE Recycling at Ubonratchathani

Source: Panate(2016)

On the other hand, the trading of such used items in Thailand varies depending on the type of household appliance. For example, the number of used cellular phones exceeds export volumes, but import volumes of used televisions have increased rapidly in recent years (Table 1).

Table 1:Trade of Second hand electrical and electronic equipment (unit)

		2012	2013	2014	2015	2016
Second-hand laptop 84713020800	export	7,504	1,305	278	5	9
	import	15,528	819	233	183	136
	net export	-8,024	486	45	-178	-127
Second hand mobile phone 85171200800	export	386	1,576	8,946	732	3,482
	import	322	711	3,246	2,308	753
	net export	64	865	5,700	-1,576	2,729
Second hand TV 85284110800	export	17	13	19	14	6
	import	8,270	6,006	9,248	28,253	110,985
	net export	-8,253	-5,993	-9,229	-28,239	-110,979
Secondhand refrigerator 84182100800	export	503	17	88	5	1
	import	120	136	94	51	50
	net export	383	-119	-6	-46	-49

Source: Thai Customs Department

It has also been confirmed that used household appliances from Thailand are being exported to surrounding developing countries such as Cambodia and Myanmar. Smuggling are common along these borders, so these data cannot be supplemented by trade statistics alone (Figure 4).



Figure 4: Export Second hand EEE (Electrical and Electronic Equipment) to Cambodia and Myanmar

Source: photo by Sasaki

As such, recycling of WEEE in Thailand is mainly conducted by the informal sector, and environmental pollution and exports to surrounding countries are of concern.

Changes in the household appliance recycling bill in Thailand

The effort to establish a household appliance recycling bill in Thailand goes back to 2004. In 2003, material flow estimates for WEEE were first attempted in Thailand with support from JETRO, and in 2004, the PCD presented the first version of the bill. Subsequently, the bill was revised considerably each time the regime changed. Panate (2016) says that “the road to Thai WEEE” is long way as following.

2004: PCD proposed “(draft) Act on the Management of Hazardous Waste from Used products”

2008: Cabinet approved “Integrated WEEE Strategy, Phase I”

2010: PCD proposed “(draft) Act on Fiscal Measures for the Environment”

2014: PCD proposed “(draft) Act on the Management of WEEE and End-of-life Products”

2015: Cabinet approved “Integrated WEEE Strategy, Phase II”

2015: Cabinet approved the draft Act on the Management of WEEE and End-of-life Products

2017: PCD proposed “the draft Act on the Management of the Waste Electrical Products and Electronic Equipment”

instead of retaining the financial burden for WEEE management on the manufacturers, the collection of WEEE is now their responsibility.

The 2017 household appliance recycling bill is quite different from past drafts. The past drafts were similar to the household appliance recycling bill of China in that the recycling fee was collected from producers and importers in advance, and when consumers and municipalities brought waste electronic to the designated depots operated by private enterprises, the depots purchased these items.

But Section 9 of the household appliance recycling bill of 2017 stipulates the following as the responsibility of the manufacturers:

Section 9 No person shall accept the returns, storage or accumulation of Waste,

unless carried out by a Waste Returning Center which is established and registered under the rules and methods prescribed by the Director-General.

Waste Returning Center under Paragraph one may be established by:

- (1) The Manufacturer itself;
- (2) The Manufacturer in association with other manufacturers, or have the distributor of the electrical products and electronic equipment or any person carry the actions out instead, under the supervision of the Manufacturer;
- (3) Other persons other than the person under (1) and (2) who are qualified and are not subject to prohibitive characteristics as prescribed by the Director-General.

In the household recycling bill of 2017, the responsibility of the manufacturer has changed from that of financial management to collection, and other Asian countries that have already passed the household appliance recycling bill have noted an impact with this arrangement. We will analyze these details in the next section.

Comparison with the household appliance recycling bills of other Asian Countries

The OECD (Organisation for Economic Co-operation and Development) defined EPR as an environmental policy approach in which a producer's responsibility for a product is extended to the post-consumer stage of a product's life cycle. In practice, EPR involves producers taking responsibility for collecting end-of-life products, and for sorting them before their final treatment, ideally, recycling. EPR schemes can allow producers to exercise their responsibility either by providing the financial resources required and/or by taking over the operational and organisational aspects of the process from municipalities. They can do so individually or collectively (OECD, 2016).

There has been a significant increase in the adoption of EPRs since 2001, in line with an increased emphasis on waste management policies in many countries. A recent study (OECD, 2013) reviewed 384 EPR policies. Of these, more than 70% were implemented since 2001 (Figure 5).

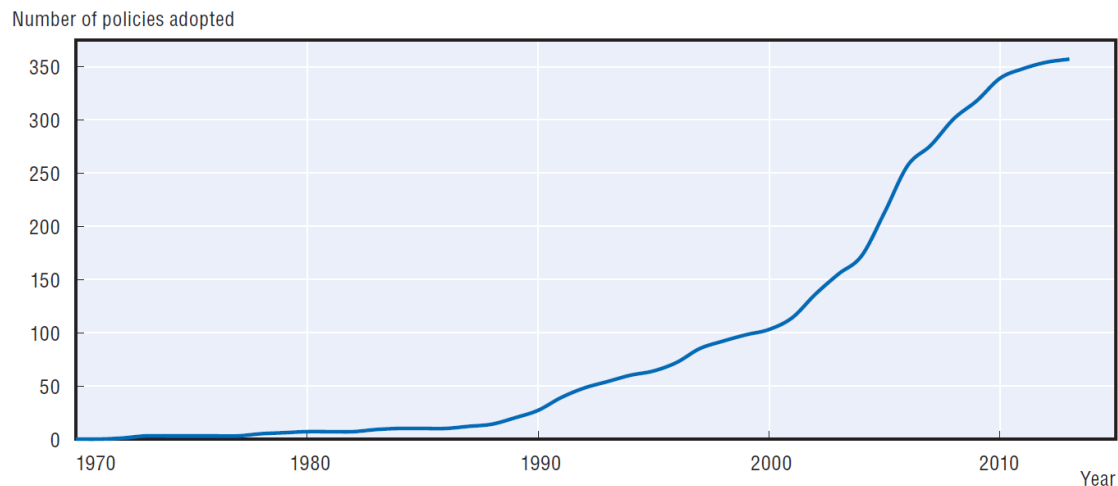


Figure 5: Cumulative EPR policy adoption globally, 1970-2015

Source: OECD (2013), What have we learned about extended producer responsibility in the past decade? – A survey of the recent EPR economic literature, Paris

In terms of products covered, small consumer electronics appear to be the most prevalent (see Figure 6). When mobile phones, renewable batteries, thermostats and auto switches are included, this category accounts for 35% of EPR policies globally. Packaging (including beverage containers) and tyres each account for 17%. End of life vehicles (ELVs) (7%) and lead-acid batteries (4%) are the next largest groups of products covered. The remaining 20% of policies cover less common products including used oil, paint, chemicals, large appliances, and fluorescent light bulbs. Thus it appears that products with potentially high costs of disposal and relatively high levels of consumption have been the main focus of attention in EPRs, reflecting both policy and market drivers. EPRs have been used less for products with relatively low levels of consumption (OECD 2013).

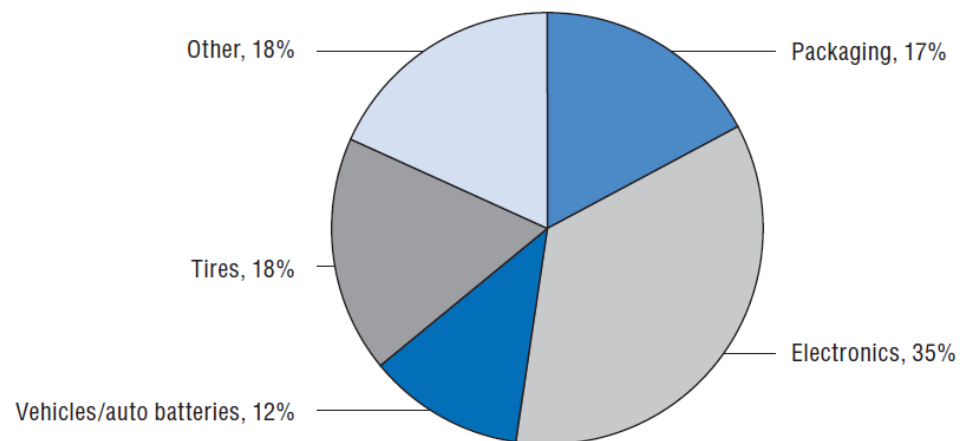


Figure 6: EPR by product type, worldwide

Source: OECD (2013), What have we learned about extended producer responsibility in the past decade? – A survey of the recent EPR economic literature, Paris

Regarding the policy instruments employed in EPRs (Figure 7), various forms of takeback requirements are the most commonly used (72% globally), sometimes in combination with advance disposal fees (ADF). These instruments are used for a wide range of products. Advance disposal fees are the next most frequently used instrument (16%), and they have also been applied to many different products. Deposit/refund instruments (11%) are concentrated in the used beverage container and lead-acid battery markets, sometimes in combination with take-back requirements. The other possible EPR policy instruments identified in the 2001 Manual – upstream combined tax/subsidy, recycling content standards, and virgin material taxes – appear to be used infrequently, if at all (OECD 2013).

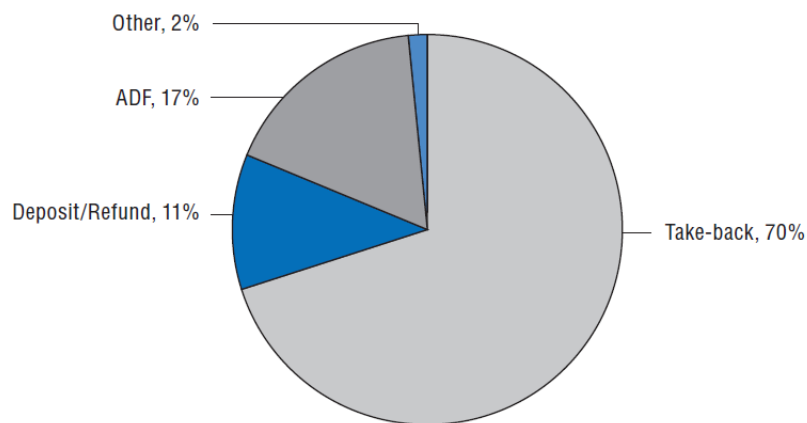


Figure 7: EPR by product type, worldwide

Source: OECD (2013), What have we learned about extended producer responsibility in the past decade? – A survey of the recent EPR economic literature, Paris

OECD (2016) referred that “The design and governance of EPR are crucial to their performance”. Therefore, we compare the responsibility of the consumers, nature of the collector, the financial burden, as well as the type of recycling entity and monitoring methods mandated in the household appliance recycling bills of China, India, Thailand, and Vietnam (Table 2).

Table2 : Comparison of EPR for WEEE in Asian countries

	China	India	Thailand	Vietnam
Name of the law (year)	the Ordinance for Administration of Collection and Disposal of Waste Electronic and Electrical Products(2009)	the e-waste (Management) Rules (2015)	the draft Act on the Management of the Waste Electrical Products and Electronic Equipment	Decision No:16/2015/QĐ-TTg (2015)
Responsibility of consumers	Deposit WEEE with designated collectors.	Deposit WEEE with designated collectors.	Deposit WEEE with designated collectors.	<ul style="list-style-type: none"> ✓ Directly ship the WEEE to the collection depot. ✓ Indirectly ship the WEEE to the collection depot through the collector. ✓ Ship the WEEE to the transport or recycling companies. ✓ Drop off the WEEE at service center for repair, maintenance, or exchange of products.
Collector	Designated collector	Manufacturer	Manufacturer	Manufacturer or recycling company
Financial burden	Manufacturer should pay for the WEEE-processing fund	Manufacturer	Manufacturer	Not specified (the manufacturer is responsible for the collection)
Recycling entity	Certified recycling company	Certified recycling company	Certified recycling company	Manufacturer or recycling company
Monitoring methods	Certified recycling company reports the number of processed WEEE units to the government	Certified recycling company reports the number of processed WEEE units to the government	<ul style="list-style-type: none"> ✓ Number of products sold or imported ✓ Collection goal for waste products ✓ Actual collection and processing achieved 	<ul style="list-style-type: none"> ✓ Number of products sold or imported ✓ List of depots and processing facilities ✓ Actual collection and processing achieved ✓ Number of cases of rejected waste product (at the collection stage) and reasons

Source: see this table of “Name of the law”

Among the emerging Asian countries, China was the first to have established a household appliance recycling bill. The Chinese household appliance recycling bill mandates the advance collection of a recycling fee to the WEEE fund from producers and importers, and when consumers bring WEEE to designated collectors, the collector buys the WEEE. However, the current problem in China is that designated collectors report the number of WEEE units commissioned to certified recycling companies, which in turn report the number of processed WEEE units to the government, in order to earn subsidies from the WEEE fund. Therefore, many false reports result with this monitoring method.

Subsequently, the household appliance recycling bill of India and Vietnam changed the responsibility of the manufacturer, from that of bearing the financial burden to WEEE collection. Thailand's household appliance recycling bill, which has been under consideration for 14 years since 2004, had assumed a similar system, in which the financial burden for WEEE management needs to be borne by the manufacturers. The present household appliance recycling bill of Thailand is similar to that of India and Vietnam, and reports indicate operational improvements, such as requiring manufacturers to set collection goals.

However, the responsibility of consumers is limited to depositing the WEEE with designated collectors and selling the WEEE to the informal sector as used products is not prohibited. As discussed earlier, recycling of WEEE in Thailand is currently handled by the informal sector, which purchases the WEEE as used products. Therefore, the designated collectors assigned by manufacturers compete with the informal sector with regard to the purchase price, which includes the environmental cost of disposing the WEEE. Thus, it is practically impossible to collect WEEE. A similar system is operational in Vietnam. The WEEE cannot be collected at specific collection depots designated by Japanese appliance makers.

To tackle these issues, an objective guideline must be established to determine if household appliances disposed by consumers are WEEE or used products. For example, the E-waste guidelines that are presently being examined by the Secretariat of the Basel Convention (2017) could serve as a good reference.

Conclusions

Recycling of WEEE in Thailand is currently handled by the informal sector, leading to serious environmental pollution and exports to surrounding countries. Under such circumstances, Thailand's household appliance recycling bill for 2017, which has already been examined over a long time period, changed the responsibility of the manufacturers from bearing the financial burden to collecting the WEEE. Compared to other emerging Asian countries that have already passed their respective household appliance recycling bills, namely China, India, and Vietnam, the present household appliance recycling bill of Thailand

is similar to that of India and Vietnam. Furthermore, there are some improvements (e.g., the manufacturer is required to establish and implement a WEEE collection goal). However, collectors designated by manufacturers are forced to compete on the purchase price, which includes the environmental cost, with the informal sector, thus making collection practically difficult. To resolve these issues, an objective guideline should be established to determine if such items generated by consumers may be classified as used products or WEEE.

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GUANXI NETWORKING IN THAI-CHINESE ENTERPRISES

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ABSTRACT

The value attached to the concept of “Guanxi” by Chinese enterprises in Southeast Asia can be observed in the business culture of such enterprises. Previous scholars have attributed the success of Chinese enterprises in Southeast Asia to “Guanxi networks.” The author’s observations regarding Thai enterprises made over a 5-year period were used to validate the research findings. In conclusion, the author classified Thailand as a market economy where business activities are conducted based on the value of Guanxi and economic strategies.

Keywords: Guanxi, Guanxi networks, Thai enterprise, Chinese enterprise, Charoen Pokphand Group

Introduction and Objective

Chinese enterprises in Southeast Asia value the concept of “Guanxi” (i.e., networking).¹ Previous scholars have attributed the immense success of Chinese enterprises in Southeast Asia to “Bamboo Networks”. Murray L. Weidenbaum introduced the concept of the bamboo network and used it to explain associations between Chinese enterprises in Asia and their economic interactions. The propositional hypothesis of the bamboo network refers to Chinese enterprises creating wealth and promoting regional economic development through Guanxi networking.² In Forbes’ 2014 Thailand’s 10 Richest List, eight of the members were affiliated with Chinese enterprises.

Table 1. Forbes’ 2014 Thailand’s 10 Richest List

Family	Net Worth	Age	Source
Chirathivat family, Thai-Chinese	127		Retail, real estate
Dhanin Chearavanont & family, Thai-Chinese	115	75	Food, retail

¹In Chinese societies, Guanxi is sometimes synonymous with value. In English, the Chinese phrase “Guanxi (關係)” roughly translates to “relation” or “connection.” However, some scholars have adopted the original term “Guanxi” or “guanshi.” During the interviews conducted in this study, representatives of Chinese enterprises preferred using the term “networking” to describe the management of their Guanxi networks. Therefore, “networking” was adopted as a translation for “Guanxi” in this study.

² Murray L Weidenbaum, *The Bamboo Network: How Expatriate Chinese Entrepreneurs are Creating a New Economic Superpower in Asia* (Martin Kessler Books, Free Press, 1996), pp. 4-5.

Charoen Sirivadhanabhakdi, Thai-Chinese	113	70	Soft drink
ChalermYoovidhy, Thai-Chinese	99	63	Beverages
KritRatanarak, Thai-Chinese	51	68	Media, real estate
VanichChaiyawan, Thai-Chinese	39	82	Insurance, soft drink
SantiBhirombhakdi& family	28	67	Energy drink
PrasertPrasarttong-Osoth	23	81	Healthcare
VichaiMaleenont& family, Thai-Chinese	17	94	Media
ThaksinShinawatra& family, Thai-Chinese	17	64	Investment

Source: Forbes' 2014 Thailand's 10 Richest List; Chinese website: <http://forbeschina.com/review/list/002184.shtml> (2015/12/15)

Among all listed companies in Southeast Asia, an estimated 50%–80% are Chinese companies. Consequently, the success of Chinese enterprises is attributed to their networking-centered business cultures,³ and that most leading business elites in Southeast Asia are overseas Chinese who also account for the largest group of immigrants in Southeast Asia. Most other immigrant groups are small in size compared with the Chinese population in Southeast Asia; for example, the numbers of Filipinos, Indonesians, Thai people, Malaysians, and Singaporeans are approximately 2%, 4%, 10%, 29%, and 77%, respectively, of the size of the Chinese population. From a different perspective, scholars have found that in the 1990s, Chinese people controlled 45% of the major enterprises in the Philippines; 18 of the 20 leading enterprises in Indonesia were owned by Chinese people; 9 of the top 10 enterprises in Thailand were owned by Chinese people, and 24 of the 60 leading enterprises in Malaysia were Chinese enterprises.⁴ Moreover, a number of scholars have examined so-called “Chinese capitalism” in Southeast Asia. Robison and Yoon (1990) examined Chinese capitalism in Indonesia;⁵ Lim (1985) examined Chinese capitalism in Malaysia;⁶ Hewison (1989),⁷ Suehiro (1985),⁸ and Phipatseritham (1982)⁹ examined Chinese capitalism in Thailand; and Yoshihara (1985)¹⁰ and Bello et al. (1990)¹¹ have examined Chinese capitalism in the Philippines.

³ S. Gordon Redding, *The Spirit of Chinese Capitalism* (Portland: Walter de Gruyter, 1993); Sterling Seagrave, *Lords of the Rim* (New York: Putnam's Sons, 1995).

⁴ Joel Kotkin, *Tribes: How Race, Religion and Identity Determine Success in the New Global Economy* (New York: Random House, 1994)

⁵ Richard Robison, *Indonesia and the Rise of Capital* (London: Allen and Unwin, 1986); Yoon Hwan Shin, “Role of Elites in Creating Capitalist Hegemony in Post-Oil Indonesia.” Paper presented at the symposium on The Role of the Indonesian Chinese in Shaping Modern Indonesian Life, Cornell University, July 13-15, 1990.

⁶ Lim MahHui, *Ownership and Control of the One Hundred Largest Corporations in Malaysia* (Kuala Lumpur: Oxford University Press, 1981), and Lim MahHui, “Contradictions in the Development of Malay Capital: State, Accumulation and Legitimation,” *Journal of Contemporary Asia*, No. 15, Vol. 1, 1985, pp.37-63.

⁷ Kevin Hewison, *Bankers and Bureaucrats: Capital and the Role of the State in Thailand* (New Haven, Conn: Yale University Southeast Asia Studies, 1989).

⁸ Suehiro Akira, *Capital Accumulation and Industrial Development in Thailand* (Bangkok: Social Research Institute, 1985).

⁹ Phipatseritham Krirkhiat, *A Study of Big Business Ownership in Thailand* (Bangkok: Thai Kadi Institute, Thammasat University, 1982).

¹⁰ Yoshihara Kunio, *Philippine Industrialization: Foreign and Domestic Capital* (New York: Oxford University

The effects of Thai-Chinese enterprises on Thailand throughout history can be characterized into the following development models:

1. Capital integration: In the early 1920s, business activities were primarily conducted by groups with different dialects such as the Thai rice industry.
2. Cultural integration: In the 1940s, the Free Thai Movement forced Chinese enterprises to undergo assimilation, and this created new cultural affiliations.
3. Economic integration: In the 1960s, the Chinese economy localized in Thailand and Chinese enterprises formed alliances with the Thai Government.
4. Political integration: In the 1980s, a new wave of political involvement began.
5. Social integration: In the 1990s, Thailand joined the Greater China Circle and formed localized affiliations.

Integration relies on the establishment of various forms of Guanxi. Guanxi enables Thai-Chinese people to not only become members of the “Bamboo Networks” but also gain sufficient influence on the economic structure in Southeast Asia. Numerous studies have attempted to explain the importance of Guanxi networking in business activities, particularly in Chinese social networks.¹² Elucidating real-work mechanics of business networking inside Thai-Chinese enterprises has piqued the interest of many researchers and was the motivation of the present study.

literature Review and Theoretical Articulation: The Economic Strength and Expansion of Guanxi Networking

Under the premise that Thai enterprises value Guanxi, the author categorized the characteristics of Guanxi networking in Chinese enterprises as “demarcation,” “natural monopoly,” “one-stop vertical integration,” and “regulation and policy formulation.” These characteristics all affect business operations, and are individually discussed in the following subsections.

Press, 1985).

¹¹ Bello Walden and Stephanie Rosenfeld, *Dragons in Distress: Asia's Miracle Economies in Crisis* (San Francisco: Institute for Food and Development Policy, 1990).

¹² Tsung-Yuan Chen, *Theorizing the Development of Chinese Ethnic Economy in Southeast Asia: Perspectives in Economic Sociology* (**Tamkang History Review**, Vol. 26, PP. 245–265, 2014). Notably, authors who had previously examined this type of literature mentioned that the excellent performance of the Chinese economy in Southeast Asia could not be attributed entirely to differences among ethnic cultures; historical colonization policies, immigration experiences, and market conditions are also strongly associated with the performance of the Chinese economy in Southeast Asia. Yi-Jun Gong, *A Preliminary Analysis of the Economic Success of Chinese in Southeast Asia and the Networking of Multinational Enterprises* (Taipei: The Sixth Complication of Regional Studies of Southeast Asia, Academia Sinica, 1997). D. M. Shapiro, E. Gedajlovic, and C. Erdener, “The Chinese Family Firm as a Multinational Enterprise, *The International Journal of Organizational Analysis*, No.11, Vol. 2, PP. 105–122. Many elites who speak fluent Chinese work in the commercial and academic sectors in Thailand. During interviews, young Thai scholars generally agreed that learning Chinese and establishing Chinese interpersonal relationships are beneficial for their future career development.

1. Guanxi Networking and Demarcation

Previous studies have determined that Chinese communities were the backbone that ensured the survival of early Chinese societies. Before the 20th Century, geopolitical ties were the primary factors that influenced the integration and separation of Chinese communities. Different communities had different geopolitical stances. Religious affiliations and secret societies were the key factors that influenced the rise of Chinese communities. Communities with a shared dialect often maintained that they had branched off from a common origin. Chinese enterprises had a significant correlation with “dialect groups and industries.”¹³ During the interviews, Thai respondents mentioned that the Chaozhou people controlled the wholesale and retail, restaurant, trade, metal, and rice sectors, with CP Group as the key representative; the Hainan people controlled the hotel, café, and department store sectors, with Central World as the key representative; the Fujian people controlled the agriculture and orchard sector; the Guangdong people ran gold businesses; and the Guangxi people primarily engaged in tourism.¹⁴ Among these dialect groups, Charoen Sirivadhanabhakdi, founder of the Saha Union, and TosChirathivat, third-generation head of in the Chirathivat family and CEO of the Central Group and SCG, are leaders in contemporary Thailand. These Chinese corporate conglomerates are involved in the finance, construction, agriculture and processing, retail, alcohol, iron and steel, textile, securities, telecommunications, and hotel sectors.¹⁵

By applying Go terminology, the implicit purpose of using dialect groups to develop business networks is to “occupy territory.” Thai business groups are not only differentiated by industry but also categorized by their “gang” heritage. These groups have their own territories and “unspoken rules.” An observation of Thai-Chinese enterprises revealed that lowerranked employees, regardless of gender or seniority, commonly refer to higherranked employees as “boss” rather than “supervisor.” This is an example of the group's “gang” heritage. Appellations can further be categorized into national and local terms such as *Chao Pho*, *Naai Hua*, and *Por Liang*. The chairs of various unions are typically assumed by these “bosses.” A Dispute Mediation Task Force has even been established in the Chamber of Commerce, including reputable bosses responsible for mediating turf disputes.

The control over territory is observed not only in Chinese enterprises but also in everyday business activities in Thailand. Locally, “family territory” is extremely apparent. “Turf” is essentially a family network. The author once interviewed a non-Chinese retail family in the northeast region, where almost all family members were involved in retail, collectively running five stores. They had almost no competitors.¹⁶ Auto rickshaws in Bangkok is a notable “territory

¹³Guo-TuZhuang. “A Study on Factors of Establishment of overseas Chinese Organizations in East Asia before 20~(th) Century,” **Southeast Asian Affairs**, Vol. 3, 2010, PP. 46–52.

¹⁴Yi-Yuan Li. **Culture and Behavior**. (Taipei: The Commercial Press, 1992), PP. 146–146.

¹⁵Guo-Chiang Zheng, “Politics of Thai Entrepreneurs,” **Southeast Asia Vol. 4**, 2000, PP. 8–9.

¹⁶Interviews with respondents from other Southeast Asian countries revealed similar situations, where certain industries were monopolized by families; for example, a Burmese respondent of Indian descent had monopolized

economy” regulated by various gangs; only recently has the government intervened with regulations. Moreover, the confusing Bangkok metro system is operated by three different companies, and tickets are not interoperable. This situation highlights the turf wars between different organizations, in which the government has yet to intervene.¹⁷ One respondent asserted the following:

“You see, the construction of this railway has already been completed, but it is still not in use. It has been left idle because negotiations have yet to be settled. This is how things operate in Thailand. It’s not strange at all.” (Respondent B)

Although a set of “unspoken rules” governs business territories, these rules can be shared through networking. One respondent asserted the following:

“Managing a business is like playing a game of Go. The purpose of occupying territory is to corner others into establishing networks rather than competition or opposition.” (Respondent E)

7-Eleven operates more than 10,000 stores in Thailand. These stores can be categorized into: direct stores, franchise stores, and authorized stores. In Chiang Mai (north), Ubon Ratchathani (northeast), Phuket (south), and YaLa (south), management is authorized to “local bosses.” Even the strongest competitors find it difficult to compete with rivals on their own turf; instead, they opt to share territory.

Naturally, Chinese enterprises disfavor investing in some industries, including those that have experienced failure such as petroleum companies, gas stations (e.g., CP Petro Asia), and fossil fuel companies; or government-run enterprises such as the PTT Public Company Limited, TOT Public Company Limited, and CAT Telecom Public Company Limited. Tobacco and alcohol are exclusive territories of the Crown Property Bureau, which is managed by the government and the Crown. Therefore, Chinese enterprises do not encroach on these industries. When asked why 7-Eleven in Thailand do not offer home delivery services, a 7-Eleven manager replied as follows:

“Offering home delivery services at 7-Eleven would encroach on the business of EMS Thailand. With our 10,000 stores across Thailand, how would the government compete with us? Moreover, the CP Group makes it a rule to never compete with the government.” (Respondent B)

2. Guanxi Networking and Natural Monopolization¹⁸

Many industries in Thailand have been “naturally monopolized” because of

the tire market.

¹⁷ A similar situation can be observed in the Philippines. The management of Manila Airport is outsourced to three different companies across three territories. Disputes among these companies have hindered the consolidation of operations. The Bangkok metro system only began integrating its ticket prices in March 2017.

¹⁸ W. Winichagoon, “CP empire: Monopoly? (in Thai),” *Corporate Thailand*, May 1996, pp. 37-53. During the interviews, the CP Group representative mentioned that the group had previously held an internal discussion to address the problem of monopolization. The group concluded that monopolization is a product of an expanding market.

companies occupying various territories. Baumol, Panzar, and Willig (1982) noted that subadditivity exists in an industry when products in the said industry can be produced at a lower cost by one firm than by two or more firms; this increases the likelihood of natural monopolization within the industry. In other words, the market size of an enterprise is so large that other vendors are unable to compete.¹⁹

In Thailand, Chinese enterprises prefer resource industries such as rubber, paper, and iron and steel, as well as consumer packaged goods such as agricultural products, food products, distribution, and logistics. Therefore, natural monopolization is particularly evident in these industries.²⁰ The interviewed representatives of Thai enterprises and overseas Taiwanese merchants agreed that monopolization is the biggest challenge to expanding business operations in Thailand. In Thailand, almost all distribution channels are controlled by large groups; for example, the CP Group controls the distribution channels of 7-Eleven, Makro, and True (telecommunications). The Central Group controls the distribution channels of Central. The PTT controls the distribution channels of gas stations.

Monopolization refers to the segregation of markets through demarcation, which is a type of informal networking designed to restrict competitors and gain market rights rather than destroy competitors. This process is synonymous with that of “sustainability” coined by industry economists.²¹ Its effects even surpass those of government departments.

Chinese enterprises’ lack of interest in nonresource and nonconsumer goods industries and the monopolization of resources and industries by corporate groups are the main reasons contributing to the underdevelopment of technological industries in Southeast Asia. Previous studies on Chinese enterprises in Southeast Asia have found that over the past two decades, overall economic development and the production income of the manufacturing industry in Thailand have been considerably more evident than the growth of the industries controlled by industry tycoons.²² Dutch economist and historian James Ingram examined the economy of Thailand and asserted that although the Thai economy had fluctuated considerably, average income exhibited little increase relative to labor and new technologies, and the application of funds had remained relatively unchanged.²³

Regarding why most Chinese enterprises in Southeast Asia are uninterested in the high technology industry, one Chinese enterprise representative responded as follows:

¹⁹ William J. Baumol, C. John Panzar, and Robert D. Willig, *Contestable Markets and the Theory of Industry Structure* (New York: Harcourt Brace Jovanovich, 1982)

²⁰ Cheung, Gordon C. K.; Gomez, Edmund Terence, "Hong Kong's Diaspora, Networks, and Family Business in the United Kingdom: A History of the Chinese "Food Chain" and the Case of W. Wing Yip Group," *China Review*, Vol. 12, No. 1, p. 48.

²¹ Paul Handley, *op.cit.*, p. 164. Sustainability refers to enterprises of natural monopolies preventing potential competitors from entering the market to share the profits and maintain their monopoly.

²² Translated by Ying-Jun Liu. **Asian Godfathers: Money and Power in Hong Kong and Southeast Asia**. (Taipei: Commonwealth Publishing, 2010), P. 99, 111.

²³ James Ingram, *Economic Change in Thailand, 1850-1970* (CA.: Stanford University Press, 1971).

“Chinese enterprises control a lot of natural resources, making 30% to 40% profit with every transaction. Why would they invest in the technology industry (e.g., Taiwan’s technology industry turns a gross profit of 3% to 4% only)? That would be exhausting. The factory management guidelines adopted in Taiwan are insufficient in resource-rich Southeast Asian countries.” (Respondent I)

This situation explains why Taiwanese high-tech companies endeavor to advance into ASEAN markets but fail to secure the cooperation with local Chinese enterprises. This differs from the activities of Taiwanese merchants in China and explains why foreign consumer goods investors are forced to cooperate with local distributors or increase production costs. Some investors fail altogether.²⁴

“Monopolization” is observed in Thailand’s innovation enterprises. Marketing expert Philip Kotler mentioned that Café Amazon was once an independent company that sold high-quality and affordable products in PTT-run gas stations. However, the company enjoyed unprecedented success and was eventually forced to merge with the PTT. For the PTT, merging such a lucrative company into its system prevented interest sharing. Moreover, the PTT entered into an agreement with 7-Eleven prohibiting 7-Eleven from selling ground coffee; the objective was to monopolize the gas station coffee market: a clear example of Thailand’s antiencroachment culture.

The automotive industry is an exception to the monopolization situation in Thailand. Based on the findings of previous studies, the automotive industry in Thailand is largely dominated by foreign investors rather than domestic investors.²⁵ During the initial development phase of the automotive industry in Thailand, foreign capital far outmatched domestic capital and domestic investors lacked technological capability and interest. These situations highlighted the underdevelopment of small and medium-sized enterprises (SMEs) in Thailand and the country’s focus on developing its cultural and creative industries.²⁶ In South Korea, the objective of developing cultural and creative industries was to prevent economic resources from becoming concentrated in large conglomerates after the Asian financial crisis. This was also the case in Thailand. For graduating students, an alternative to securing employment in large groups or SMEs was to enter cultural and creative industries and take advantage of Thai people’s seemingly innate aesthetic acuity. The monopolization of mainstream channels has led to the rise of the stall culture in Thailand, with the formation of markets and train station night markets across the country.

²⁴ Taiwan’s famous Hot-Star company sell high-priced items in Thai department stores. However, profits are limited because the tariff on sales is nearly 50%.

²⁵ Tai, Wan-Ping and Hong, Po-Chi, “The Internationalization of Thailand’s Automotive Industry: A Political Economic Analysis of the Late Developing State,” *Thammasat Review*, No. 15, Vol. 2, 2012, pp. 11-39.

²⁶ Shang-Mao Chen, “The Political Economy of the Cultural and Creative Industry in Thailand.” *Asia Pacific Research Forum*, 54th, 2011, PP. 1–28.

3. Guanxi Networking and One-Stop Integration

In addition to demarcation and channel monopolization, another characteristic of business operations in Thailand is vertical integration or one-stop integration. The CP Group is a one-stop enterprise that began with agriculture. Business Weekly previously attributed the success and expansion of the Chia Tai Group to the technological superiority of Taiwan. Enterprises that endeavor to expand in Southeast Asian markets must be sufficiently large to integrate operations. One-stop production that spans across Greater China and overseas markets is a key characteristic of Thai-Chinese enterprises.²⁷

A comparison between 7-Elevens in Thailand and those in Taiwan revealed that the greatest difference between them is that Taiwan focuses on marketing peripheral services and Thailand focuses on selling domestic products. Therefore, the store chains that these two countries adopt very different core values. In Taiwan, the limited market size renders expanding the economy of scale extremely difficult. Therefore, Taiwanese convenience stores are required to launch new services to profit. In economics, this situation is referred to as the “Invisible Second Floor,” where stores aim to maximize profit by using the smallest possible amount of space. In Thailand, 7-Elevens began with the marketing of local produce and food products. The concept of “one-stop integration” refers to the establishment of channels that coherently merge production and sales; for example, the objective of 7-Eleven, Makro, and Lotus Supercenter is to seek channels to market products. Compared with 7-Elevens in Taiwan, those in Thailand stock significantly more self-produced and group products. Hence, selling products became the primary purpose of the CP Group to establish channels.²⁸ Therefore, except for a few franchise stores, services that are not vital to the core operations of the CP Group such as IBON and home delivery services are rarely offered in 7-Elevens in Thailand. A Thai manager offered the following explanation:

“Roughly 40% of the products sold at 7-Elevens are self-produced products.”

(Respondent B)

The concepts of one-stop integration and territory explain why the CP Group seldom cooperates with other Thai-Chinese enterprises. These enterprises have their own territories. In addition, cooperating with others is synonymous to some extent with relinquishing control to others.²⁹

Recent discussions on the construction of a high-speed railway system fully embody the concept of once-stop integration. Among international discussions concerning the

²⁷Business Weekly, Vol. 1505, September 2016, P. 42.

²⁸The author previously visited an enterprise affiliated with the CP Group involved in almost all aspects of production from the processing of raw materials (e.g., milling rice and raising chickens) to the production of final products (e.g., bread and frozen foods).

²⁹ Paul Handley, “De-mythologizing Charoen Pokphand: an Interpretive Picture of the CP Group's growth and diversification,” in *Chinese business in Southeast Asia; Ethnic business, Chinese capitalism in Southeast Asia* (Routledge, London; 2003), p. 173.

construction of a high-speed railway system in Thailand are Japan's Bangkok–Chiang Mai Line and China's Bangkok Line. These projects are part of Thailand's national strategy; however, their economic benefits are limited. The construction of the Bangkok–Rayong Line, which circles the Gulf of Thailand and awarded to the CP Group, has the greatest economic value. This line runs along the coast, passing Chonburi (an automotive city), Lachabang (a deep-water harbor), and Pattay (a tourist destination), and eventually terminating in Rayong (Japan-vested industrial city). Not only does this route exhibit substantial economic potential, it also has almost no competition from airlines. Utilizing railway logistics, avoiding highway traffic, and accelerating the transportation of group products are all considerations of one-stop integration.

Finally, one-stop integration is reinforced by Guanxi networking, which can be validated by channel establishment and self-training of human resources. The CP Group believes that professionals must be cultivated internally. Therefore, the curricula taught at the Chia Tai Vocational Institute, Chia Tai Experimental High School, and Panyapiwat Institute of Management fundamentally cater to the immense human resource requirement of the CP Group. For example, distribution management is the most popular course in the institute; enrolled students are required to intern at relevant departments in the Group.³⁰ All business activities in the Group have a corresponding department. The Transportation Management College caters to the Thailand 4.0 project. The college was established to foster the professionalism required once the high-speed railway system has been completed, thereby becoming a one-stop institute for education (human resources).

4. Guanxi Networking and Government Relations

Enterprises that value Guanxi networking influence policies through government–business relations. Such relations enable enterprises to become regulators. Previous scholars have found that the influence of Guanxi relations uses size to influence public policy in the enterprise's favor.³¹ Thai-Chinese enterprises rely on business networking for mutual development; therefore, families that establish Chinese enterprises in Thailand generally involve themselves in Thai politics, thereby forming a corporate environment focused on government–business relations.

Chinese enterprises value government–business relations and thus often invite retired political figures to serve as consultants to maintain favorable relations with political parties and the military. The representatives of Chinese enterprises interviewed in this study did not deny their enterprises' political affiliations or level of political influence. They explained that

³⁰Panyapiwat Institute of Management is a self-proclaimed networking university. The author audited multiple presentations from relevant departments, all of which emphasized their networking efforts with other enterprises. With recent advancements in networking technology, the school grew from 3000 students in 2007 to over 13,000 in 2017.

³¹ Paul Handley, *op.cit.*, p. 164.

government departments and policy content were outdated and that they assisted the government in forming unified standards; for example, the government failed to act during the outbreak of SARS in 2004, forcing the CP Group to take the initiative in forming health standards (indoor feeding methods) for the public. During this period, “CP poultry” became a symbol of safety. During the interview period, the Chairman of the CP Group Dhanin Chearavanont participated in the Thailand 4.0 forum hosted by the Prime Minister of Thailand, who expressed his support for the development of a high-speed rail, long-term health care, and robots in Thailand.³²

As mentioned, the internationalization of Thai-Chinese enterprises is a type of replication of domestic business networking overseas. Therefore, Chinese enterprises also value international government–business relations. In China, leaders of the CP Group not only met with Chinese officials but also funded numerous government projects in the 1990s such as the establishment of construction corps, animal husbandry departments, and transportation bureaus. Moreover, M Thai, an affiliated enterprise of the CP Group, has maintained a long-standing and tight-knit relationship with the Chinese military.³³ Maintaining positive government–business relations is the primary reason for the CP Group’s success in China.

To expand international networks, enterprises are required to establish positive relations with other governments. In actuality, enterprises fully integrate themselves into the country they are investing in. The ability to operate in a country’s native language is a fundamental criterion for cooperation. In addition to China and Taiwan, the CP Group has gained trust and established Guanxi networks in many other countries. For example, the Group Founder Chia Ek Chor sent his third son, Sumet Jiaravanon, to Indonesia. He later married an Indonesian woman and gained Indonesian citizenship, thereby establishing ties with the Suharto family. However, in a country that highly values government–business relations, Sumet Jiaravanon was an outsider. Amidst political exclusion by Guanxi competitors in Indonesia, the operations of the CP Group in Indonesia gradually shifted to China after the 1990s, and Sumet Jiaravanon continued his career in Hong Kong.³⁴

Method and Empirical Observations and Interviews

The author of this study interviewed numerous professionals regarding the mechanics of enterprise-based Guanxi networking in Thailand between 2012 and 2018. The information

³² Pichaya Changsorn, “Industry 4.0’ Thailand’s path to prosperity, seminar hears,” *THE NATION*, February 16, 2017, in

[http://www.nationmultimedia.com/news/business/EconomyAndTourism/30306450\(2017/2/18\)](http://www.nationmultimedia.com/news/business/EconomyAndTourism/30306450(2017/2/18))

³³ Paul Handley, *De-mythologizing Charoen Pokphand: An interpretative picture of the CP Group’s growth and diversification*. In: *Ethnic Business. Chinese capitalism in Southeast Asia* (New York: Routledge Curzon, Abingdon/New York 2003), p. 172.

³⁴ Paul Handley, *op.cit.*, p. 160.

acquired during the interviews and the observations made by the author are discussed in the following section.

1. Organization and Institutionalized Mechanics of Guanxi Networking

One of the key information learned during the interviews with representatives of Thai enterprises in this study was that Chinese groups greatly value networking. In the most prominent case, the group in question established a dedicated department for business networking separate from general business affairs. This department comprised several subdepartments such as a “Greater China Affairs Team,” “Japan, Korea, and ASEAN Affairs Team,” and “Europe and America Affairs Team.” The main duty of each of these subdepartments was to establish relations within their jurisdiction. The Greater China Affairs Team was responsible for establishing networks in Greater China, including the northern, central, and southern regions (including Taiwan and Hong Kong). Subsequently, relations were established not on business grounds but rather based on education and cultural exchanges. Government relations included those with embassies (e.g., Taipei Economic and Cultural Office), chambers of commerce (e.g., Taiwan External Trade Development Council), suppliers and vendors, and schools. The team also attended relevant events such as the China Embassy Gala.

An analysis on real-world mechanics revealed that these relations were without intent, were not for the purpose of sales or business, did not entail building favorable “public relations,” were not focused on fulfilling corporate social responsibility, and did not involve business opportunities. These relations were for maintaining and sharing information.

Several leaders made the following assertions:

“Interpersonal relations and networks help create markets. Business networking is like a game of Go.” (Respondent A)

*“Managing Guanxi is like playing a game of Go. My move may not be to encroach on your territory. However, the stone could represent a type of constraint; it may seem irrelevant at first, but it could be the key move to winning the game.”*³⁵ (Respondent A)

“Business departments focus on discussing deals and earning profits. Therefore, they usually play the role of ‘Bad Cops.’ Business networking departments are the ‘Good Cops’ in an enterprise. They control Guanxi to facilitate business affairs.” (Respondent B)

Group presentations often emphasize the value of Guanxi networks to the group in question. Networking constitutes the informal establishment of Guanxi. When Guanxi networks are formed, they facilitate cooperation and are difficult to replace.

A Taiwanese merchant operating in Thailand asserted the following:

“When dealing with Chinese enterprises, you can expect to be treated courteously. However, real negotiations are an extremely tedious process involving many tests.” (Respondent C)

³⁵The Charoen Pokphand Group requests all employees to attend Go instruction for 1 day. Executives believe that such training facilitates enterprise management.

Thai culture is centered on ceremonies, gatherings, and dinners. Such events are sites for groups to establish Guanxi. Leaders attend such events each year to maintain existing Guanxi or establish new Guanxi. Ceremonies and gatherings are customary but do not always lead to cooperation. Rather, such events enable guests to establish trust with others and familiarize themselves with their targets' background through repeated meetings and gatherings. Such acquired knowledge is then applied in subsequent interactions.

2. Enterprise-basedGuanxi Network: Charoen Pokphand Group

The Chai Tai Chung Shop opened in 1921 and initially operated as a seed trader. Led by current chair DhaninChearavanont, the shop crossed into the feed industry in 1954, forming the Charoen Pokphand (CP) Group. Because the cost of poultry farming in Thailand was higher than that in the United States at the time, the CP Group partnered with American company Arbor Acres in the 1970s and crossed into the poultry industry. The CP Group consolidated farming standards and established industrial distribution chains, thereby cementing a foundation that enabled it to later cross into the distribution industry. In the 1980s, the CP Group began the horizontal division of labor and expanded into other industries such as the distribution industry (7-Eleven, Makro, and Lotus Supercenter), real estate industry (CPLand), and telecommunications industry (TelecomAsia). The CP Group became a corporate conglomerate.³⁶

When asked about the key factors that had led to the success of the CP Group, chair DhaninChearavanontstated the following:

*"The key to managing a business is opportunity. Opportunities can be found through networking, which can resolve funding and technical issues."*³⁷

*"Establishing and utilizing Guanxi enables businesses to gain market concessions."*³⁸

From the perspective of management, Guanxi networking constitutes the conversion of acquired resources into corporate profit. Granovetter (1985) proposed social embeddedness, stating that "all economic actors are embedded in and influenced by their social networks. Vendors are required to propose partnerships or alliances depending on their status and Guanxi. This is known as business networking ability."³⁹ Scholars believe that Chinese enterprises in developing countries such as Thailand possess only generic skills and become strong through business networking.⁴⁰

³⁶ A reporter for the Far Eastern Economic Review interviewed CP Group executives. PhiraboonPhaiboontham, *CP Group's Diversification: History, Strategies and Development Model* (Bangkok: Charoen Pokphand, 1996);Jonathan Friedland, "Seeds of Empire", *Far Eastern Economic Review*, 20 April 1989, pp. 46-47.

³⁷ Pavidapanaond, "The Making of Thai Multinationals. A Comparative Study of the Growth and Internationalization Process of Thailand's Charoen Pokphand and Siam Cement Group," *Journal of Asian Business*, Vol. 17, No. 3, 2001, p. 61.

³⁸ Paul Handley, *op.cit.*, p.167.

³⁹ Mark Granovetter, "Economic Action and Social Structure: The Problem of Embeddedness", *American Journal of Sociology*, 1985, Vol. 91, No. 3, pp. 481-510.

⁴⁰ Pavidapanaond, *op.cit.*, p. 45.

From the perspective of local enterprise culture, one supervisor offered the following explanation:

"An enterprise is like a large family. The people of Chaozhou have the saying 'Zi Ji Ren' (one of our own), which means that 'it is easier to get things done when you are connected.'"
(Respondent A)

The question of how the commercial value of Guanxi networking can be determined warrants investigation. Many developing countries have an acute perception of the openness of their distribution industry. One such country is Malaysia. The Malaysian government believes that opening the country to convenience stores and supermarkets would jeopardize the survival of rural retail businesses. In Thailand, 7-Eleven has not encountered considerable opposition from the community, and this is the result of networking. Through the interviews, the author noticed certain trends summarized in the following quotations:

"7-Eleven stores in Thailand are not as clean as those in Taiwan. This is because in Thailand, vendors are allowed to operate in front of the stores. The enterprise must learn how to coexist with vendors so as not to be opposed by them..." (Respondent A)

"The policy of 7-Eleven in Thailand is to be courteous, even to stray dogs. Thai people believe that stores should treat animals in the same way that they treat their guests. This is a type of Guanxi management." (Respondent A)

"Conflicts between 7-Elevens and general stores in Thailand are unlikely. First, 7-Elevens are more expensive. Second, the products are different. 7-Elevens mainly market products produced by corporate groups. Roughly 70% of the products they carry are food products, and only a small portion are general items. Maintaining a favorable relationship with the community is a key management principal of 7-Elevens." (Respondent D)

"Why are certain food courts so cheap in Thailand? It is because vendors came to an agreement with retail enterprises during the construction of marketplaces to allow them to continue their businesses within the marketplaces. Therefore, retail enterprises have provided vendors with opportunities. Such an arrangement has naturally gained the approval of the people." (Respondent C)

"Corporate group employees are like a family of people who take care of one another. The most important human resource policy today is the 'No Layoff' policy. Corporate groups value both external and internal relationships." (Respondent A)

Large enterprises gain market support through Guanxi networking, making the distribution industry the source of their profits.

Chinese networks facilitated the early internationalization of Chinese enterprises in developing countries. Pavida Pananond compared internationalization trends among companies in lagging countries and found that enterprises in developed countries achieved internationalization through technological superiority. By contrast, Chinese enterprises achieved internationalization by expanding Chinese networks and adopting outward

networking establishment strategies.⁴¹ The CP Group applied its successful Guanxi networking experiences gained in Thailand to various international markets such as Indonesia (1972), Hong Kong (1974), Singapore (1976), Taiwan (1977), and China (1979),⁴² becoming a multinational enterprise.⁴³

Because of its Chinese networks, the CP Group's efforts toward internationalization were particularly successful in China. In 1979, the Chinese government opened one of its cities—Shenzhen—to foreign investors for the first time. While other investors remained speculative, the GP Group invested US\$15 million to launch China's cultivation industry. After the Tiananmen Square Protest in 1989, China's economy fell into disarray and almost all foreign investors withdrew; however, executives from the CP Group visited Deng Xiaoping to discuss expansion. Before the Asian financial crisis of 1997, the CP Group had been the largest foreign capital investor in China. Only half of its profits had originated from Thailand. In recent years, China has surpassed Japan and the United States as Thailand's largest trading partner, and Chinese enterprises serve as crucial intermediaries between the China and Thailand. The Chopsticks Network has gradually gained sufficient influence on the economic structure in Asia. With an apparent preference for the markets in the Greater China region, the CP Group adopts a different approach from those of other foreign enterprises, which largely commission business representatives to implement their foreign investment strategies. Specifically, family members of the group spearhead these strategies themselves.

The CP Group is not the only enterprise that relies on networking to achieve internationalization; the Siam Cement Group (SCG) has also expanded its operations through Guanxi networking.⁴⁴ Notably, many Chinese enterprises have expressed that although China is important, it should not be the only priority. The CP Group began its internationalization efforts in Indonesia while closely collaborating with Japan in creating Glico and Meiji. The group has investments and branches in over 10 countries worldwide, not only within the Greater China Circle.

⁴¹ Pavida Pananond, op.cit., p. 46.

⁴² In the 1970s, the Republic of China's government called on the CP Group to invest in Taiwan at a time of poor economy. This endeavor led to the birth of CP Taiwan. Simultaneously, the CP Group also invested in China. Once the Shenzhen Special Economic Zone opened with China's reform, the CP Group became the most heavily traded joint venture on the Shenzhen Stock Exchange.

⁴³ Among the CP Group's many foreign investments, Hong Kong served to fund the group's capital movements. Currently, the CP Group has investments in seafood farming in Russia, poultry farming in Turkey, and poultry products in Brazil. The group is optimistic about the immense potential of the Russian and Indian markets, and thus has plans to maintain long-term investments in these markets. Yin-Fan Chen, "Thailand's Richest Man Playing the Odds," *China Times*, 29 November 2015.

⁴⁴ Pavida Pananond, and Carl P. Zeithaml, "The International Expansion Process of MNEs from Developing Countries: A Model and Empirical Evidence Asia Pacific", *Journal of Management*, Vol.15, 1996, pp. 163–184.

Result and Discussion and Evaluation of Enterprise-basedGuanxi Networking

1. Cultural Evaluation

European colonists sequentially arrived in Southeast Asia at the beginning of the 16th Century. However, expansions did not begin until the 19th Century. Colonial countries generally dispatched only a few colonists and opted to use existing local elites to achieve their colonization goals and rally colonists, local rulers, and local residents under one colonial power. The Europeans were considered the supreme power; therefore, local political and economic leaders not only established relations between one another but also sought to maintain positive relations with the colonists. This Guanxi culture had a far-reaching impact on operational success.

Guanxi networking is an essential process for Thai-Chinese entrepreneurs to achieve government–business integration. Marriage between figures from wealthy Chinese families to those from political groups in Thailand can be dated back as far as the beginning of the Chakri Dynasty. The purpose of these arranged marriages was to protect the interests of Chinese enterprises, serving as a type of consolidation of interests, where Chinese merchants gained noble status and protection in exchange for providing the Royal family of Thailand with immense funds to fill its treasury. Even today, arranged marriages to establish government–business relations are extremely common in high-end society in Thailand.

Unger (1998) compared three economic departments (finance, textiles, and heavy industry and transportation infrastructure) and explained the advantages of Chinese enterprises in economic development strategies from the perspective of social capital. The researcher concluded that Thai people seem to be less inclined to social capital than Chinese people, who value Guanxi. These observations validated the development of Thai-Chinese Guanxi networks and the importance of these networks to the Thai economy.⁴⁵

As previously mentioned, social embeddedness theory indicates that all economic actors are embedded in social networks and influenced by the status they have within those networks. From the perspective of industrial organization theory, researchers of distribution agree that distribution markets such as 7-Elevens in Thailand are market structures formed amidst the long-term interactions of various social powers. These markets are difficult to change in the short term.⁴⁶ These assertions explain why Thai-Chinese enterprises value the bamboo network. Thailand is a kingdom and the Thai culture is one containing a social hierarchy. Government officials and university students are recognized by uniforms and emblems that symbolize their organization and social status. Thailand's hierarchical society values etiquette and ritual, and social class is distinguished by these ceremonial processes. Because of Thailand's social hierarchy, interpersonal relationships become less

⁴⁵ Danny Unger, *Building Social Capital in Thailand: Fibers, Finance, and Infrastructure* (New York: Cambridge University Press, 1998).

⁴⁶ Ying-Je Hsu, **Distribution Management**. (Taipei: Future Career Publishing Corporation, 2011).

direct and interactions are governed by many unspoken and shady rules. Closed private networking is common in Thailand and is the only means of establishing connections with otherwise unapproachable classes. Therefore, rituals are vital events for Guanxi networking.⁴⁷

Guanxi networking is influenced by Chinese culture, particularly that of Chaozhou merchants. Chaozhou merchant culture focuses on family management, values ethics and credibility, and rejects working for others.⁴⁸ In the interviews in this study, a Thai merchant asserted the following:

“The Chaozhou people are united. They have a strong sense of lineage and value family and unity. They also have mutually recognized relationships.” (Respondent A)

Chaozhou people look after their own and maintain mutual territory through implicit and explicit social networking. Outsiders are unwelcome, and this leads to the formation of monopolies and exclusive one-stop business models.⁴⁹ In “gang ethics,” gang bosses coordinate and negotiate territory to achieve interestsharing through clientelistic networking.

Scholars have noted that the development of Thai-Chinese conglomerates is similar to that of South Korean chaebols such as Samsung and Softstar. However, from the perspective of political economics, the development of Thai-Chinese enterprises and that of South Korean enterprises are significantly different. Biggs and Levy (2003) asserted that the success of industrialization depends on whether a country’s government constitutes a strong state or a weak state. The researchers argued that government intervention is effective only when a government constitutes a strong state.⁵⁰ The development of South Korean chaebols can be predominantly attributed to government support. Thailand has a weak centralized government that lacks regulatory power, and the development of the overall economic environment depends on the structural infiltration of the interests of government officials and benefiting groups.⁵¹ The rise of Thai-Chinese groups is attributed to Guanxi networking rather than government support.

2. Management Evaluation

Although Chinese enterprises are relatively successful in Thailand, the negative impact of the excessive value placed on external Guanxi, territorialism, ritualism, and cronyism on internal management and technological advancement have been a long-standing problem for

⁴⁷ Because of the many rituals in question, the business management efficiency of Thai enterprises is questioned.

⁴⁸ Yi-Yuan Li, prior literature, **P. 146**.

⁴⁹ In the Chaozhou dialect, “商者無域” (shang zhe wu yu; business without domain) refers to one-stop business operations.

⁵⁰ T. S. Biggs and B. D. Levy, “Strategic Interventions and the Political Economy of Industrial Policy in Development Countries, in D. H. Perkins and M. Roemer (eds.), *Reforming Economic System in Development Countries* (Cambridge: Harvard University Press, 1991). Akira Suehiro, “Determinants of business capability in Thailand” in Jomo K.S. and Brian C. Folk, *Ethnic Business, Chinese capitalism in Southeast Asia* (New York: Routledge, 2003), pp. 129-154.

⁵¹ Somboon Siriprachai, *Industrialization with a Weak State: Thailand's Development in Historical Perspective* (Kyoto: Kyoto CSEAS Series on Asian Studies, 2012).

group management, often resulting in poor investment and failed experiences. For example, the CP Group previously invested in the fossil fuel industry (e.g., Vinylthai)⁵², energy industry (e.g., CP Petro Asia), and tollway transport services (e.g., Don Muang Tollway). The increased diversity and complications of investing in new businesses resulted in many failures.⁵³

The value of cronyism and “no layoff” policies led to companies valuing external Guanxi over internal skill, internally promoting family members and relatives, and prioritizing the interests of executives, all of which hindered specialization. Moreover, increased multinational production blurred production costs and impaired performance. These are all management issues pending resolution.⁵⁴

Territorialism and complex parent-subsidiary networks fuel the territorial factionalism behaviors of company managers. A comparison between a Thai group and corporate conglomerates in other countries revealed that international conglomerates typically operate as independent listed companies in various countries. International conglomerates are rarely controlled by a single central holding. Factionalism leads to repeated investment and waste.⁵⁵ The CP Group alone controls 16 logistics companies. These companies adopt various management models and specifications and do not complement one another; they even compete with one another. In recent years, executives of the CP Group have introduced the concept of synergy. However, the existing structural culture of the group is difficult to change.

One manager asserted the following:

“Competing amongst ourselves is better than competing with others, after all.”

(Respondent A)

3. Social Evaluation

A number of scholars believe that Guanxi networking in Chinese enterprises involves not only economic aspects but also the management of government–business relations.

One of the most prominent developments in government–business relations in Thailand was the coup staged by Field Marshal Sarit Thanarat in 1957, where the Thai Government gradually abandoned its original “economic nationalism” policies. Chinese enterprises formed new alliances with the Royal People’s Party and the military to create a sound economic foundation. In 1973, the public overthrew Thailand’s military dictatorship, thereby converting the political system into a multilateral structure comprising the Royal family, the military, technical officials, capitalist groups, and businesses. Thereafter, Chinese

⁵² Pavid Pananond, op.cit., p. 49.

⁵³ Paul Handley, op.cit., p. 173.

⁵⁴ In 1990, the CP Group invited a professor from the School of Business, National Taiwan University, to reorganize the group. However, these results failed to meet the group’s initial expectations. Paul Handley, op.cit., p. 176.

⁵⁵ The subsidiaries of the CPALL Group include Counter Service Co., Ltd.; CP Retailink Co., Ltd.; CPRAM Co., Ltd.; Thai Smart Card Co., Ltd.; Gosoft (Thailand) Co., Ltd.; MAM Heart Co., Ltd.; Management Co., Ltd.; Suksapiwat Company Limited; Panyatara Company Limited; All Training Company Limited; 7-Catalog; Book Smile; and eXtaKudsan.

enterprises shifted toward independence, becoming the primary sponsors of political parties. The rise of political alliances transformed the clientelistic relations between Chinese enterprises and politicians into partnerships.⁵⁶

Since the 1980s, the number of Chinese enterprises entering congress has increased with every election. This trend has blurred the boundaries between politics and economics and is reinforced by leading enterprises and the continued assimilation of Thai-Chinese people. After the 1990s, a congress comprising mostly Chinese merchants was no longer a racial problem, but rather created a Guanxi platform that perfectly merged enterprise and political powers.⁵⁷ During the interview period of this study, the author found that prominent Thai enterprises and universities appointed political figures as consultants to highlight their business-government relations; this is a crucial aspect of social networking in different groups.

Doner and Ramsay asserted that during the development process of Thai enterprises, the close relations between Chinese enterprises and political leaders are of extreme importance. However, the merging of clientelism is neither the product of poor industrial competitiveness nor that of poor market performance. The researchers attributed this situation to the preservation of market structure (territories).⁵⁸ Doner and Ramsay observed that merging largely occurred in the agricultural, industrial, and commercial industries, all of which collaborated successfully with the Bureau of Foreign Trade to merge with foreign capital. Territories formed through the merging of structure weakened new emerging private departments and solidified the natural monopoly of large corporate groups.⁵⁹

Whether Guanxi networking in Chinese enterprises negatively influences only the Thai Government and economy is worthy of investigation. A number of scholars believe that Thai enterprises that value Guanxi networking emphasize that the associated relationships between enterprises and society can serve as intermediaries between the country and its market.⁶⁰ Scholars of the institutional school have examined industrial development through the lens of institutional networking; they believe that Guanxi networking resolves market failure under the same umbrella of ownership and establishes independent and regulatory connections.⁶¹ A

⁵⁶ Jhon L.S. Girling, *Thailand: Society and Politics* (Ithaca: Cornell University Press, 1981).

⁵⁷ Gary G. Hamilton and Tony Waters, "Ethnicity and Capitalist Development: The Changing Role of the Chinese in Thailand," in Daniel Chirot and Anthony Reid (eds.), *Essential Outsiders: Chinese and Jews in the Modern Transformation of Southeast Asia and Central Europe* (Seattle: University of Washington Press, 1997), pp. 258-284.

⁵⁸ Richard F. Doner and Ansil Ramsey, "Competitive Clientelism and Economic Governance: The Case of Thailand" in S. Maxfield and B.R. Schneider (eds.), *Business and the State in Developing Countries*, (Ithaca: Cornell University Press, 2000), pp. 237-276.

⁵⁹ Richard F. Doner and Ansil Ramsey, op.cit., p. 250. When a natural monopoly exists, the monopolist gains a strong advantage in terms of price. Because of the lack of surplus demand in the market or immense cost of entering the industry, no other companies are willing or able to enter this unprofitable market.

⁶⁰ Shang-Mao Chen, "Business and Politics in Thailand: Before and After Thaksin Shinawatra." **Issues and Studies**, Vol. 47(2), P. 157, 2008.

⁶¹ Jeffery S. Arpan, Mary Bary and Tran Van Tho, "The Textile Complex in the Asia-Pacific Region: The Patterns and Textures of Competition and the Shape of Things to Come," *Research in International Business and Finance*,

popular misconception of the social system of production in the era of globalization is that industrial development is synonymous with economic activity, whereas in reality, economic activity must be supplemented with social measures such as division of labor to achieve industrial development.⁶² Enterprises that pursue only self-interest may lead to a more efficient commercial system.⁶³ For example, in a study on the effects of Chinese enterprises on the Thai economy, Scott Christensen (1991) mentioned that the corn harvesting and procurement system owned by the CP Group resolved the conflict between landowners and farmers in rural Thailand in the 1980s. Although contract cultivation is far from a get-rich-quick scheme, it guarantees that farmers receive a stable income, which is beneficial to the Thai economy and in terms of social stability.⁶⁴ Leff (1979) asserted that although Thai-Chinese enterprises may seem to monopolize the local economy, the commercial system they have created makes up for Thailand's imperfect market economy.⁶⁵

In Thailand, many Thai-Chinese enterprises remain "very Chinese." The CP Group employs many high-level executives fluent in Chinese. The vacation system within the group respects Chinese customs and traditions; for instance, most Thai companies offer employees 1 day off during Chinese New Year, while the CP Group offers its employees 2 days off during this time. However, the CP Group may not offer days off for certain public holidays for religious occasions. Nonetheless, influential Chinese enterprises respect essential aspects of Thai culture such as showing respect to the Royal Family and Thai ethics. Where some companies mourned the death of Bhumibol Adulyadej for 100 days, the CP Group announced a year-long mourning period. The liquor curfew instated by the Thai Government, restricting the sales of alcohol at specific times of day, was an immense commercial loss for 7-Eleven. However, profit-seeking Thai-Chinese enterprises did not challenge these policies out of respect for Thai ethics.

Conclusion

In this study, an empirical survey was conducted to discuss the Guanxi networking behaviors of Thai-Chinese enterprises. The findings revealed that Thai-Chinese enterprises exhibit institutionalized Guanxi networking, which serves as a precursor for subsequent business activities. Once a target has been acquired, such enterprises engage in long-term, multifaceted interaction to accumulate trustworthy capital rather than seeking one-time profits.⁶⁶ These

Vol. 4, pp.101-164.

⁶² Rogers Hollingsworth and Robert Boyer (eds.), *Contemporary Capitalism: The Embeddedness of Institutions* (New York: Cambridge University Press, 1997).

⁶³ William M. Dugger, "The Transaction Cost Analysis of Oliver E. Williamson: A New Synthesis?" *Journal of Economic Issues*, Vol. 17, No. 1, 1983, pp. 95-114.

⁶⁴ Christensen Scott "The State, Political and Economic Influence: A Study of Associations in Thailand," op.cit., 1991, p. 36.

⁶⁵ Leff, 1979, op.cit.

⁶⁶ Yi-Ling Kao, "Success is Built." **Business Weekly**, Vol. 1258, February 2016, P. 12.

social capitalistic and Guanxi-cultivating behaviors form a political society based on Guanxi networking. By contrast, Taiwanese enterprises largely inherit western commercial cultures focused on goal-oriented management, efficiency, and quick returns. This management model is easily imitated and poses no competitive barriers. Therefore, Taiwanese merchants are met with many difficulties when entering ASEAN markets. Thai-Chinese companies are willing to play the long game and diversify their relationships; they attempt to establish relationships from different angles to enhance the value and profitability of these relationships.

The findings of this study revealed that Guanxi management is fueled by economic incentives. Thailand has neither a centralized institution in charge of regulating corporate competition nor strict regulations governing market investment. Guanxi networking is a key management characteristic of Thai-Chinese enterprises. Thailand is essentially a market economy and Guanxi networks constitute the merging of cultural backgrounds and economic strategies. Furthermore, the monopolization situation accompanied by Guanxi networking stems from economic efficiency. Therefore, this situation is a type of natural monopoly rather than an administrative monopoly.

Naturally, the findings of this study are not generalizable to Guanxi networking in all Southeast Asian enterprises. Business networking is not a universal solution; it creates management problems and has been linked to monopolization,⁶⁷ government-business integration, and corruption by the middle class. In addition to moral discipline, whether business networking can stand the test of changes in the sociopolitical environment and market competition in the future remains to be determined.

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附錄 1：泰國「正大集團」所屬企業

投資的國家	企業名稱	投資的產業	企業名稱
Bangladesh	Chicken Integrated Farming Visit Website	Agro-Industry & Food	N „c.. .
Sqafßczqq	Animal Feed and Livestock Farming	Marketing and Distribution	1. CP ALL PCL
Singapore	Animal Feed. Visit Website		2. Siam Makro PCL
Taiwan	Animal Feed, Chicken and Swine Meat Processing. Visit Website	Telecommunication	True Corporation PCL
Laos	Animal Feed, Livestock Farming, Crop Production(Maize for Livestock Feeding)	Seeds, Fertilizer, Plant Protection	Chia Tai
Malaysia	Animal Feed, Livestock Farming, Aquaculture. Visit Website	International Trading	1.C.P. Intertrade Company Limited and C.P. Thai Rice Company Limited
Myanmar	Livesrock Farming, Crop Production (Maize for Livestock Feeding), Marine Shrimp Farming, Trading. Visit Website		2.Ayutthaya Port & ICD Company Limited

Pakistan	Chicken Integration	Crop Integration	1.CP Seeds Company Limited
Philippines	Shrimp Feed and Marine Shrimp Farming		2.Charoen Pokphand Engineering Company Limited
Cambodia	Livestock Feed, Livestock Farming, Seed (Crop Production). Visit Website	Property Development	C.P. Land Company Limited
China	Agro-Industry and Food, Retailing, Retail, Property Development, Seeds, Automotive and Industrial Products, Finance and Banking, Pharmaceuticals, Plastics, TV media. Visit Website	Plastics	CPPC Public Company Limited
India	Animal Feed, Livestock Farming, Aquatic Feed and Aquaculture. Visit Website	Pet	Perfect Companion Group Company Limited
Indonesia	Animal Feed, Livestock Farming, Shrimp Farming, Chicken Integration, Vegetable and Corn Seeds. Visit Website	Feed Ingredients Trading	
Turkey	Chicken Integration. Visit Website	Automotive and Industrial Products (China)	1.SAIC-CP Motor Company Limited
Vietnam	Chicken Integration and Crop Production (Maize for Livestock Feeding). Visit Website		2.ECI-Metro
Belgium	Food processing	Finance and Banking (China)	1.ZhengXin Bank Company Limited
Thailand	Agro-Industry and Food, Retailing, Property Development, Retail, Property Development, Seeds, Automotive		2.Ping An Insurance Company China Limited
		Pharmaceuticals (China)	Sino-Bio Pharmaceutical

Source: CP GOBAL, [http://cpgroupglobal.com/en/aboutus.php\(2017/3/5\)](http://cpgroupglobal.com/en/aboutus.php(2017/3/5))

HOW BUSINESS NETWORKING SHAPE “INDIVIDUAL SUCCESS”; A CASE STUDY FROM MYANMAR BUSINESS PERSONS

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ABSTRACT

According to popular themes, networking has been becoming popular in business field. That can support to improve individual skill and be successful in business. The objectives of this paper are: (1) to explore individual success case of business networking and understand how to make the approach and (2) to develop strategic recommendation for successful business networking. Individuals can achieve a greater career success in upward networking. In this paper, qualitative method was used to analyze. A depth-interview was administered to Myanmar Business People who already had international networking experience.

By building business network, participants get knowledge, experience, information, business connections, international networks, business partners, and many valuable things for them. The individual outcomes of networking are an advantage in participants' career & development and increased their visibility & power. The outcomes are really useful and helpful for participants. Based on these outcomes, participants can implement their expectations and goals.

Keywords: Business Networking, Individual Success, Social Capital, Personal Information, Personality.

Introduction

Business networking is a kind of marketing method which is called effective low-cost marketing method and it is used to develop opportunities of sales and business contacts. In the article of Wolff, Moser & Graus, 2008, many books and articles are described as the work that encourage people for business networking such as Nierenberg, 2002 and Watanabe, 2006 (Wolf, Moser, & Grau, 2008). To build and maintain informal contacts, networking behaviors can be used. That behaviors can also enhance career success (Forret & Dougherty, 2004). In later years, Networking has been becoming popular in business field based on face to face meeting, networking dinner, events and talk shows, products exhibition and including social media. Business networking also brings advantages in addition

such as recommendation and personal introduction which are always very helpful in developing business opportunities. Nowadays, as the market is competitive, responsiveness to customer or supplier demand is often a decisive factor in the success of an organization. Not only in private sector but also public, one of the most critical resources is network in the success of an organization. There are many pros in business networking – valuable way to expand knowledge, learning from the others' success, attaining new clients and sharing others about own business (Baird, 2016).

Generally, business networking consists of exchange of friendship, information, benefits and influence. If we compare to the success of network's career with individual's career, abilities, knowledge, and experiences of network is greater. There is also a belief summarized by the common maxim that is "it's not what you know, it's who you know" (Torres, 2005). So, that will be a significant demand that help individuals to develop and nature their network. People are also trying to connect within a network through professional conferences about special networking events for members to interact new people (Gibson, Hardy III, & Buckley, 2014).

In the age of new government, the new investment law and special economic zones are became attractions for foreign investors. Many foreign investors come to Myanmar and learn about the Myanmar's Economic by building network with Myanmar business persons. Myanmar Entrepreneurs Network (MMEN) is one of the networking agencies and business organizations. This organization is an open platform for fellow entrepreneurs and investors to gather and share ideas on doing business in Myanmar, learn from each other on key areas (e.g HR, Financing, law) or even form partnerships! MMEN is not affiliated with any companies and is operationally non-profit generating.

Literature Review

For individual level, most of antecedents frequently researched that individual difference-based antecedent of networking behavior is personality. Forret and Dougherty (2001) considered differences of individual in relation to their perspective of networking and this should be noted. Precisely, several dimensions of personality have been found and they are related to networking behaviors including extraversion which is positive relationship, neuroticism which is known as negative relationship and openness which is also positive relationship even though neuroticism relationship has not always been imitated (Wolff & Kim, 2012).

Wolff and Kim (2012) argued that social and informational perspectives of personality will be beneficial to those attempting to network. Therefore, this intuitive finding proves that extraversion and openness experience the significant predictors. More people, neuroticism and that means that people are insecure, self-conscious, and temperamental were less

likely to engage in networking behaviors because they may be more hostile when they are interacting with other within network (Wanberg, Kanfer, & Banas, 2000). Therefore, it is clear that personality is an important role in characteristics of individual in facilitating or inhibiting progress in the stages of building and maintaining contacts.

Aspects of the job that may simplify or inhibit networking behaviors are important things to consider in focusing the individual level antecedents. There is also a thing that is strongly relating to networking and that is the work hours of individuals per week and (Forret & Dougherty, 2004) found examined that work hours showing the extent to which they maintained external contacts, engaged in professional activities and made efforts to increase their internal personality in that week. So according to that logic, individual who works more hours can engage more in networking behaviors like maintaining contacts, socializing and improving internal visibility.

Objectives

The objectives of this study are –

1. To explore individual success case of business networking and understand how to make the approach
2. To develop strategic recommendation for successful business networking

Research Framework

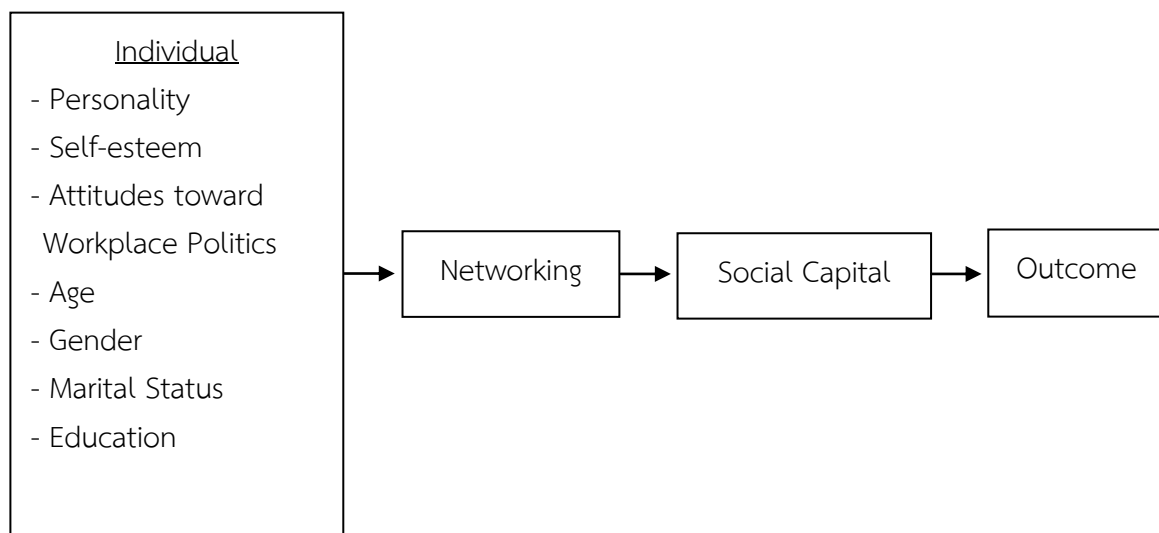


Figure 1: The Framework for the Research

Source: Gibson, Hardy III, & Buckley, 2014; Wolf, Moser, & Grau, 2008; Ejkskov et al., 2014; and Siegler, 2014.

Research Methodology

Phenomenological Method, a kind of qualitative method is implemented in this research. In a phenomenological study, often conduct a lot of interviews, usually between 5 and 25 for common themes, to build a sufficient dataset to look for emerging themes and to use other participants to validate findings. That rely on the participants' own perspectives to provide insight into their motivations. In this research, the target population of the research is around 200 Myanmar Business People from 150 companies who already had networking experiences in ASEAN networking, especially in Myanmar-Thailand networking events arranged by Device Myanmar Consulting Group and Panyapiwat Institute of Management. From the participant lists, the CEO of Device Consulting Group recommended 20 business persons from different companies as the simple size of research population. Qualitative method is applied in this research to analyze the concept, reach till seeing clear framework. To analyze deeply and obviously the personal feeling and benefit that related with networking is the purpose of using qualitative method. In using of qualitative method in research, finding and setting sample of population is the first step for analyzing. Making appointment and do one by one deep interview in suitable place and time are in second stage of process. During interview time, the views and opinions of participants are recorded in voice recorder, then, transcribe, analyzed in detail, and summarized to reach the concept in every sectors.

Results and Discussion

The individual outcomes of networking is described with the summary of the results from interviews. The followings are the most answers from participants, in number twenty.

Table: Summary of the most answers of participants

No.	Interview Questions and the Most Answers from Participants
1.	How often do you attend the networking events? 50% of participants (10 participants) attend about 1 time per month
2.	What is your personality type? Most of the participants are outgoing, willing to share knowledge, and talkative.
3.	In your opinion, why personal information and personality are important in building a network or not? Please tell me the reason for that. Based on personal information and personality, participants can be easy to contact each other, can discuss many things, can get more business chance, and can be easy to build trust. After knowing personal information and personality of business partners, friendship become strength and can share many valuable things.
4.	What is your motivation to join the networking? To discuss about business, to share knowledge & information, and to find

No.	Interview Questions and the Most Answers from Participants
	international networks are the most motivation of participants to join networking.
5.	<p>Do you satisfy for attending the networking events? What factors make you feel satisfy?</p> <p>Participants are mostly satisfied. Getting new partners and international networks, sharing knowledge, information & experience, and advertising business make participants to satisfy.</p>
6.	<p>What are the important things when doing business? Do you think networking can support for business operation and how?</p> <p>Business network, update market information, and good communication are very important in doing business. Networking can make participants to get more friends that can help to get more network. In the networking, they can share many things. Because of these, their business become grow.</p>
7.	<p>What kind of benefit did you get from networking?</p> <p>Participants got lot of knowledge & information, good business partners, and business opportunities from networking.</p>
8.	<p>How networking can effect to you and your business?</p> <p>By having a network, participants can make business better, improve their skills, and expand market.</p>
9.	<p>What are important factors to build good connection in a business network?</p> <p>When building a network, trust each other, real friendship, and good partners are important.</p>
10.	<p>What are the main advantages and disadvantages of networking between business partners?</p> <p>The main advantages of networking are participants can share knowledge & information, can meet with popular business persons, and get many business opportunities. The main disadvantages of networking are participants don't have good personality and difficult to find related business partners.</p>

The responses of questionnaires are critically related with Social Behavior and Interaction Theory. According to the theory, between two or more people, there are some actions resulting because of their culture, actions, behaviors, and expressions. The result of this research proved that participants came from different level, age, location, and business and understanding the differences is a factor which can avoid some misunderstanding among them. In networking, personal information and personality are very important for each and every one and, knowing these can help the networking and may finish successfully and effectively. Since sometime, other's action and behavior can be disappointed or look

down for another one. But when they meet positive things, their thoughts and behaviors will be changed resulting better. By taking a look at this concept, human's thoughts, behaviors, and actions can be changed because of the personal information and personality.

The motivation theory is relevant with some results of this study. Motivation is essential and important one that determines performance. Motivation is also called a desire or a force to accomplish a goal-directed behavior and also is very important in well performance. In this study, participants build network for making friendship, discussing about business, sharing knowledge & information, and finding international networks that motivate the participants to join networking. In creating successful business, networks, update market information, good communication, and honesty are really important. Based on networking, participant get friends or partners. Then, they can discuss or give advice for their business and share knowledge & information. Finally, they connect each other and make network for further business. So, the motivation can lead to achieve the successful performance.

Lastly, some results of this research is relatedly linked with the social capital theory. Social capital theory is defined as the resource of social relation to promote corporate action. Norms, trust, and society networks are included in social capital. They directly encourage to get positive effect for careers. In social capital theory, there are some relations on both side of social capital. The three related concepts for this study are: 1). the more the networking, the greater the social capital, 2). the greater the social capital, the easier to mobilize support for problem solutions, and 3). the greater the social capital, the higher the percentage of problem-solving outside the governmental sector.

During networking, participants possibly find new friends and build good connection between them and as a result after that, they can keep contacting frequently for being strength in their relationship. So, being more good connections and networks can support to be social capital greater and by contacting frequently, participants understand more and trust each other. These are the foundations for being real friendship and think win-win situation in real business field. Therefore, participants improve their skills, get international business links, and gain better business opportunities for future business. The greater social capital bring the bigger percentage of problem solving part. Moreover, it can support to corporate business and build business links. So, these above are all the ways for getting individual success from business networking.

There are some strategic recommendations for successful business networking. Firstly, in some networking events, percentage of male participants is bigger than female percentage. Mostly, female participants always give priority to their family that is a factor to block their forward ways. In book, "Silencing the Self-Across Cultures Depression and Gender in the Social World", author Jack & Ali, mentioned that women always hide their desire and interest for their family. So, network organizers and business persons who always join

networking should promote and welcome to other business persons especially female participants. By doing this, there will be develop in business field and the role of female also improve.

The second one is that without knowing personal information, participants can face some difficulties to contact each other because they don't know which person is doing what kind of business. That is a first time for participant, so need to know the information to communicate easily. Even participants exchange knowledge & information based on their experiences during networking, some participants don't want to share knowledge and any information. Furthermore, they take new ideas and update information from other participants and compete them by using their information. That is a factor need to be worried in the future networking because that can make looking down for networking in participants' mindsets. Author, Pam (2015), told that in some situations that may be threatening, people who has low self-esteem may be withdraw, as a protective mechanism. It also can lead to unproductive work behaviors. So, network organizers should prepare basic information of participants and analyze their backgrounds to comfort for participants.

Finally, business networking is needed to promote or arrange frequently. By doing so, participants will get chance to communicate many times, then their friendship and connection can be strength and trust more and more. That is a basic to support each other in every sectors. These supporting factors are really effective to their skills improvement and career success. Thus, building networking frequently is really effective to participants' visibility & power improvements and business developments.

Conclusions

In the conclusion of the result, it is very prominent that personal information and personality are directly effective on networking. If participants build network with negative person or not related person with their business, they will not get real benefit from networking. Moreover, it can happen some difficulties and misunderstanding on networking or among participants. During the networking, participants make friends, share knowledge, experience, and information, promote their products, and discuss about market resulting that they become more familiar, help each other, link international networks, and trust each other, which are really effects on networking vice visa. Furthermore, these factors support to get good outcomes for participants. These outcomes or benefits for participants are helping each other, getting new idea, improving skills, cooperating business, and expanding their markets. Greater career success is facilitated by the outcomes that resulted from networking, increased visibility and power, and that success carries opportunities for advancement, power and salary (Wolff & Moser, 2009). Therefore, participants can get individual benefits from networking. That benefits can help and support not only participants but also their business.

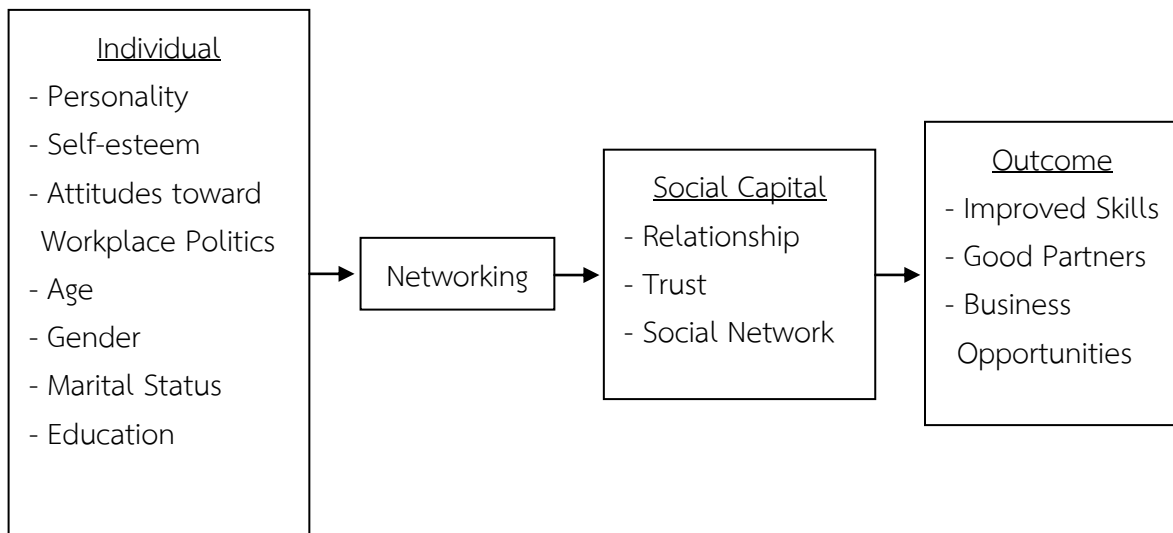


Figure 2: The Result Framework of the Research

Source: The result from this study

Recommendation for Future Research

Future researchers should study in Western or Europe or African networking for learning different culture and perspective. Researcher Bozionelos & Wang (2005) suggested that future research should point out the cultural differences in networking. In different countries have different cultures and habits. So, another researcher Wolf, Moser, & Grau (2008) gave advice to investigate in opposite side of good outcomes in networking. Another one, further research should study in specific area because people will know the average percent of interested in networking in specific areas. Moreover, future researchers should analyze how to promote the development of networking that is really important to develop a country's economic, networking is an essential part.

Limitation

The limitations of this study are as follow. The first one is that this study focused in ASEAN networking. Another one is the researcher couldn't make interview in specific areas, just over all business persons in a country. The third one is Language Barrier. While making interviews, some business persons preferred to use Myanmar language then English language. The last one is that some business persons couldn't give enough time for making interview.

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DOES CHEF'S CULINARY INNOVATION COMPETENCY MATTER FOR THE RESTAURANT PERFORMANCE?

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ABSTRACT

As the catering industry becomes more competitive, the theme of restaurants is increasingly diversified. Restaurants need to must take actions such as to strengthen their uniqueness and competitiveness to attract customers. In order to provide a unique experience for customers, the chef plays an important role in enhancing their competitiveness and developing innovative cuisine with restaurants by using their own culinary competency. In addition, chef's culinary innovation competency through learning observation is also worth further studying. The aim of the paper is to explore the impact of chef culinary innovation competency on restaurant performance. This paper firstly established the hypotheses based on the literature review. Before the pretest, six practitioners and academics were invited to examine the validity of the questionnaires. After collecting the data through purposive sampling from chefs who are the managers working in the back of the house in the restaurants, this paper utilized the descriptive analysis and partial least squares (PLS) to analyze the path effects. The empirical results revealed that mentoring functions from workplace was positively significant on culinary innovation competency, also service innovation and product innovation had positively significant on restaurant performance. The finding provide restaurant manager new insights on improving restaurant performance.

Keywords: Culinary innovation competency, Restaurant performance, Mentoring functions, Social learning

Introduction

The Taiwanese population of dining out has growing significant which showed that about 13.7 million people have lunch outside (Chen, 2016). Catering industry is so competitive that being response to the requests of consumers, the restaurant constantly develops new dishes and new products to strengthen the competitiveness of the food and

beverage market. Therefore, chefs need to understand trends and foresee the direction of future development, otherwise they could probably lose their competitiveness (Perlik, 2002). The extant study had argued that the chef's learning is the conceptual innovation of cooking through mentoring (Stalcup, 2002).

In the catering industry, apprentices learn skills through the behaviors demonstrated by mentor (Lin & Chang, 2010). The chef's performance in culinary is closely linked with the competitiveness of the catering industry, and innovation could help company have a certain competitive advantage in the industry (Wu, Wu, Chen & Wu, 2015). The innovative activities of restaurant have a positive impact on restaurant performance (Lee, Hallak, & Sardeshmukh, 2016). As restaurant administrators and chefs engaged in catering industry, they are suggested to continue to innovate and meet different customer needs (Hu, 2010), use their own advantages to develop innovative traits, including even toward cross-industry and multi-disciplinary learning (Chen, 2016).

Previous researches used importance performance analysis (IPA) to explore the performance of capabilities and career abilities, such as exploring the management skills of young farmers (Wu, 2015) and improving the learning ability of higher vocational students (Liao, Liao, Chiang, Wu, & Liao, 2016). In the competitive catering environment, it is still not enough to discuss the chefs in their positions and their innovative roles in cooking. It is extremely important for the

chefs to maintain their own competitiveness.

Therefore, this research proposed and empirically tested a theoretical model to understand whether chefs' culinary competency could respond to the prompt demand in the environment to strengthen their competitiveness, understand the different relationship types of mentoring between chefs and their apprentices. Further, to analyze the relations between culinary competency and restaurant performance.

This study explores the implications of the culinary innovation competency and restaurant performance. In the past, the literature on the role of culinary innovation was mostly based on a qualitative analysis of the innovation types of the culinary innovation function (Hu, 2010). This study attempted to bridge the gap to use the quantitative method to investigate the impact of the weight of the culinary innovation competency and the influence of the culinary innovation competency through the mentoring function on the restaurant performance.

Literature Review

1. Observation Learning and Mentoring Function

Observation learning is done by individuals personally observing and learning without directly presenting behaviors or experiencing results (Bandura, 1977; Manz & Sims, 1981), imitating learning by observing the behavior of the model. The model can be an individual or organization in a social environment. The process of group behavior learning (Shyu & Hsu, 2008; Heyes & Foster, 2002). For the application of social learning theory, chefs are likely to develop their culinary innovation through observation and learning.

Ozgen and Baron (2007) pointed out that corporate mentors provide valuable information based on their extensive experience to promote opportunity identification, and that in the catering kitchen, apprenticeship is a recognized learning method (James, 2006). The related research on mentoring also confirmed that the relationship between mentor and apprentice has an influence on the apprentice's career (Dreher & Ash, 1990). The mentoring system is beneficial to the mentorship and the learning process, as well as the career progression of the chef (Stierand, 2015). Mentorship is a way of learning in the workplace (Chen & Hsieh, 2008). The mentorship demonstrated through the master-pull relationship is one of the most effective ways to impart knowledge and skills in the workplace. Mentors in the workplace are very valuable to their apprentices and can help avoid unnecessary dangers and acquire useful skills and knowledge (Clutterbuck & Ragins, 2002).

The research of Stierand, Dorfler and Lynch (2008) proposed that culinary innovation involves the creation of new ideas for solving problems, and the concept of creating new values through teamwork and communication. The relationship between the chef and the

team and the integrated learning process is one of the innovation processes.

A study conducted by Chi and Wang (2016) found that mentor could help the junior chef on their career development, through this research result could be a way to encourage seniors on learning career skills for mentors. Abecassis- Moedas, Sguera, & Ettlie (2016) explored the relationship of modeling to innovation, and the results showed that among role models (parents, academics, and mentors), the roles of parents and mentors are positively related to the innovation of chefs. Gomez and Bouty (2009) conducted extensive research on the creative process of Michelin-starred chefs. The research outlined the chef's innovative activities, research and development techniques, leading teams and customer-related cooking innovation process, and the chef led the team.

H1-1: The mentoring function has a positive influence on the service innovation competency.

H1-2: The mentoring function has a positive influence on the product innovation competency.

H1-3: The mentoring function has a positive influence on the technology innovation competency.

H1-4: The mentoring function has a positive influence on the creativity innovation competency.

H1-5: The mentoring function has a positive influence on the management innovation competency.

H1-6: The mentoring function has a positive influence on the culture innovation competency.

H1-7: The mentoring function has a positive influence on the aesthetics innovation competency.

2. Culinary Innovation

Innovation is one of the key factors for a company's long- term success, especially in dynamic markets (Lyon & Ferrier, 2002). In these situations, companies with the ability to innovate can respond to challenges faster and use new products better than those companies which without innovation to establish a foothold in the market (Brown & Eisenhardt, 1995). Innovation in culinary is not only a personal cognitive work, but also includes feelings, opinions, emotions, aesthetics, and the social status, history, and style of the chef (Gomez & Bouty, 2009). More and more chefs try to combine or interact with novel or traditional foods by transforming new ideas into new products or services (Messeni Petruzzelli and Savino, 2014), integrate tangible and intangible elements to create a more comprehensive visual culinary experience (Vargas- Sanchez and Lopez-Guzman, 2015). Hu (2010) pointed that the core competency of innovative culinary development include service, product technology, creativity, management, culture, and aesthetics innovations.

Albors-Garrigos, Barreto, García-Segovia, Martínez- Monzó, and Hervás-Oliver (2013) explored the innovation process of chefs in fine dining restaurants in Spain. The results showed

that innovation refers to the occurrence of products, services, processes and innovations. Its main utility is to increase culinary products and improve food quality. It can also improve food preparation and kitchen efficiency and table service quality. Innovation leads to improved service, formalized cooking process efficiency, productivity, and compliance with food preparation specifications.

Crespell and Hansen (2008) examined the relationship between work environment and innovation and performance, showing that innovation has a positive impact on corporate performance. Wang (2014) shows that innovation ability is an important factor in corporate performance, and strengthens innovation through quality management. However, similar results were found in the service industry, and innovation has proven to be a key driver of performance (Abecassis-Moedas et al., 2016). Nyström (1990) innovative behavior contributes to the performance of the organization and enhances individual performance of the organization.

H2-1: The service innovation competency has a positive effect on restaurant performance.

H2-2: The product innovation competency has a positive effect on restaurant performance.

H2-3: The technology innovation competency has a positive effect on restaurant performance.

H2-4: The creativity innovation competency has a positive effect on restaurant performance.

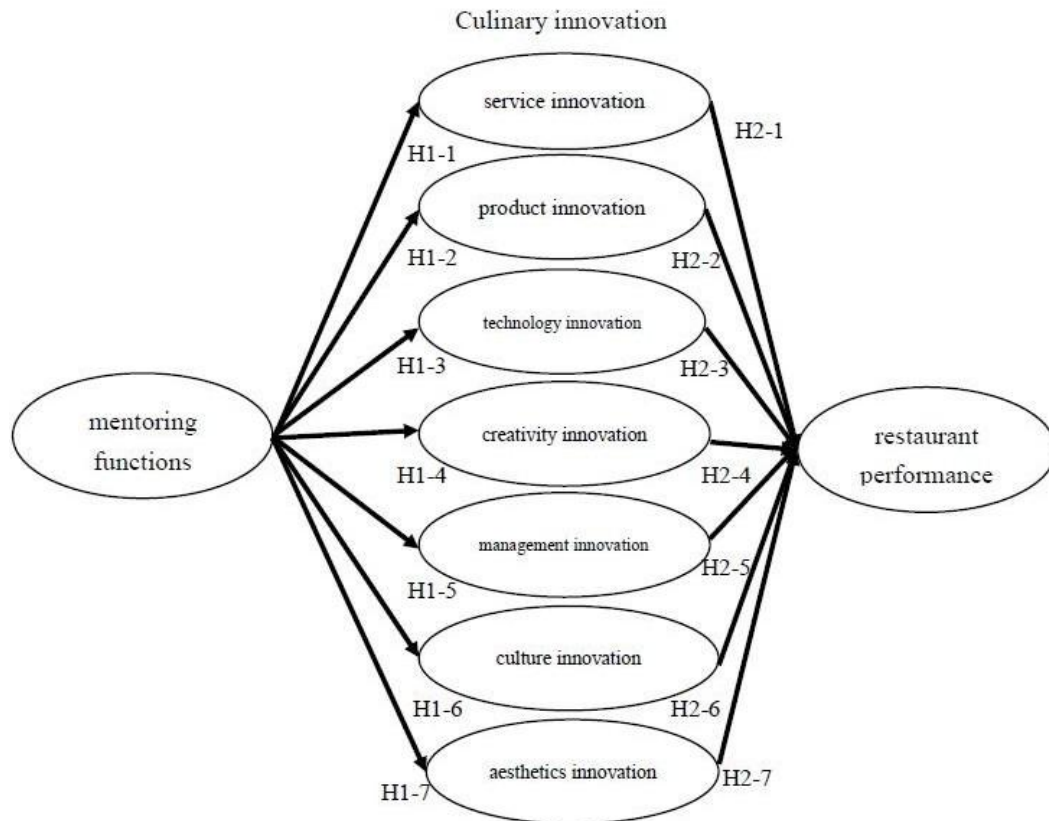
H2-5: The management innovation competency has a positive effect on restaurant performance.

H2-6: The culture innovation competency has a positive effect on restaurant performance.

H2-7: The aesthetics innovation competency has a positive effect on restaurant performance.

Methods

The data used in the empirical section of the paper were obtained from a survey conducted in Taiwan, through purposive sampling methodology. The data for this research were collected from the chefs who are currently employed in the catering industry and in the management level. In Fig. 1 below this paper presents a proposed model based on the hypotheses postulated above.



Picture 1: Final model with hypothesis

The questionnaire measurement method uses five liker- type scale to test the validity of the questionnaires through the expert validity test. Five experts were invited to examine the appropriateness and semantics of the questionnaire. Finally, there are three questions were revised. In addition, the Cronbach's α of each structure of the reliability analysis of the questionnaire was greater than 0.8. It indicated the good internal consistency of the structure.

A total of 150 surveys were issued, 80 usable surveys were collected, and the valid response rate was 53%. During doing the survey, giving feedback to the respondents, but the recovery rate is still poor. This research object of this study is that there are management chefs, chefs are busy working in the workplace, they want to rest after work, and they have a low willingness to answer questionnaires, which is considered as the reasons for the low recovery rate of the questionnaire.

This paper adopted the partial least square analysis (PLS) to investigate the interrelationships of mentoring function, culinary innovation competency, restaurant performance.

Mentoring functions were measured using Scandura and Ragins's (1993) 15-item Mentoring function Scale. This scale which describes include career development, psychological support and mentor modeling such as 'Mentor gives me special coaching on the jobs' (1 = strongly disagree, 5 = strongly agree).

The culinary innovation competency was measured using a 31-item scale based on

Hu(2010) study of core competency of innovative culinary development. The scale measured the chef's opinion to innovation such as 'Ability to handle change'. All items were measured on a five-point Likert type scale (1= strongly unsatisfied, 5 = strongly satisfied).

Restaurant performance was based on the chef's self- assessment of how his/her restaurant had performed. The scale was used Lee, Hallak, & Sardeshmukh (2016). Using a five-point Likert Scale (1 = strongly disagree, 5 = strongly agree).

Results and Discussion

The data was first analyzed using SPSS 23.0 to impute missing values and generate summary statistics for the sample, also enforced on descriptive statistical analysis such as the working years of chef. The result of gender is on Table 1 and the working year of chef is on Table 2.

Table 1: gender of sample

gender	times	%
male	56	70
female	24	30
total	80	100

The respondents consisted of 70% males and 30% females. This may be due to the fact that male chef has been the main person in the kitchen area. In social perception, as a female chef is not a traditional career (Gatta, 2016), male's cooking in the home is taken for granted.

Table 2: chef's working year

years	times	%
3-6	53	66.25
7-10	10	12.5
11-14	5	6.25
15-18	10	12.5
18	2	2.5
total	80	100

Table 2 is the respondents' working year statistics result, it showed that most people have 3-6 year work experience. This revealed on more and more chef could have promotion on senior year of chef. In the environment, the number of restaurants in the restaurant is increasing, this represent the shortage of chefs is getting more even some chef be the owner of the restaurant.

The results of the study showed on Table1 that through observing learning from mentors, mentoring function has a positive effect on service innovation, technological

innovation, cooking creativity, cultural innovation, management innovation, product innovation, aesthetic innovation, and product innovation and service innovation proposed a significant positive on restaurant performance (Abecassis-Moedas, Sguera, & Ettlie, 2016; Lee, Hallak, & Sardeshmukh, 2016).

Table 3: summary of hypotheses examining

	Standardized path coefficients	p-value
H1-1 : mentoring functions → service innovation	0.522	0.00
H1-2 : mentoring functions → product innovation	0.566	0.00
H1-3 : mentoring functions → technology innovation	0.345	0.00
H1-4 : mentoring functions → creativity innovation	0.571	0.00
H1-5 : mentoring functions → management innovation	0.571	0.00
H1-6 : mentoring functions → culture innovation	0.528	0.00
H1-7 : mentoring functions → aesthetics innovation	0.508	0.00
H2-1 : service innovation → restaurant performance	0.619	0.034
H2-2 : product innovation → restaurant performance	0.603	0.048

Second, the PLS was employed to examine the model. The results of the study showed on Table3 that through observing learning from mentors, mentoring function has a positive effect on service innovation, technological innovation, cooking creativity, cultural innovation, management innovation, product innovation, aesthetic innovation, and product innovation and service innovation proposed a significant positive on restaurant performance (Abecassis-Moedas et al., 2016; Lee, Hallak, & Sardeshmukh, 2016).

Findings suggest that chefs could improve their professional abilities according to this research and bring up to fully strength for the career requirement by learning form working environment. For the restaurant owners, they could pay more attention on developing new products and services. Future research could expand the sample size to generalize this finding to more range types of restaurants.

Managerial Implication

This article provides the theoretical and empirical effects to manager of the restaurant on the staff by mentoring to promote the competency of culinary innovation, creating novel idea through mentor function from mentor (Stierand, Dorfler, & Lynch, 2008).

Conclusions

The mentoring functions have an impact on the chef's innovation, especially with mentoring, it is very helpful for the chef to learn, and then leads to innovations in creativity, culture, management, products, and aesthetics in culinary. This study explores the relationship between the mentoring functions and culinary innovation through observation learning whether it has a further impact on restaurant performance or not. The empirical result is the same as Abecassis-Moedas et al (2015), by modeling from working environment, it is benefit for the junior chef to learn culinary innovation.

After the reliability and validity examined, the PLS analysis is used as an empirical examined result. The chef has a positive influence on the innovation of culinary from mentor's leadership. In addition, service innovation has a significant positive influence on restaurant performance and product innovation has an impact on the restaurant performance. Based on the finding, restaurant managers could prioritize improvement and adjustment of services and products when formulating strategies. Focus on service and product innovation, getting more quickly to respond consumer's demands, also make restaurant performance (Chen & Chiang, 2015). Similarly, restaurant can establish personnel training systems for service and product innovation so that make the restaurant has a higher competitive advantage.

The future research can be based on the inclusion of more restaurant-oriented performance factors for more comprehensive culinary innovations and discussion of restaurant performance, also expand the sample size because of difficulty for the willingness to fill in the questionnaire. This study took self-assessment measurement to evaluate the restaurant performance, the future research could add objective judgement include the net profit rate and the number of employees and revenue, let the research have more comprehensive.

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RESEARCH ON FUZZY GRAY CORRELATION EVALUATION OF KNOWLEDGE MANAGEMENT CAPABILITY IN KIBS ENTERPRISES FROM THE PERSPECTIVE OF PROCESS

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ABSTRACT

Based on the operation characteristics and performance dynamics of knowledge intensive business service enterprises, the paper states the knowledge management process of such enterprises in detail. Then in view of five implementation stages of the process the knowledge management capability evaluation model is constructed. The knowledge management capability of each stage is influenced by five factors: knowledge base, knowledge organizing, knowledge atmosphere, knowledge experience and knowledge learning. To refine these factors, many indicators are selected from perspectives of resources and learning. According these indicators a questionnaire is made which will be filled in by all levels of managements. Next the survey data are processed and analyzed by the fuzzy grey correlation method, degrees of fuzzy membership are calculated and correlation coefficients are obtained. Lastly a typical knowledge intensive business service enterprise is selected to carry out case study; the empirical results verify the scientificness and rationality of the evaluation model. The research can provide new ideas for the construction and promotion of knowledge management ability in knowledge intensive business service enterprises.

Keywords: Knowledge intensive business service enterprises; Knowledge management capability; Fuzzy grey correlation method

1. Introduction

With the rapid development of knowledge economy, knowledge plays an increasingly prominent role in economic growth. It has gradually replaced land, labor and capital as the most important element of production in the enterprise. As knowledge intensive business service enterprise (Hereinafter referred to as KIBS enterprise), which is devoted to the creation and dissemination of knowledge, has also gradually become the focus of attention in the current theoretical and practical circles. Compared with other types of enterprise, KIBS enterprise has the unique nature of high knowledge, high technology, high interaction and high innovation (Wei Jiang, Wang Tongan & Lu Jiang ping, 2009). This requires that it must continuously achieve and store new knowledge, absorb and apply new technologies to better provide knowledge services for customers. It can be seen that such enterprises have strong

dependence on knowledge resources, and the key to improving their competitive advantages lies in whether enterprises can create and apply new knowledge efficiently (Zieba Malgorzata, 2014). All of these appeal KIBS enterprises to carry out knowledge management effectively. The development of KIBS in China started late. In practice, although policy support and economic progress have promoted the development of KIBS enterprises in recent years, the statistics show that high knowledge intensive KIBS companies are mainly concentrated in the domestic first tier cities and most of the comparative advantages of KIBS companies are still reflected in natural and labor resources (Wei Jiang, Tao Yan & Weng Yufei, 2009). This indicates that there is still a lot of room for improvement in the overall knowledge management capacity of the industry. In theory, many domestic scholars regard KIBS as a subsidiary of other industries, and do not have sufficient understanding of their knowledge characteristics. Moreover, the research on the operation process of KIBS enterprise and the system deconstruction of its knowledge resource change law is more lacking. In the limited studies, most of them only focus on the impact factors and mechanism about innovation performance of KIBS enterprises (Yu Zhuocai & Cui Liu, 2015). It is very rare about the evaluation of knowledge management process capability as well as the mechanism about formation and promotion of knowledge management ability in such enterprises. Yet these are the source of growth for KIBS (Yan Lili & Chen Gang, 2015).

Based on this, the paper takes the domestic KIBS enterprises as research object. Firstly the knowledge management process of these enterprises is explained in detail, and some key influencing factors of knowledge management capability are concluded. On account of this, the knowledge management ability evaluation index model of KIBS enterprises is constructed. According to the index model one questionnaire is designed and is filled by many management members of the sample enterprises. Next all questionnaire data are collected and analyzed by the fuzzy grey correlation method. And then the knowledge management ability evaluation results of the sample enterprises are obtained. According to these results the paper puts forward some improving suggestions of their knowledge management ability. The conclusions of this study can be applied to build the knowledge management system of KIBS enterprises, and then provide reference for the promotion of their competitive ability.

2. Knowledge management ability of kibs enterprises

2.1 Connotation of Knowledge Management Ability in KIBS Enterprises

According to Den Hertog (2000), the KIBS enterprise refers to organization that rely mainly on professional knowledge, such as knowledge or skills related to certain areas of expertise to provide knowledge intermediary products and services. The research of KIBS in this paper focuses on the information service industry and the technology service industry, which include enterprises in computer service industry, software industry, professional

technical service industry, and technology exchange and promotion service industry. All of these enterprises have the features of knowledge-intensive, management-agile and talent-dependent (Han CJ & Thomas SR, 2017).

KIBS enterprises mainly realize their survival and sustainable development through initiating and operating knowledge service projects, and their knowledge management ability is the core source of their competitiveness. Grant studies the knowledge management capabilities of enterprises from the perspective of knowledge integration and exchange. He believes that knowledge management capabilities are a kind of dynamic absorptive capacity, that is, the ability to use a priori knowledge to obtain new information and create new knowledge (Grant RM, 1996). Gold think that knowledge management needs effective knowledge integration capabilities include two aspects: infrastructure capabilities and knowledge process capabilities (Gold AH & Malhotra, 2001). From the view of resource and knowledge point Peachey and Yang explore the connotation of knowledge management capability respectively (Peachey TA, 2007; Yang C & Chen LC, 2007). Summarizing the related research, we can find that the current concept of knowledge management mainly studies from the perspective of knowledge-based support and organizational knowledge. This paper combines the related literature to analyze some action factors of knowledge management ability, and summarizes the specific connotation about knowledge management ability of KIBS enterprises as follows.

The factors that affect the ability of knowledge management from view of resource mainly include: 1) Knowledge base. It mainly refers to the information technology and infrastructure that the enterprise has, including the construction level of database, network system and expert decision system, the rate of ownership and utilization of infrastructure, the coverage of information system and so on. 2) Knowledge organizing. It refers to organizational arrangements for the division, grouping and coordination of work tasks within a KIBS enterprise. For example, flat and flexible organization can promote knowledge transfer and feedback in a timely manner and the setup of special knowledge management institutions, the communication mechanism of open organization design between organizations are conducive to effective development of knowledge management. 3) Knowledge atmosphere. The behavior and value pursuit of employees in KIBS enterprises also have an impact on their knowledge management ability, the atmosphere of people-oriented, respecting knowledge and encouraging knowledge sharing has a positive impact on the cultivation and promotion of knowledge management ability.

The influence factors of knowledge management ability in perspective of learning view mainly include: 1) Knowledge experience. Knowledge experience emphasize employee's professional skills, knowledge preserving, application, knowledge seeking ability, information technology ability, communication ability, sensitivity and foresight to professional knowledge

and so on. 2) Knowledge learning. Knowledge learning is an effective accumulation of knowledge from inside and outside of the organization to form the network preserving of its own knowledge; learning from practice, learning from middle school, and the form of benchmarking are the ways to promote the effective improvement of the learning ability. This shows that knowledge learning is a dynamic concept, with more emphasis on the change of knowledge stock in the organization; while the knowledge organizing mentioned above is more focused on the institutional support for enhancing knowledge capability, which is a static concept.

2.2 The implementation process of knowledge management in KIBS enterprises

The emergence of knowledge management is not only the product of the development of social economy and technology, but also driven by the internal demand of the enterprise. The core competitive advantage obtaining not only depends on process of production and operation of various types of investment in tangible assets, more important is their timely knowledge creation and knowledge application, as well as the ability to infiltrate the new knowledge into products properly.

On the specific process of knowledge management activities, scholars have studied from different perspectives. From the perspective of knowledge production and application, Nonaka points out that the essence of knowledge management is the process of knowledge creation, achieving and sharing, as well as the continuous adjustment and upgrading of organizational knowledge (Nonaka, 1995). JN Lee attributes the knowledge management implementation process to the creation, achieving, integration and sharing of knowledge, the purpose of process activities is to enhance the performance of the enterprise (Lee JN, Ham J & Choi B, 2016). Yang thinks that knowledge management as a series of simultaneously developing and interacting activities, such as knowledge production, knowledge transfer, knowledge application and knowledge learning (Yang JX & He JSH, 2013). Drucker pointed out that the core purpose of knowledge management is to help organizations achieve efficient management of explicit knowledge and tacit knowledge, and enhance enterprise resilience and innovation ability with the use of organizational wisdom (Drucker PF, 1999). Existing studies show that knowledge management process identification and knowledge management ability evaluation is an important way for KIBS enterprises to effectively manage knowledge and foster competitive advantage.

Based on the above theoretical basis and according to the research needs, this paper summarizes the knowledge management process of KIBS enterprises into five stages: knowledge achieving, knowledge absorption, knowledge creation, and knowledge preserving and knowledge application. Next, in view of the key influence factors of knowledge management ability, the paper also designs the concrete index of the influencing factors of knowledge management in different stages.

2.3 Construction of knowledge management capability evaluation index based on knowledge management process

Based on the former research of knowledge management from the view of resources and learning, the paper constructs knowledge management capability evaluation index model with the integration of all five stages. The evaluation index system combines the specific features of KIBS enterprises development as well as many principles of comprehensive, scientific, hierarchical and systematic. In the model the knowledge management ability is the general index, knowledge base, knowledge organization, knowledge culture, knowledge experience and knowledge learning are the underlying level indicators which have effect on the process of knowledge achieving, knowledge absorption, knowledge creation, knowledge preserving and knowledge application. We can see the whole evaluation index system in figure 1.

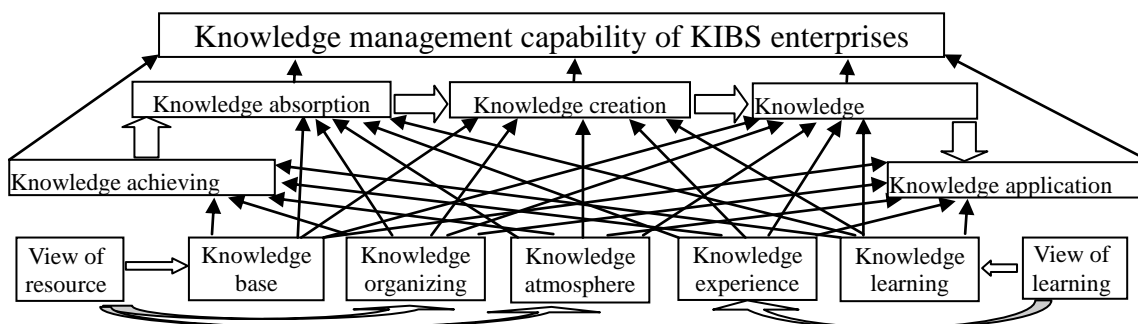


Figure 1 Implementation process of knowledge management and the influencing factors of each stage

2.3.1 Knowledge achieving stage

Knowledge achieving is the primary stage of the knowledge management process, and the source of knowledge achieving can be the internal or external resources of the enterprise. According to the effect of knowledge achieving, from the six key factors of knowledge management ability, 10 indicators are selected. ① Knowledge base factors: degree of information technology and infrastructure construction to support knowledge achieving; abundance and availability of external knowledge resources. ② Knowledge organizing factors: thirst for knowledge at top of enterprise; level of enterprise structure flattening and flexibility. ③ Knowledge atmosphere: satisfaction degree of employee needs; working environment that provides free and safe staff. ④ Knowledge experience: mastery of skills required for work; ability to use information technology and new tools. ⑤ Knowledge learning: sensitivity and initiative of knowledge achieving; ability to learn knowledge from experience.

2.3.2 Knowledge absorption stage

After acquiring relevant knowledge, we need to communicate and share it within the

enterprise, and integrate and internalize it, so that we can fully integrate into the enterprise or become an enterprise convention and solidify it, or transfer it to the product as resources. Based on the effect of enterprise knowledge absorption, 10 indexes to measure knowledge absorption are selected from the key influencing factors of knowledge management.

① Knowledge base factors: R&D input intensity of enterprise; knowledge support for communication with the outside. ② Knowledge organizing factors: horizontal communication frequency between technical departments; degree of enterprise management authorization. ③ Knowledge atmosphere: enterprise knowledge sharing atmosphere; exchange frequency between enterprise and external source of knowledge. ④ Knowledge experience: staff prior knowledge level; ability to communicate with industry experts. ⑤ Knowledge learning: participation in team work; strength of technical training activities.

2.3.3 Knowledge creation stage

The sources of knowledge creation are often closely related to the intensity of R&D input, knowledge sensitivity and work experience. Based on the efficiency of knowledge creation, from the key factors of knowledge management viewpoint, 10 indicators to measure knowledge creation are selected.

① Knowledge base factors: heterogeneity of the knowledge resources stock; accumulation depth of knowledge resources. ② Knowledge organizing factors: incentive mechanism of knowledge creation; strength of knowledge creation carrying. ③ Knowledge atmosphere: knowledge respecting with an innovative environment creation; construction of failure tolerance mechanism of innovation. ④ Knowledge experience: ability to promote new knowledge; updating frequency of enterprise and personal knowledge base. ⑤ Knowledge learning: desire of employees to acquire new knowledge; ability to excavate tacit knowledge.

2.3.4 Knowledge preserving stage

Advanced knowledge preserving can realize the efficient application of knowledge resources. The activities of this stage have strong dependence on digital technology and database information technology. According to the realization of knowledge preserving efficiency, 10 key impact indexes are selected.

① Knowledge base factors: support for knowledge retrieval and preserving of information technology input; technical support of knowledge security and knowledge protection. ② Knowledge organizing factors: institution construction of knowledge preserving and utilization; special staff for knowledge security and protection. ③ Knowledge atmosphere: awareness of the importance of knowledge preserving security; extent to which knowledge is stored with a database. ④ Knowledge experience: initiative of integration and preserving of knowledge; ability to store knowledge according to the needs of personalization. ⑤ Knowledge learning: preserving degree of work experience as valuable knowledge; ability to organize and integrate information knowledge.

2.3.5 Knowledge application stage

According to the application efficiency of enterprise knowledge resources, 10 key impact indexes are selected. ①Knowledge base factors: frequency of the transfer, diffusion and application of new technology in an enterprise; implementation of knowledge security protection mechanism. ②Knowledge organizing factors: construction of new knowledge using incentive mechanism; frequency of interdepartmental team work. ③Knowledge atmosphere: willingness and initiative of problems solving with the knowledge applying; importance of enterprise to team cooperation. ④Knowledge experience: capacity of knowledge using to work improve and problem solving; speed of the new knowledge diffusion. ⑤Knowledge learning: ability of new knowledge to be used for innovation; ability of learning from practice.

3. Principle of fuzzy gray correlation analysis evaluation

Previous literature has shown that fuzzy comprehensive evaluation and grey relational analysis are the two most applicable methods in solving fuzzy problems and uncertain problems. And the construction procedure of the knowledge management ability evaluation index model in KIBS enterprises demonstrates that the model has great fuzziness and uncertainty. Therefore, this paper combines the above two methods to analyze it. Firstly the membership functions of the key indexes are calculated by using the membership function in the fuzzy comprehensive evaluation method. Then the grey correlation analysis is carried out with the weight of the key index, and the correlation degree relative to the clear comprehensive evaluation is calculated. Lastly according to the evaluation results, the advantages and disadvantages of each stage of knowledge management are determined.

On account of the membership theory in fuzzy mathematics, fuzzy comprehensive evaluation method converts qualitative evaluation into quantitative evaluation, that is, the theory is often used to make overall evaluation of objects subject to multiple factors. Because of its clear results and strong systematic characteristics, this method is suitable for the solution of various non deterministic problems. This paper uses this method to evaluate the degree of membership of key influencing factors in the knowledge management ability evaluation index model of KIBS enterprises. The indexes of knowledge base, knowledge organization, knowledge culture, knowledge experience and knowledge learning are regarded as fuzzy variables in the index system. Then the theory of triangular fuzzy number is introduced and the experience of knowledge management experts is converted into the corresponding triangular fuzzy number as the basis for the knowledge management ability evaluation of KIBS enterprises. All members of the expert group use {very poor (A), poor (B), general (C), better (D), very good (E)}, to determine the key indicators qualitatively. Then the above fuzzy terms are quantified by the central region method. And the best non fuzzy

expression value BNP (Best Non fuzzy Performance) relative to the fuzzy number is determined, which converts the fuzzy value to the real number.

The idea of grey relational evaluation is to seek numerical relationship between the subsystems in the system through a certain method. It offers a quantitative standard for the system development change, which is very suitable to the dynamic process analysis (Zhang GL & Zhang H, 2012). Therefore, the application of grey relational analysis can effectively determine the advantages and disadvantages of the actual problems in the knowledge management process. Firstly the management staffs from all levels of enterprise evaluate the process indicators of knowledge management capability, and the fuzzy evaluation conclusion is combined with the membership degree of the process. Next the evaluation group establishes a comprehensive evaluation comparison matrix which will be compared with the index reference matrix. Then the correlation coefficient and correlation degree of the evaluation value of knowledge management and the reference datum are calculated using the relevant grey correlation method. And then order them according to the size of each association degree: the greater the relevance, the closer the evaluation process to the reference, the better the knowledge management process and the less the problem; on the other hand, the more the correlation degree is, the worse the process is, and there are many problems. Finally, according to the results of the evaluation, the improvement scheme for improving the knowledge management ability of KIBS enterprises is formulated.

4. An empirical study of fuzzy gray relational analysis

4.1 Sample selection and evaluation procedure

Taking a large software enterprise as a typical sample, it is located in Shandong Province of China. The enterprise has been founded for 12 years, the main business is for the production and sales of software products, the proportion of knowledge workers in enterprises accounted for 53%, with a stable technical team and mature management process. All of above demonstrates that the sample enterprise is a typical KIBS enterprise, and its operation process is well suited to the hypothesis of this model.

The enterprise knowledge management ability evaluation procedure is as follows: First of all, the enterprise set up an evaluation group of knowledge management capability, including members of knowledge management, enterprise technology representatives and experts in the field; secondly the evaluation team designed the questionnaire in light of the index model constructed previously: the questionnaire contained 55 questions, and the first 5 were open questions and answers to investigate the personal data of the completed person. The latter 50 questions are designed for the index system. Each index is designed with a question. Under each item, four answers are designed. Then the questionnaire is issued it to the sample managers at all levels; a total of 100 questionnaires were issued in this survey.

Among the respondents, 4 were senior managers, 26 middle managers, 29 grass-roots managers, and 32 ordinary staff (all from R&D, design and technical staff). In order to guarantee the effectiveness of the questionnaire data, the way of face-to-face and real name filling can be adopted; then, the evaluation team processed the original data of the questionnaire, 4 questionnaires with missing answers and vague answers were screened out, and the effective recovery rate of the questionnaire was 87%. Then the statistical analysis of effective questionnaire data is carried out, and the fuzzy membership degree and the related evaluation matrix of the key indicators are identified according to the evaluation criteria; finally, the level of knowledge management ability of enterprises is evaluated according to the calculation results, and the weak links are found out, and the improvement measures are put forward.

4.2 Process of Fuzzy grey relational analysis evaluation

The questionnaire survey mainly focuses on the knowledge employees in the enterprise covering nearly every management level and all departments. Each of the respondents made three evaluation values for the corresponding index in the questionnaire, which was expressed by the triangular fuzzy number E_{ij} ,

$$E_{ij}^k = (X_{ij}^k, Y_{ij}^k, Z_{ij}^k) \quad (1)$$

Among them, X_{ij}^k , Y_{ij}^k and Z_{ij}^k are the most conservative evaluation, the most probable evaluation and the most optimistic evaluation of the K th index of the hit investigator. To eliminate the evaluation subjectivity of the evaluation team as much as possible the group members are divided into n groups. Each group determines the set of fuzzy language terms and the corresponding fuzzy number of evaluation criteria independently.

The promotion of knowledge management capability in KIBS enterprises is a long-term process. The index system in this paper also focuses on future performance considerations. In the process of questionnaire interview, the investigators make detailed explanations to the interviewees on each item, especially the research on the grass-roots managers and the front-line staff, and this explanation is more detailed. The purpose of this is to ensure that they can fully understand the significance of questionnaires and indicators, and fill out questionnaires from a longer term perspective. These practices ensure that all respondents can have a consistent statement perspective.

Then each group individually processed the questionnaire data to get the triangular fuzzy values corresponding to the different evaluation criteria R_{ijt} , $t=1,2,...5$. At the same time, the evaluation team as a whole determines the opinion weights of the n teams, denoted as $w_q=[w_1, w_2, ..., w_n]$, $q=1,2,...n$. Therefore, the fuzzy number matrix of key influencing factors of knowledge management ability can be obtained as $M_i=R_{ijt} * w_q$.

As in the index system of this paper, when $n=4$, $w_q1=[0.2, 0.2, 0.3, 0.3]$ the triangular fuzzy numbers corresponding to knowledge base, knowledge organizing, knowledge

atmosphere, knowledge experience and knowledge learning are shown in the following table.(see table 1)

Table 1 Evaluation of the key factors of knowledge management ability in KIBS enterprises

InfluenceF actors	KB	KO	KA	KE	KL
A	(0,1,3, 2.6)	(0,1,4, 2.7)	(0,1,2,2.4)	(0,1, 3,2,8)	(0,1 ,5,2,8)
B	(1.7,3, 5,4,8)	(1.6,3, 4,4,6)	(1.5,3,3,4 ,6)	(1.9, 3.7,4,9)	(1.8 ,3,6,5,0)
C	(3.7,5, 6,7,8)	(3.5,5, 5,7,7)	(3.6,5,4,7 ,6)	(3.8, 5.7,7,9)	(3.9 ,5,8,7,9)
D	(6.8,8, 1,9,8)	(6.7,8, 0,9,6)	(6.7,8,3,9 ,9)	(6.8, 8.5,9,8)	(6.9 ,8,4,9,7)
E	(8.7,10 ,10)	(8.6,10 ,10)	(8.9,10,1 0)	(8.9, 10,10)	(8.8 ,10,10)

NOTES: KB: knowledge base; KO: knowledge organizing; KA: knowledge atmosphere; KE: knowledge experience; KL: knowledge learning.

The fuzzy number of each index is converted to clear number according to the transformation formula of central region method. Then the evaluation vectors for each key factor in different knowledge management stages can be obtained as $BNP_i = [BNP_{i1}, BNP_{i2}, \dots, BNP_{it}]$, ($i=1, 2, \dots, 5$).

$$BNP_{ij} = [(Z_{ij} - X_{ij}) + (Y_{ij} - X_{ij})] / 3 + X_{ij} \quad (2)$$

In equation (2), BNP_i is a clear number of factors; meaning of X_{ij} , Y_{ij} , and Z_{ij} is as the above. The results of the calculation are shown in Table 2.

Table 2 BNP corresponding to the fuzzy number of each factor

Influence Factors	KB	KO	KA	KE	KL
A	1.3	1.4	1.3	1.4	1.4
B	3.3	3.2	3.2	3.5	3.5
C	5.7	5.6	5.5	5.8	5.9
D	8.2	8.1	8.3	8.4	8.3
E	9.6	9.5	9.6	9.6	9.6

NOTES: all meanings are as table 1.

After determining a clear number of key factors, the evaluation team sorting out the questionnaire survey data. According to the formula (3), the status evaluation results of the knowledge management ability of each stage of the enterprise are calculated.

$$E_{ij} = (E_{ijt}^1 \oplus E_{ijt}^2 \oplus \dots \oplus E_{ijt}^m) / m \quad (3)$$

Among them, E_{ij} is the evaluation value of the j th impact factor in the i th phase of the

knowledge management process, $t=1,2,\dots,10$ is the t th indicator under a certain influence factor; m is the number of respondents and \oplus represents the additive operation of fuzzy numbers. In comparison with the evaluation criteria of Table 1 after the results of E_{ij} calculation, the actual evaluation of each stage of enterprise knowledge management is obtained.(see table 3)

Table 3 The knowledge management ability evaluation results of sample enterprises

InfluenceF actors	KA C	KAB	KC R	KS T	K AP
KB	E	D	D	D	C
KO	B	C	A	D	D
KA	D	E	B	D	C
KE	E	B	C	C	D
KL	D	C	D	D	C

NOTES: KAC: Knowledge achieving; KAB: Knowledge absorption; KCR: Knowledge Creation; KST: Knowledge preserving; KAP: Knowledge application; KB, KO, KA, KE, KL are the same meaning as table 1.

Based on the status evaluation results in Table 3 and combining the BNP values of Table 2, a comparison matrix is established.

$$X_c(t) = \begin{bmatrix} 9.6 & 8.2 & 8.2 & 8.2 & 5.7 \\ 3.2 & 5.6 & 1.4 & 8.1 & 8.1 \\ 8.3 & 9.6 & 3.2 & 8.3 & 5.5 \\ 9.6 & 3.5 & 5.8 & 5.8 & 8.4 \\ 8.3 & 5.9 & 8.3 & 8.3 & 5.9 \end{bmatrix}$$

In this paper, the BNP optimal value in Table 2 is used as a reference, and then we can get the reference matrix $X_b(t)$. Set the resolution factor $\rho=0.3$, according to the equation (4), the result of equation (5) can be clear.

$$\delta_i(k) = |x_c(t) - x_b(t)| \quad (4)$$

$$\delta(\max) = \max_i \max_k \delta_i(k), \delta(\min) = \min_i \min_k \delta_i(k) \quad (5)$$

The correlation coefficient has the following formula:

$$\gamma_{cb} = [\delta(\min) + \rho\delta(\max)] / [\delta_i(k) + \rho\delta(\max)], \gamma_{cb} \in (0,1), \quad (6)$$

$$k = 1,2,\dots,5; i = 1,2,\dots,5$$

As a result, the computable correlation degree matrix is:

$$\gamma(x_c, x_b) = \begin{bmatrix} 0.92 & 0.32 & 0.71 & 0.92 & 0.71 \\ 0.70 & 0.65 & 0.92 & 0.36 & 0.54 \\ 0.70 & 0.12 & 0.32 & 0.53 & 0.71 \\ 0.70 & 0.69 & 0.71 & 0.53 & 0.71 \\ 0.56 & 0.69 & 0.52 & 0.72 & 0.54 \end{bmatrix}$$

T Set up $wq2=[0.10, 0.20, 0.20, 0.25, 0.25]$, which is determined by the analytic hierarchy process(AHP) of the expert evaluation team: the evaluation team as a whole determines the opinion weights of the N teams, the second level indicators are authoritative, impartial, effectiveness and empirical. Each group member points out the N groups from these three aspects, and then sums up the weight of each group, next the Wq is got. So the actual correlation degree of each stage of knowledge management can be calculated as follows:

$$\eta_i = \sum_{q=1}^5 w_q * \gamma_i^T(x_c, x_b), i = 1, 2, \dots, 5 \quad (7)$$

The actual correlation degree of five stages of knowledge achieving, knowledge absorption, knowledge creation, knowledge preserving and knowledge application can be calculated: $\eta=[0.71, 0.61, 0.47, 0.66, 0.61]$. The results show that the maximum degree of knowledge achieving is 0.71 in the process of knowledge management in the sample enterprise, which indicates that the knowledge achieving ability of the enterprise is higher. And knowledge creation is the least associated degree, only 0.47, which indicates that knowledge creation ability is relatively lack. Therefore, the enterprise knowledge creation step in knowledge management for its weak points, weak factors and corresponding indexes affect the ability of joint link, should thus specific improvement plan is formulated, in order to enhance the knowledge management capability and hoist core competitiveness of the enterprise.

5. Conclusion

KIBS enterprise is a typical knowledge intensive enterprise. The effective acquisition, absorption, creation, preserving and application of knowledge resources have an important impact on the promotion of competitive advantages of such enterprises. How can we improve the knowledge process to ensure the continuous improvement of knowledge management capability of KIBS enterprises? This paper selects five key factors influencing knowledge management capability through all stages of the process from two aspects of resource view and learning view. On account of this, the evaluation index system of knowledge management

capability of KIBS enterprises is established. After analyzing and calculating by fuzzy grey relational decision-making, the correlation degree of knowledge management ability in each stage is obtained. According to this correlation degree, we can clearly see the weak links and advantages of KIBS enterprises in various stages of knowledge flow. Such as the selected instance, the enterprise knowledge creation stage has the least correlation coefficient, and the knowledge ability of the enterprise is the most deficient in this stage, and it needs to be the key stage of the future knowledge improvement. This research provides a new idea for the evaluation and promotion strategy of knowledge management capability of KIBS enterprises, and improves the effectiveness and applicability of knowledge management capability evaluation process to a certain extent. The research is the lack of subjective understanding of the knowledge management capability indices depend too much on the enterprise management personnel, evaluation experts to determine the weight of each layer has great subjectivity, how to improve these problems, making the evaluation more objective and accurate, the need for further research and development.

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RESEARCH ON THE MECHANISM OF ENTREPRENEURSHIP ON ENTERPRISE PERFORMANCE

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ABSTRACT

In recent years, the research on entrepreneur has become an important subject in the field of management, which has been paid more and more attention by the management circles. Scholars have paid great attention to the research of entrepreneurship, especially entrepreneurship. In this paper, through questionnaire survey, based on 502 questionnaires for data analysis, the analysis results show that entrepreneurship has a significant positive effect on business performance, innovation behavior mediation role in it. Based on this result, Suggestions are made for the management practice of the organization.

Keywords: Entrepreneurship, innovation behavior, enterprise performance

1. Research background

In recent years, the study of entrepreneurship has become an important subject, It has attracted the attention of the management circle. It shows the interest of scholars in the field of entrepreneurship. However, in China, for research and development of entrepreneurship is quite backward, compared with other countries and regions, the entrepreneurship research of China starts relatively late, has not been widely available in the field of management. There is not only theoretical deficiency, but also the important reason why the research of entrepreneurs is difficult to quantify in empirical research. Master of economics in The 20th century J.S chum peter in his representative work "The Theory of The Economic Development," (1934),made clear that entrepreneur spirit is The driving force of product innovation, as well as The key engine enterprises to promote The reform process. Then, who is considered the father of the modern enterprise management of p. Drucker in masterpiece "innovation and entrepreneurship", pointed out that labor, land, capital, entrepreneurs and entrepreneurship, is driving the main factors of firm growth, among them, the labor, land and capital belong to the traditional factors of production, the main functions of the entrepreneur is to promote enterprise innovation, Innovation and innovation are complementary to each other, which is the impetus to form the entrepreneurial economy system,. Among the five elements of production, Drucker placed particular emphasis on the importance of entrepreneurship and regarded it as the soul of

capitalism.

In the field of entrepreneurship research, relevant empirical studies did not emerge in large Numbers until the 1970s. But as a result of entrepreneurship research has its innate limitation and difficulty, especially the concept is difficult to quantify, research data is not easy to get, and many scholars believe that the independence of the entrepreneurship is not enough, so the core theory is difficult to effectively distinguish with other fields (Venkataraman and Shane, 2000). Because of this, the development of entrepreneurship research has huge potential and is worthy of continuing to dig deeper research by scholars, research of entrepreneurship in China started late, has not yet formed the very systematic theoretical system. Based on the relevant literature, this paper defines the concept of entrepreneurship, innovation behavior and enterprise performance. and then sorts through the relationships among the three, reviews the current research status, points out the deficiency of existing research, finally, draws the conclusion and puts forward the research direction for the future.

2. Research hypothesis

2.1 Entrepreneurship and enterprise performance

The research on entrepreneurship mainly stems from the entrepreneurial spirit that can stimulate the development to improve the performance of the enterprise (Covin, J. G., & Slevin, D. P., 1991). Schollhammer (1982) pointed out that the entrepreneurial spirit of enterprises is an important factor to increase the competitive advantage and financial performance, and some scholars advocated that entrepreneurship can improve the financial performance of the company (Peter & Waterman, 1982). Miller, D.(1982) and Robbins(1992) also believed that Pioneers can charge higher prices for better product quality and wider product lines, thus achieving better financial performance. Innovation and import of new products, new technology was a typical entrepreneurial activity, are usually the first to engage in the practice of leading enterprises would get a better financial performance (Lengnick - Hall, 1992) .Zahra, S.A. and Covin, J. G.(1995)showed the behavior of the first companies may charge a higher price to take this to the specific target area and the control market distribution network to achieve high market share and profitability. In addition, Slater & Narver(2000) pointed out that entrepreneurship helps enterprises develop new products or find new markets, which will help enterprises to develop competitive advantages. Similarly, Wiklund and Shepherd (2003) argued that pre-action manufacturers have the advantage of being able to gain a higher profit. And innovative products can also use the better products to gain market favor.

The spirit of entrepreneurship is the spirit of innovation, so the stronger the innovation ability, the higher the entrepreneurial spirit will be. The innovation ability of

enterprises can enable enterprises to establish core competitiveness and competitive advantages, thus making the enterprise's performance improve greatly. Innovation spirit is the essence of entrepreneurship, entrepreneurship, the higher level of play to the enterprise innovation ability is stronger, the ability to pull open the gap with competitors, so as to improve enterprise performance. Based on the above analysis, this paper puts forward the hypothesis of the relationship between entrepreneurship and enterprise performance:

Hypothesis H1: Entrepreneurship has a significant positive impact on corporate performance.

2.2 Entrepreneurship and innovation

The innovation activity of entrepreneur is the main reason of economic development. There are two factors that stimulate the innovation of entrepreneurs: the first is that innovation can bring them great profit opportunities, and innovation can bring excessive monopoly profits in the short term. The second is that the success of the innovation can highlight "excellence" of your talents to meet the thirst desire, the desire, the dedication to work, or "honor" is the inner motive power entrepreneurs actively enterprising, is a powerful spiritual support. The spirit of adventure is an important factor in entrepreneurship. Schumpeter believed that the motive of the entrepreneur was not in line with the assumption of "economic man" or the characteristics of hedonism. For schumpeter, being an entrepreneur requires three things: a vision and a potential profit. Be bold and take risks; To be organized, social resources can be mobilized to realign production elements. An enterprise that can innovate must create an organizational structure that is entrepreneurial. In order to renew innovation, the enterprise must spread the entrepreneurial spirit to the whole organization and its institutions and practices. Otherwise, the innovation and entrepreneurship spirit of the enterprise will atrophy. Innovation must be based on the change, the opportunities and the new situation on the cognition of entrepreneurs must be keenly aware of the gap between reality and theory, dare to break the routine, deep thinking, the initiative to find new opportunities, to create a new and different value and satisfaction. Entrepreneurs are good at discovering innovative opportunities and good at organizing and managing entrepreneurs to carry out in-depth analysis on the changes of internal and external environment, and actively promote innovative production and improve the innovation level of enterprises. Based on the above theoretical analysis, this paper puts forward the hypothesis of the relationship between entrepreneurship and innovation behavior:

Hypothesis H2: Entrepreneurship has a significant positive impact on innovation behavior.

2.3 Innovation behavior and enterprise performance

The positive influence of innovation behavior on enterprise performance has been

verified by many scholars. Zhang genming (2009) conducted an empirical study on the innovation behavior and performance of entrepreneurs, and verified the positive correlation between enterprise innovation behavior and enterprise performance. Hejianhong et al. (2012) found that exploratory and utilization innovation had a significant impact on innovation performance. Wang chaohui et al. (2012) found that exploration and utilization innovation can enhance innovation performance from different aspects. Using innovation can improve short-term innovation efficiency and increase current income. And exploratory innovation may enhance long-term competitiveness and increase future earnings. Since there is a close relationship between innovation performance and corporate performance, it can be converted into each other, so the impact of exploration and utilization innovation on innovation performance is positive. Jianfeng (2013) argued relationship between entrepreneurial orientation and business performance, business oriented enterprise executive competence characteristics is put forward in the innovation and enterprise performance relationship plays a mediating role completely, executives innovation behavior affects the business performance. The innovation behavior of the entrepreneur can greatly stimulate the enterprise to make changes, thus stimulating the vitality of the enterprise and enhancing the core competitiveness of the enterprise, thus improving the enterprise performance. Based on the above theoretical analysis, this paper puts forward the hypothesis of the relationship between innovation behavior and enterprise performance:

Hypothesis H3: Innovation behavior has a significant positive impact on enterprise performance.

2.4 The mediating effect of innovation behavior

Xiaoping Chen (2012) suggested that purpose is to study the roles of the mediation on the basis of the known some relationship, explore the internal mechanism of this relationship, the relationship between independent variable and dependent variable chain is more clear and perfect. Zhengbingyun et al. (2011) found that the low cost strategy has the indirect effect of gradual innovation as the intermediary, and the differentiation strategy can only influence enterprise performance through breakthrough innovation. Li hua et al. (2011) believed that strategic flexibility indirectly affects enterprise performance through dual - element innovation. Jiajianfeng (2013) found the innovation behavior of enterprise executives positively affects enterprise performance. This study thinks that entrepreneurship can affect the maximum limit arouse entrepreneur's vitality and creativity, inspire the innovation behavior, entrepreneur's innovation behavior influence enterprise management and decision-making, make the enterprise can take pre-emptive, seize market resources and advantages, so as to improve enterprise performance. Based on the above theoretical analysis, the following hypotheses are proposed:

Hypothesis H4: Innovative behavior has mediating effect on the relationship between entrepreneurship and corporate performance.

3. Research design

3.1 Selection of scale

The measures of entrepreneurship were measured by Covin, J. G. et al. (1991), using Likert5 point scoring method. There are nine measurement items. The items of the scale are: very emphasis on research and development, technological leadership and product or service innovation; In the past three years, many new products or services have been developed. Strengthen the reform of existing products or services; Companies have always been proactive, while competitors have always been the first to make competitors passive. Often the first introduction of new products or services, management skills and operational skills, etc.; It has always been a competitive stance, trying to beat competitors; Tend to choose high-risk, high-return projects; In the face of uncertainty, behavioral decisions tend to take bold and swift action to achieve corporate goals; In order to increase potential opportunities, always take a bold, positive attitude.

The enterprise performance is measured by the scale developed by liuzhiqiang, dengchuanjun, liaojianqiao and longlirong (2005). The Likert5 points scoring method is adopted to measure the scale, and there are 12 measurement items. The items of the scale are: enterprises have competitive advantages in profitability; The enterprise has the competitive advantage in the return on investment; The enterprise has a competitive advantage on roe; The enterprise has competitive advantage in product or service quality; The enterprise has competitive advantage in the operation efficiency of the enterprise in the cost of product or service. Enterprises have competitive advantages in responding to customers' needs; The enterprise has competitive advantage in customer satisfaction; The enterprise has the competitive advantage in customer loyalty; The enterprise has competitive advantage in employee knowledge and skill level; The enterprise has competitive advantage in employee satisfaction; Enterprises have a competitive advantage in employee loyalty.

The innovative behavior was measured by the scale developed by Yang fu and Zhang lihua (2012) Using Likert5 point scoring method. There are six measurement items. The items of the scale are: I always seek to apply new processes, techniques and methods; I often come up with creative ideas and ideas; I often communicate with others and sell my new ideas. In order to realize new ideas, I should try to get the resources I need. In order to realize new ideas, I should make appropriate plans and plans. Generally speaking, I am an innovative person.

The selection of control variables is based on the previous basic experience, and the

gender, age, culture degree and enterprise scale of entrepreneurs are selected as the control variables of this study.

3.2 Data collection

This study was conducted from July 2017 to May 2018 in several major provinces of Guangxi, Guangdong, Zhejiang, Sichuan, Shandong and Jiangsu. A total of 560 sets of questionnaires were distributed, 530 sets were recovered, 28 invalid questionnaires were excluded, and 502 questionnaires were finally obtained, with an effective rate of 94.7%.

4. Hypothesis testing

4.1 The impact of entrepreneurship on corporate performance

Linear regression analysis was performed using SPSS21.0. First, demographic variables were used as independent variables, and enterprise performance was built as the dependent variable to construct regression model M1. Secondly, using demographic variables as the control variables, entrepreneurship as the independent variable, enterprise performance as the dependent variable to construct the regression model M2.

Table1: The test of relationship between entrepreneurship and enterprise performance

	Dependent variable: Enterprise performance	
	M1	M2
Control variables		
Age	.001*	.049
Gender	.003	-.039*
Level of education	-.036	-.015*
Enterprise scale	.082**	.000*
Independent variables		
Entrepreneurship		.680**
R ²	.007**	.459**
ΔR^2	.007**	.451**
F	.904**	84.016**
ΔF	.904**	413.459**

From table 1, it can be seen that after controlling demographic variables, entrepreneurship significantly influences enterprise performance. Therefore, hypothesis H1 (the positive correlation between entrepreneurship and enterprise performance) is verified.

4.2 The impact of entrepreneurship on innovation behavior

Linear regression analysis was performed using SPSS21.0. First, the demographic variable is used as the independent variable, and the innovation behavior as the dependent

variable builds the regression model M1. Secondly, using the demographic variables as the control variables, entrepreneurship as the independent variable, and the innovation behavior as the dependent variable to construct the regression model M2.

Table2: The test of relationship between entrepreneurship and innovation behavior.

	Dependent variable: Innovation behavior	
	M1	M2
Control variables		
Age	.021*	.060
Gender	-.060	-.096*
Level of education	-.076*	-.058
Enterprise scale	.020*	-.048**
Independent variables		
Entrepreneurship		.567**
R ²	.010**	.324**
ΔR^2	.010**	.314**
F	1.230**	47.446**
ΔF	1.230**	230.043**

From table2, it can be seen that entrepreneurship significantly influences innovation behavior. Therefore, it can be concluded that hypothesis H2 (positive correlation between entrepreneurship and innovation behavior) is verified.

4.3 The impact of innovation behavior on enterprise performance

Linear regression analysis was performed using SPSS21.0. First, the demographic variable is used as the independent variable, and entrepreneurship as the dependent variable to construct the regression model M1; Secondly, using demographic variables as the control variables, innovative behavior as the independent variable, entrepreneurship as the dependent variable to construct regression model M2.

Table3: The test of the relationship between innovation behavior and enterprise performance

	Dependent variable: Enterprise performance	
	M1	M2
Control variables		
Age	.001*	-0.013
Gender	.003	.045*
Level of education	-.036*	-0.017
Enterprise scale	.082**	.068*

Independent variables		
Innovation behavior		.679**
R2	.007**	.489**
ΔR^2	.007**	.482**
F	.904**	94.897**
ΔF	.904**	467.472**

From table 3, it can be seen that innovation behavior significantly affects enterprise performance. Therefore, it can be concluded that hypothesis H3 (innovation behavior is positively correlated with enterprise performance) is verified.

4.4 The test of the intermediary role of innovation behavior

According to the Baron and Kenny (1986) for mediation effect point of view, if the variable X to satisfy the following three conditions, can be thought of as variables through the role of the intermediary variable M affect the variable X Y: first is the change of variable X can explain the change of variable Y; Secondly, the change of variable M can explain the change of variable Y. Finally, after controlling the influence of M on the variable Y, the variable X is variable. The influence of Y is zero or significantly reduced, which is referred to as the complete intermediary at zero, which is referred to as partial intermediary when it is significantly reduced. According to this enterprise performance as the dependent variable, the entrepreneurship as the independent variable, the entrepreneurs' gender, age, culture level, enterprise scale as control variable, the innovation behavior as intermediary variables, using SPSS21.0 linear regression analysis.

M1 is the regression of control variables for enterprise performance. M2 is the regression of enterprise performance to independent variables under the influence of control variables. M3 is to consider the regression of enterprise performance to the independent variable under the influence of control variables and intermediate variables. The results of the intermediary role of entrepreneurship and enterprise performance are shown in Table 4.

Table4: the intermediary role of innovation behavior between entrepreneurship and enterprise performance

	Dependent variable: Enterprise performance		
	M1	M2	M3
Control variables			
Age	.001*	.049*	.021
Gender	.003*	-.039	.005*
Level of education	-.036*	-.015*	.012
Enterprise scale	.082*	.000**	.022**
Independent variables			

Entrepreneurship		.680**	.417**
Intervening variable			
Innovation behavior			.465**
R2	.007**	.459**	.605**
ΔR^2	.007**	0.451**	413.459**
F	0.904**	84.016**	126.160**
ΔF	0.904**	413.459**	182.859**

From table 4 shows that after joining the intervening variable, independent variable coefficient of entrepreneurship obviously decrease (decreased from 0.680 to 0.417), and F value of the model are $P < 0.01$, a significant under the level of proof innovation behavior in entrepreneurship and business performance between the presence of mediation. It can be concluded that hypothesis H4 (the relationship between entrepreneurship and corporate performance) is verified.

5. Conclusions and recommendations

The results show that entrepreneurship has a significant positive influence on enterprise performance, and innovation behavior plays a part in intermediary role. Based on the results, this paper puts forward some Suggestions on the management practice of the organization. Entrepreneurship is a kind of intangible wealth, is the enterprise of production factors, vigorously advocate and cultivate the spirit of entrepreneurship, focusing on the entrepreneur spirit of innovation, pioneering spirit and spirit of adventure, especially the spirit of innovation, so as to achieve maximum inspire entrepreneurs' innovation behavior of the individual, entrepreneur's innovation behavior can affect the enterprise management concept and management decisions, in the fierce competition in the market a pre-emptive strike, from the management, technology leading peer enterprises, improve enterprise core competitiveness, so as to improve enterprise performance.

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RESEARCH ON THE RELATIONSHIP BETWEEN GOVERNANCE STRUCTURE AND GOVERNANCE PERFORMANCE OF CHINESE GEM LISTED COMPANIES-BASED ON THE VIEW OF BOARD GOVERNANCE

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ABSTRACT

Based on the governance of the board of directors as the research perspective, this paper adopts the longitudinal method to analyze the panel data of China's GEM listed companies from 2010 to 2015, uses the governance structure as the explanatory variable, the corporate governance performance as the explained variable, and uses the governance behavior as the intermediary variable for empirical analysis. This paper attempts to explain the conflicting results of the relationship between governance structure and governance performance in the existing literature. Therefore, it is different from the traditional structure-performance research path. This paper uses the SCP research paradigm in the field of industrial economy to empirically examine the structure-behavior-performance research path, and compares the corporate governance structure, governance behavior, and the conduction path of governance performance dimensions. Differences, analyze the similarities and differences in the conclusions of the research and the causes. The results show that governance behavior plays a partial intermediary role between governance structure and governance performance.

Keywords: Listed Companies on GEM, Governance Structure, Governance Performance, Governance Behavior, Intermediary Effect

Introduction

Although significant progress has been made in the construction of corporate governance in China, the capital market has continued to decline in recent years, investment risks have increased, shareholder returns have continued to decline, major shareholders have taken over the interests of small and medium shareholders and other stakeholders, and senior management has cashed out with irregularities. However, it has repeatedly been banned, indicating that the corporate governance system still needs improvement. As an important part of corporate governance theory, the board of directors has received extensive attention from scholars. Scholars mainly focus on the compliance of the board structure and its impact on performance, such as (Grag, 2013, Sun, Hu and Chen, 2018). However, the existing research on the governance structure and governance performance is

contradictory and fails to reasonably explain the performance of the structure. Impact. Due to the late establishment of China's Growth Enterprise Market, the existing empirical research on China's listed companies on the Growth Enterprise Market is also relatively small. Most of them still follow the path of structure-to-performance research. The conclusions drawn are often contradictory.

Larcker, Richardson and Tuna (2004) believe that the use of traditional financial indicators to explain the effect of corporate governance has certain limitations. Li, Niu, and Song (2009) believe that in order to adapt to changes in the company's external environment, it is proposed to corporate governance. The new requirements need to further improve the measurement of company performance. According to their viewpoints, the governance structure and governance performance cannot be discussed briefly. Therefore, this paper believes that this may be because scholars ignore that the formation mechanism of performance may not be the structure directly affecting the performance, or the relationship between the two cannot be described by a simple linear relationship, and may need to introduce a new research path to explain This phenomenon.

Therefore, it is different from the traditional structure-performance research approach. This article will learn from the SCP research paradigm (Structure-Conduct-Performance, structure-performance-performance, abbreviated SCP paradigm) in the field of industrial economy, and introduce behavior as an intermediary variable to China. From 2010 to 2015, GEM listed companies are sampled. From the perspective of board governance, empirical tests are conducted on the governance structure-governance behavior-governance performance research framework, focusing on the mediating effects of governance behaviors, and seeking to identify the circumstances of listed companies on China GEM. Next, we will carry out some exploratory research on corporate governance theory. It should be noted that this article does not equate the governance structure with the market structure, and the governance performance is equal to the market performance. Instead, it is considered that in the effect of corporate governance structure on governance performance, scholars draw conflicting results, which may be due to traditional The research path of structure → performance ignores the role of behavior. Therefore, it draws on the SCP paradigm and sets the research path as governance structure → governance behavior → governance performance.

Literature Review and Hypothesis

1. Governance Structure

With regard to the governance of the board of directors, scholars focus on the size of the board of directors, resulting in two schools of thought. Scholars represented by Zahra and Pearce (1989) think that in the effective supervision of management and promotion of

decision-making, the large board of directors It favors the development of the firm, and holds the opinion that scholars on behalf of Lipton and Lorsch (1992) disagreed.

According to Jiao (2011), although the research shows that the size of the company is really related to the size of the board of directors, the GEM companies do not show up. The company size is relatively small and the number of the board of directors is relatively small, with 9 more. Three of them are independent directors, and their independent directors have higher education qualifications and more part-time jobs. The combination of the two positions of the chairman and the general manager is more and more. The special committee under the board of directors is better, which can better play the role of the board of directors.

Therefore, this article supports the idea that small boards are more conducive to monitoring and improving decision-making: directors often do not criticize senior management's policies or maintain fair discussions about corporate performance. In the case of large boards, the above problems will become more prominent as the costs of individual directors failing to exercise diligence in supervising management will be lower. Even increasing the size of the board of directors increases the board's oversight capabilities, slows decision making, unjustly discusses management performance and prejudices risk exposures over earnings. In contrast, smaller boards are able to raise the level of oversight because they are more likely to familiarize their directors with each other and implement more effective discussions to achieve real consistency on key issues. Therefore, they recommend that the number of board members be within 10 and the optimal size be 8 or 9 (Lipton and Lorsch, 1992).

2. Governance Performance

In the past, scholars mainly used the financial indicators of Return on Assets (ROA), Rate of Return on Common Stockholders' Equity (ROE) and Tobin's Q factor to measure the performance of governance. Based on the perspectives of Liu, Liu, Li and He (2003), this paper introduces the main business income as a proxy for governance performance.

3. Governance Behavior

Forties and Milliken (1999) believe that because of the unobservable corporate governance behavior and process, there is a certain degree of difficulty in quantifying it. When empirical research involves the measurement of governance behavior, the shareholders' meeting and the number of meetings of the board of directors are often selected. Based on the views of Li and Xue (2011), this paper selects the number of board meetings as the proxy variable for governance behavior.

Objectives

By referring to SCP research paradigm, this paper introduces mediation variables of governance behavior in GEM governance structure to governance performance, and

construct the research experience model of Structure → Behavior → Performance.

Methods

The mediating effect is that the effect of the independent variable X on the dependent variable Y is achieved through the intermediate variable M. That is, the change of M is affected by X, and the change of Y is influenced by M. M is the mediator of X and Y. Take the case of three variables as an example:

$$Y = cX + e_1 \quad \text{Equation 1}$$

$$M = aX + e_2 \quad \text{Equation 2}$$

$$Y = c'X + bM + e_3 \quad \text{Equation 3}$$

First test equation 1. If c is not significant, then X has no effect on Y, stop the mediating effect test; if c is significant, continue to test equation 2. If a is significant, continue to verify the equation 3. If b is also significant, it means that there is an intermediary effect, and if we continue to test c', if c' is not significant, it means that it is a complete mediating effect. The effect of X on Y is entirely achieved by M. If c' is significant, it is not. Complete mediation effect; if a or b is not significant, Sobel test is needed to judge whether the mediation effect is significant.

Therefore, we first assume the relationship between the explanatory variables and the explanatory variables:

H1: Negative correlation between board size and main business income.

Then make assumptions about the relationship between explanatory variables and mediating variables:

H2: Board size is negatively related to the number of board meetings.

Finally, assumptions are made as to whether the mediating effect is established:

H3: The number of meetings of the board of directors plays an intermediary role in the proportion of the board of directors and the main business income.

1. Variable selection

Select the number of board members to inspect the size of the board of directors (Adams and Ferreira, 2008), according to Li and Xue (2011), taking the number of board meetings as the proxy variable of governance behavior, Liu et al. (2003) selected the proportion of main business revenue as the proxy variable of governance performance.

Drawing on the previous scholars' research, this paper regards the corporate characteristics and corporate governance factors, which have an important influence on governance performance and governance behavior, as control variables. Commonly used corporate characteristics include company size (Adams and Ferreira, 2008; Brick and Chidambaran, 2010; Faleye et al., 2012; Li and Xue 2011), Profitability (Adams and Ferreira,

2008; Wu, 2008; Brick and Chidambaran, 2010; Faleye et al., 2012; Jiang et al., 2011), company years (Judge and Zeithaml, 1992; Wu, 2008), among the factors of corporate governance, we choose the ownership structure (Wu, 2008; Xue et al., 2010; Jiang et al., 2011) and leadership structure (Brick and Chidambaran, 2010) as the control variables.

In view of this, this article selects the company size, company age and asset-liability ratio as the proxy variables of the company's characteristics, to control the VC's shareholders on the governance behavior and governance performance, to control whether the venture capital company holdings of dummy variables, taking into account Therefore, when examining the characteristics of a board of directors for the governance behavior and the influence of the characteristics and behavior of the board of directors on the governance performance, the paper selects all the other characteristics of the board of directors as indicators of the performance Control variables are incorporated into the model. The specific measurement and explanation of each variable index are shown in Table 1.

2. Sample and data source

The sample data come from the prospectus of listed companies and the annual report of 2016. The data used in the research are from the website of Shenzhen Stock Exchange (<http://www.szse.cn>), the designated information disclosure website of China Securities Regulatory Commission (<http://www.cninfo.com.cn>) and the Wind database, the GuotaiAn Chinese listed company governance structure database and Cathay Pacific China's listed companies financial statements database, all the continuous variables were 1% level of the bilateral tail.

Table 1: Variable selection

Explanatory variables	Abbreviation	Variable definitions
Board structure	BS	Board size, measured by the number of people
Explained variable	Abbreviation	Variable definitions
Board performance	PO	Main business revenue accounted for
Mediation variables	Abbreviation	Variable definitions
Board governance behavior	BM	The number of board meetings
Control variables	Abbreviation	Variable definitions
Company Size	LNASS ET	The logarithm of the closing balance of total assets

Assets and liabilities	LEV	Closing balance of total liabilities / Closing balance of total assets
Company age	AGE	The natural logarithm of the company's founding time
CEO concurrently	CEO_DUAL	Dummy variable, chairman and CEO concurrent use of 1 said, otherwise indicated by 0
Institutional investor ratio	INS	Institutional investors and the proportion of shares

3. Empirical test and result analysis

3.1 Empirical model

According to Hypothesis 1, a mathematical model is established:

$$PO_{t+1} = i_1 + a_1 BS_t + \sum_{j=1}^k g_j Controls_{ij}$$

Among them, PO is the proportion of main business revenue, BS for the size of the board, and then under the assumption 2 the number of meetings of the board of directors to test the effect of mediation.

3.2 Descriptive statistics

Table 2: Descriptive statistics of the size of the board compared with the year

Year	N	mean	sd	p50	min	max
2010	119	8.4958	1.4664	9	5	12
2011	236	8.3559	1.4083	9	5	12
2012	296	8.3649	1.3156	9	5	12
2013	285	8.1930	1.3640	9	5	12
2014	364	8.0742	1.3515	9	5	12
2015	438	7.8973	1.3900	8	5	11
Total	1738	8.1657	1.3855	9	5	12

From Table 2, the average size of the board of directors is 8.1657, in general, the scale is controlled in 7-8 people, the maximum is 12 people, the minimum is 5 people, the difference is bigger. Among them, the minimum is not affected by the changes in the year,

the maximum is basically not affected by the changes in the year, the size of the board of directors is relatively stable.

Table 3: Descriptive Statistics and Annual Comparison of Board Meetings

Year	N	mean	sd	p50	min	max
2010	11	7.924	2.75	7	2	14
2011	23	9.012	2.92	9	3	20
2012	29	8.804	2.61	8	4	17
2013	28	9.315	3.19	9	4	20
2014	36	9.554	3.33	9	4	22
2015	43	10.24	3.73	10	4	22
Total	173	9.376	3.28	9	2	22

From Table 3, the number of board meetings is quite different, the minimum for the year 2010, only two board meetings were held, the maximum value of 22, indicating the diversity of China's GEM enterprises.

Table 4: Descriptive Statistics of Proportion of Main Business Income Compared with Annual

Year	N	mean	sd	p50	min	max
2010	11	0.14	0.23	0.05	0.00	1
2011	23	0.12	0.21	0.03	0.00	1
2012	29	0.10	0.20	0.03	0.00	1
2013	28	0.10	0.20	0.03	0.00	1
2014	36	0.08	0.17	0.02	0.00	1
2015	43	0.07	0.16	0.01	0.00	1

15	8	69	76	84	16	
To	17	0.09	0.19	0.02	0.00	1
tal	38	96	46	70	16	

From Table 4, the main business income of listed companies in China GEM has a huge difference with a mean of 0.096, a minimum of 0.0016 and a maximum of 1..

3.3 Regression analysis

According to the test of the mediating effect, a regression analysis of the explanatory variables, the explanatory variables, and the mediating effects was carried out. From Table 5, it can be concluded that the board structure is negatively correlated with the board governance performance at $p < 0.01$, the board results are negatively correlated with board behavior at $p < 0.01$, and the board governance behavior is 5.7% between the board results and the board governance performance. The intermediary role played a part of the intermediary role, and the assumptions were all supported. The full name of each variable is shown in Table 1.

Table 5: Intermediary effect test

VARIABLES	po	bm	po
BS	-0.0082*** (-2.915)	-0.1876*** (-3.578)	-0.0078*** (-2.740)
BM	-	-	0.0025* (1.931)
INS	0.1161 (1.322)	3.2928** (2.021)	0.1078 (1.227)
LNASSET	0.0444*** (6.399)	1.4223*** (11.038)	0.0408*** (5.690)
LEV	0.0800*** (2.844)	3.8553*** (7.384)	0.0703** (2.462)
CEO_DUAL	-0.0111 (-1.457)	0.0594 (0.420)	-0.0112 (-1.477)
AGE	-0.0008 (-0.913)	-0.0261 (-1.560)	-0.0008 (-0.841)
R-squared	0.377	0.244	0.378
r2_a	0.367	0.232	0.368
F	39.76	21.23	38.48
t-statistics in parentheses *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$ Proportion of total effect that is mediated:0.057			

Results and Discussion

Although the number of GEM listed companies continues to grow, due to external

market factors in recent years, the size of the board of directors has been declining. Due to the uncertainty of internal factors and the lack of robust growth, it has seen volatility growth. From the fact that the number of board meetings as proxy variables is increasing year by year, it can be seen that governance behavior has been increasing year by year. Research performance also proves that the governance structure plays a part of the intermediary role. The structure does not directly affect performance, but influences behavior and influences performance. The hypothesis was verified. However, there are formal and informal exchanges, telephone calls, and e-mails (documents) between the principal and the agent. In addition to supervising the management through the board of directors, there may be incentives to use the pay gap to encourage management. Behavior, and the need to discuss whether the incentives for pay gaps have a positive impact on performance. Therefore, in future studies, it may be necessary to introduce intermediary variables of different natures, and to discuss the more latitudes of structure and performance that better reflect the characteristics of the companies listed on the GEM, and further explain the mechanism of action from Structure → Behavior → Performance.

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SCALE DEVELOPMENT AND VALIDITY TEST OF ENTERPRISE CULTURE POWER

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ABSTRACT

The enterprise culture power is a new concept that has emerged in recent years. Scholars have done some research on its concept and composition, but there still has not been a clear definition and measurement of it. Based on literature review, this paper defines the concept of enterprise culture power and determines the composition dimension of this concept combined with data and materials of qualitative interview from 15 interviewees. In the context of China, a multi-dimension measurement scale with reliability and validity has been developed. The research results show that the enterprise culture power shall include four dimensions: the spiritual culture power, institutional culture power, behavior culture power and creative learning power, and it includes measurement scale with 19 items. It use SPSS 22.0 analysis show that results have relatively good internally consistent reliability and validity.

Keywords: Enterprise culture power; Scale development; Reliability and validity test

1. Introduction

Since the 1990s, people have come to recognized that the environment in which enterprises are is a dynamic and complex environment of survival and development. Technologies advance rapidly; competition is conducted by fair means or foul, and crises occur frequently including those similar to the subprime crisis at the economic level and unexpected events and crises at the natural or social level. In the meantime, with the continuous development of the market economy and the deepening of marketization degree, the focus of competition among enterprises is also constantly shifting. The competition is from product to brand competition, finally to cultural competition.

As a soft power, enterprise culture power is the basic power necessary for enterprises to compete at home and abroad. Culture can educate, guide, encourage, bring people together, etc. In the three major systems of social economy, politics and culture, culture is at the highest level, playing the role of leading and guiding. Especially the main culture of the enterprise, which is of great concern for the cultivation of recognition of staff to the enterprise system, formation of common values of the enterprise and the formation of the

spirit of staff and the enterprise. However, the comparison and competition among enterprises also depend not only on economic aggregate and the rate of economic growth, but also on good humanistic environment, the degree of civilization and overall improvement of the quality of staff, which is of great importance to the all-round and sustainable development abilities of enterprises.

This research is aimed at defining the concept of enterprise culture power and developing its measurement scale by empirical research. This research first reviews the existing research on enterprise culture power, defines the concept and composition dimension of enterprise culture power based on the results of the literature review and interviews, and then generates the measurement item scale. Finally, it modifies the scale by receipt collection and analysis and tests the reliability and validity of the scale.

2. Literature Review

Since 1992, the academic circle in China has begun to propose and conduct the research on the concept of "culture power". Professor Zaidong Qin (1995) has proposed the view of "spiritual power of enterprise" in the book of *New Strategy of Modern Enterprise Management*. ChunfengJia and Wenliang Huang (1995) has put forward the concept of "culture power" for the first time in the *Workers' Daily*, and conducted an analysis and demonstration theoretically. He believes that "culture power" is a power that drives, guides, brings together and encourages in the market economy. Dongsong Xiao believes that culture power is an important part of social joint efforts, an embodiment and reflection of economic and political power, and a huge power influencing on changes of them. Culture power is mainly reflected as adhesion, understanding, normative force and traction. The basic elements that constitute culture power are cultural ideas, cultural subjects, cultural media and cultural objects. The process of the formation of culture power is a process of interconnection and interaction among the above-mentioned elements. It's the basic approach to enhance cultural construction and improve culture power by constantly optimizing the above elements and process. Zhenggang Zhou (2003) argues that culture power is a powerful driving force for promoting economic development, an important force that affects political progress, a necessary prerequisite to maintain social stability and a powerful lever to improve people's quality, which is very important in the comprehensive national strength.

Mingyue Dai and others (2007) believe that it's the latest manifestation of human wisdom by using culture power to promote economic development. Germination of knowledge economy is the culture awakening of human, and the promotion of culture power is more necessary for the development of knowledge economy. It's a strategy of

"knowledge economy led by culture" chosen by developing countries. Enterprises cannot have both the cohesion internally and core capability externally and will not succeed in the market competition if there is no culture power. Therefore, we should attach great importance to the development of culture power, which is indispensable and is the inherent requirement for the development of market economy and enterprise expansion.

Guangzhong Zhao (2003) believes that from the perspective of the meaning and features of culture, although culture is an invisible thing, it exists widely in human society and all human organizations and is reflected in the activities of human as the main body in society and organizations. At the same time, culture embodies its role of promoting human society and all human organizations through its interaction with people, and this is culture power. Hao Fan and Zhicheng Ma (1994) have pointed out that management shall be based on a specific culture. Management in China has a special culture power, that is, the affinity of family, cohesion of emotive reason, appeal of being in the secular world and the guiding force of morality. Guangbin Cao and Weilin He (2000) clearly put forward the role of guiding, cohesion, stimulation, control and transformation of enterprise culture power.

Table 1 Research Review of Enterprise Culture Power

Time	Author	Content
1987	Nawa Taro	The book of <i>Economy and Culture</i> explains the impact of culture on economic development.
1989	Allen. Kennedy	The book of <i>Western Enterprise Culture</i> explains that "each enterprise, in fact, even each organization has a kind of culture with power hidden in it".
1997	Chunfeng Jia	The book of <i>Opinions of Culture Power</i> believes that, in the development of market economy, culture power is the power of guiding, cohesion, promotion and encouragement.
2001	Weihong Liao	<i>On Enterprise Culture Power</i> points out that as an invisible hand in the market competition, enterprise culture power regulates the system of enterprise culture management, coordinates the elements of management and improves work and economic efficiency by guiding and influencing ideology and behavior of all the members.
2003	Guangzhong Zhao	The book of <i>Enterprise Culture and Learning Organization and Planning</i> points out that the main body of culture is human beings and society. It is an invisible thing but exists widely in the daily life and work of people and group organizations, which

Time	Author	Content
		needs to be shown through activities of people and group organizations. In the meantime, culture has promoted the progress of human beings, group organizations and society. This is the power produced by culture called culture power.
2004	Kotter and Heskett	The book of <i>Enterprise Culture and Business Performance</i> states the concept of "enterprise culture power" and the impact of enterprise culture on performance.
2006	Denison	<i>Enterprise Culture Investigation Model</i> believes that the enterprise culture power is comprehensive. Enterprise culture power is integrated by multiple variables that often play a role in each other. It is not only a single variable but also an aggregation of multiple variables. These multiple variables as a whole will play a role in the existence and development of an enterprise.
2009	Xiyuan Tan	According to <i>Constitution Factors and Assessment System of Enterprise Culture Power</i> , enterprise culture power is the value idea that the enterprises believe in and propose. It can occupy the heart of the stakeholders outside and can mobilize the staff's comprehensive intelligence inside. It is an ability to function to reach the enterprise target in the way of directly resorting to the heart.
2013	Hao Yang and Lianke Song.	In <i>Research on Enterprise Culture Power Mechanism - Based on the Perspective of Strategic Human Resource Management</i> , enterprise culture power means the driving force of enterprise culture on the enterprise operation activities; with enterprise culture as the background, it is the support power of enterprise sustainable development and can bring the economic and social benefits to the enterprises. This paper has built the culture power evaluation index system for Chinese enterprises; has find that the internal occupation opportunity and work procedure will have the significant influence on the enterprise culture power; has analyzed the influence of strategic human resource management on the enterprise culture power.
2015	YaoqiangXu and Jin Li.	In <i>Enterprise Culture Power</i> , enterprise culture power means the role or influence of enterprise culture competition and also

Time	Author	Content
		means the driving force for the enterprises to seek sustainable development. This paper has thoroughly explained the true implication of enterprise culture power; has built the structural model of enterprise culture power; has explained the measuring method of enterprise culture power.

We have systemically reviewed the enterprise culture power definition, composition and research progress and have comprehensively grasped them. There have been so many definitions of enterprise culture power but they have shown internal consistency. Most of the scholars have believed that the most central connotation of enterprise culture power is a function power on the enterprise development and is a driving force for enterprises to seek sustainable development. However, how to measure enterprise culture power has always been the key problem in this field and it has been especially crucial to the empirical research on the enterprise culture power. In the current study progress, quite a part of research on the enterprise culture power has rested on the building and measuring methods of structural model but has not been widely accepted and popularized. Therefore, the writer has developed and verified the scale of enterprise culture power.

3. Scale Development and Verification

3.1. Scale Development Process

Enterprise culture power put forward in this paper is a relatively new concept and no measurement scale has existed in the existing study, so developing a set of reliable and effective measurement scale has been one of the key problems to be solved in this study. We have developed the measurement scale of enterprise culture power according to the process shown in Flow Table 2.

Scale development process shown in Table 2 has been generated after we summarized the multi-dimensional scale development methodology of the famous scholars (Churchill, 1979 and Peter, 1981). Specifically, we first defined the concept and the composition dimension of enterprise culture power by combining with the literature review and the result of depth interview with the enterprise middle and high-level leaders; then, we generated the item by the existing literature and interview results and modify it by referring to the focus group interview result and experts' opinions, so as to form the initial items of scale; next, we used the random sampling method to take a few samples to conduct the preliminary investigation on the data, and utilized the internal consistency reliability analysis and confirmatory factor analysis to purify the initial items and finally

formed the formal investigation questionnaire; then, we used the random sampling method to take a lot of samples for formal investigation, and examined the reliability and validity of items in the scales based on the investigation data; in necessary, we still needed to further modify the scale; finally, we generated the measurement scale of higher reliability and validity. Next, this paper will introduce the specific operation of each step according to the scale development process shown in Table 2.

Table 2 Processes and Methods for Scale Development of Enterprise Culture Power

Research processes	Research methods and tools	Research methods
1. Define the concept of enterprise culture power	Literature research Depth interview Nvivo 11	Definition of concept field Conceptual definition of concept Composition of inductive concept (dimension)
2. Generate the initial measuring item	Literature collection Depth interview Focus group Experts' opinions	Development item collection Decide scale format Decide option category Form a pilot test questionnaire
3. Preliminary research of data	Random sampling method	Decide sampling method Decide the number of samples Sample
4. Purify the measurement item	ALPHA coefficient Confirmatory factor analysis SPSS 22	Reliability and item analysis Delete the bad item and inductive dimension Ensure dimension validity
5. Formal research of data	Random sampling method	Collect data again according to Step 3
6. Reliability reevaluation	ALPHA coefficient Factor analysis SPSS 22	For the new sample data collected in Step 5, conduct the verification of reliability again
7. Scale generation		

3.2. Item Generation

Interviewees: the research interviewees are 15 middle-level and senior leaders from different enterprises of industries. Among them, there are 10 men and 5 women, aged 30--49; there are 7 middle-level managers and 8 senior managers; among whom, there are

10 undergraduates, 4 masters and 1 doctor; and they come from state-owned enterprises and private enterprises, distributing in industries such as manufacturing, service and education. The interviewees are selected according to the principles of theoretical sampling, and we select the research objects who can provide more information for the research questions under the guidance of research purpose and design (Patton, 1990). Try to select staff of different types of enterprises to conduct the interviews to obtain a rich information. The process of theoretical sampling goes on following the interview until the theory is saturated. According to the recommendations of Lincoln and Guba (1985), the number of interviews of samples should be more than 12 and this research meets the requirements of samples.

Data collection: according to research results of enterprise culture power studied by predecessors, we have designed an outline of semi-structured interview form. Formal interviews take contents of the interview outline as the core, supplement and adjust the sequence according to the responses and answers. The interview for each interviewee is 30 to 40min and 525min in total. The interview introduces its purpose and confidentiality. To avoid any doubt from the interviewees, it is recorded upon the agreement of them. The recording material is transformed into written material sentence by sentence truthfully with 29,256 Chinese characters in total.

Data encoding: semi-structured interview is adopted in this research by original data collection and isotropy analysis software NVIVO 11.0 is adopted for analyzing the interview results, editing of the text, coding, extracting and memo preparation based on grounded theory. According to the relevance importance and repletion rate, 172 initial concepts have been compared and generalized to a more abstract category describing their nature, and 19 subcategories are concluded in total, including: enterprise spirit, enterprise value, enterprise ethics, enterprise social responsibility, enterprise cohesive force, enterprise salary system, enterprise incentive mechanism, enterprise management standard and operation procedures, enterprise information management and communication, enterprise democracy, enterprise operation practical experience, enterprise law abidance operation, enterprise activities, staff knowledge and skills, staff behavioral norms, creative thinking, innovation ability, relearning awareness and learning ability. with further concluding and classification, they are divided into 4 core categories, namely: spiritual culture power, institutional culture power, behavior culture power and creative learning power.

The measuring tool for concept development should give the concept an operationalization definition and in Babbie (1998)'s opinion, the final result of operationalization definition should be a group of specific indexes (measurement items) recognized by people and being able to indicate the concept to be researched. Therefore,

in the development of the measurement scale of enterprise culture power, it must firstly give the definition of corporate culture power and generalize its composition dimension according to the interview results. Based on the theory analysis in the proceeding part of text and the qualitative interview of the entrepreneurs, this research has given the definition of enterprise culture power, it is a driving and action force based on corporate culture, and also the support for the sustainable development of a corporation based on the enterprise culture, bringing multiple benefits (such as economic and social benefits) for the enterprise. It consists of 4 composition dimensions: spiritual culture power, institutional culture power, behavior culture power and creative learning power.

Preparation of initial questionnaires: first, prepare the items of enterprise culture power according to the subcategories gained based on grounded theory analysis method, invite 5 colleagues with doctor's degree and doctoral candidates to discuss about and give suggestions on the literal expression of each item, and finalize the 19 measurement items to form the initial questionnaire. See Table 3. Likert 7 grade scale is adopted in the research, with each question in the questionnaire divided into 7 grades; strongly disagree, disagree, slightly disagree, neutral, slightly agree, agree and totally agree, and each grade is given with corresponding score 1 to 7. The respondents express their opinion according to the description of each question and mark corresponding score.

Table 3 Questionnaire items

Code	Measurement items	Strongly	Disagree	Slightly	Neutral	Slightly	Agree	Totally agree
SC1	We have inherent entrepreneurship and can enhance the leadership and management ability of entrepreneurs.	1	2	3	4	5	6	7
SC2	We have clear and consistent value conception system, leading the development of corporate business.	1	2	3	4	5	6	7
SC3	We attach great importance to enterprise ethics, pay taxes according to law, protect environment and cooperate honestly, etc.	1	2	3	4	5	6	7
SC4	We have the sense of social responsibility, do charity and set up study subsidies, etc. to give back to society.	1	2	3	4	5	6	7

Code	Measurement items	Strongly	Disagree	Slightly	Neutral	Slightly	Agree	Totally agree
SC5	The cohesive force of our company is from enterprise team development, cooperation and coordination of each department, with all the staff of one heart and one mind work hard together.	1	2	3	4	5	6	7
IC1	We have established a set of thorough salary system based on the department, post and performance requirements.	1	2	3	4	5	6	7
IC2	We have set up various awards and promotion opportunities to motivate staff.	1	2	3	4	5	6	7
IC3	We have the complete enterprise management system and regulations as well as the systematized operation procedure.	1	2	3	4	5	6	7
IC4	We have realized informatization management through internet office platform and barrier-free communication by the chat tools.	1	2	3	4	5	6	7
IC5	We have realized democracy by establishing the congress of workers and staff, enterprise union and the implementation of democratic election.	1	2	3	4	5	6	7
BC1	The leadership is experienced in business operation with rich knowledge.	1	2	3	4	5	6	7
BC2	We have been abiding by the law, dedicating ourselves to work faithfully and efficiently, with all the business carried out in accordance with national regulations.	1	2	3	4	5	6	7
BC3	We have a variety of activities, such as fellowship activities, theme activities and athletic contest, etc.	1	2	3	4	5	6	7

Code	Measurement items	Strongly	Disagree	Slightly	Neutral	Slightly	Agree	Totally agree
BC4	All of our staff master the knowledge and skills regarding their own positions based on the job requirements.	1	2	3	4	5	6	7
BC5	We implement staff manual and perform induction training on new staff to regularize staff behaviors.	1	2	3	4	5	6	7
CL1	The leadership possesses creating thinking and encourages and supports staff to innovate.	1	2	3	4	5	6	7
CL2	We have made innovations on sales, management and service, etc.	1	2	3	4	5	6	7
CL3	The leadership is with the consciousness of relearning, and encourages staff to learn and provides learning opportunities and platform for staff.	1	2	3	4	5	6	7
CL4	We master new knowledge and introduce the new management mode by learning.	1	2	3	4	5	6	7

The main purpose of preliminary research is to collect data and perform validity and reliability evaluation for initial scale based on data analysis, and then modify and perfect the questionnaire based on the analysis on validity and reliability. The preliminary research samples of this research are filled out by the middle and senior in-service leaders with the work experience of more than 3 years, and the questionnaires are distributed, filled out and retrieved online and in the field. 150 questionnaires have been given out for preliminary research and 128 are retrieved and valid, with the effective recovery up to 85.33%.

The data of the 128 questionnaire are processed in the following methods: to purify the measurement items by single-total Corrected Item Total Correlation (CITC); to evaluate internal consistency reliability of multi-dimension scale by Cronbach α coefficient; to verify the applicableness and facticity of construct validity by confirmatory factor analysis.

Churchill (1979) indicated that the purification of the measurement items should be performed prior to exploratory factor analysis, that is eliminating "Useless Items". The standard for the purification of items is that the items shall be deleted if the CITC coefficient is lower than 0.50, unless otherwise specified. Cronbach α coefficient must be calculated

before and after the purification to evaluate whether the consistency has been enhanced after the purification of a certain item. Exploratory factor analysis can be performed on all the items in scale only after purification is done to evaluate the validity of the division of concept dimension. The items with lower load on corresponding factor or those with cross load should be deleted in principle to further purify the measurement items.

3.2.1. Analysis of Internal Consistency Reliability

First, we figure out Cronbach α coefficient of each dimension and CITC coefficient of each item by SPSS22.0. See Table 2-5 for the results.

Table 4 The measured CITC and reliability analysis of each dimension

Dimension	Item	CITC value	The α value after the items is deleted	Cronbach α coefficient
Spiritual culture power	SC1	0.736	0.933	0.799
	SC2	0.683	0.934	
	SC3	0.562	0.936	
	SC4	0.568	0.937	
	SC5	0.683	0.934	
Institutional culture power	IC1	0.573	0.936	0.697
	IC2	0.539	0.937	
	IC3	0.624	0.935	
	IC4	0.557	0.936	
	IC5	0.585	0.937	
Behavior culture power	BC1	0.719	0.933	0.793
	BC2	0.691	0.934	
	BC3	0.602	0.936	
	BC4	0.644	0.935	
	BC5	0.629	0.935	
Creative learning power	CL1	0.721	0.933	0.844
	CL2	0.701	0.934	
	CL3	0.748	0.933	
	CL4	0.750	0.933	

As is shown in the table, the α coefficient of the measurement items of enterprise culture power's four dimensions is obviously greater than 0.60, which indicates that the measurement scale of the four dimensions are quite reliable. Moreover, the internal consistency reliability of total entries of the measurement scale is 0.938 and the CITC coefficients of all the items are greater than 0.50, both of which have reached the minimum

standard of the research.

3.2.2. Exploratory Factor Analysis

We have performed the exploratory factor analysis on all the 19 items. The result shows that the KMO value of the items is 0.928, passing Bartlett's sphericity test ($P < 0.000$), which indicates that the data is well suited for factor analysis. We apply principal component analysis to intercept data with the particular value 1 as the standard, and adopt the Varimax so that we could get the analysis result as shown in Table 5.

Table 5 Results of Exploratory Factor Analysis

Dimension	Item	Factor			
		1	2	3	4
SC	SC1				0.852
	SC2				0.860
	SC3				0.759
	SC4				0.836
	SC5				0.858
IC	IC1			0.864	
	IC2			0.877	
	IC3			0.896	
	IC4			0.850	
	IC5			0.837	
BC	BC1		0.854		
	BC2		0.766		
	BC3		0.822		
	BC4		0.896		
	BC5		0.844		
CL	CL1	0.916			
	CL2	0.897			
	CL3	0.813			
	CL4	0.767			

According to the analysis result, the characteristic root value of 4 factors in total is more than 1, and the accumulative variance interpretation ratio of such five factors reach 73.25%. From the factor loading situation, such 4 factors are completely consistent with the four dimensions of enterprise culture power assumed by us in advance. In addition, all the

19 items were loaded on their corresponding factors, and all the factor loading coefficients are above 0.70 without cross loading. It preliminarily illustrates the reasonability of this research in dividing the concept dimensions of enterprise culture power and that the items should not be further purified.

3.2.3. Confirmatory Factor Analysis

Confirmatory factor analysis is to confirm and assess whether the measurement model derived from such theoretical opinion is proper and reasonable by virtue of the mathematical routine based on the specific theoretical opinion and concept framework (HaozhengQiu, 2005). Minglong Wu and others (2012) has pointed out that confirmatory factory analysis would generally allow the researchers to confirm a correct factor model in advance according to a religious theory or based on solid evidence, and such model would generally classify the variable in that factor level clearly and decide that the factor concepts are relevant at the same time. Therefore, this paper has adopted AMOS 20.0 to conduct confirmatory factor analysis on data so as to inspect reasonability of four dimensions of enterprise culture power and judge the goodness-of-fit.

Confirmatory factor analysis has a lot of inspection standards. According to (Hu & Bentler, 1999), general application has (1) χ^2 goodness-of-fit test: χ^2 is the goodness-of-fit index which is most frequently reported, and it can illustrate the probability of model correctness while it is used together with freedom degree; χ^2/df is the statistics directly inspecting the similarity of the sample covariance matrix and estimation variance matrix, and its theoretical expected value is 1. If χ^2/df is closer to 1, it means better model fit. In the actual research, the model fit will be thought to be better when χ^2/df is close to 2, and when the sample is larger, it can also be acceptable when χ^2/df is around 5. (2) Comparative fit index (CFI): this index is got when comparing the presumptive model and independent model, its value is between 0 and 1; it means worse fit when it is closer to 0, and it means better fit when it is closer to 1. It is generally acknowledged that model fit is better when $CFI \geq 0.9$. (3) Tucker-Lewis index (TLI): this index is a kind of comparative fit indexes and its value is between 0 and 1; it means worse fit when it is closer to 0, and it means better fit when it is closer to 1. If $TLI > 0.9$, then model fit will be thought to be better. (4) Standardized Root Mean Square Residual (SRMR): SRMR value range is between 0 and 1; it means the ideal model fit when the value is less than 0.08. (5) Root-mean-square error of approximation (RMSEA): RMSEA is an index to evaluate model unfit; if it is closer to 0, it will mean better fit, and on the contrary, it will mean worse fit if it is farther from 0. It is generally acknowledge that if $RMSEA = 0$, it will mean the complete model fit; if $RMSEA < 0.05$, it will mean that the model will close to fit; if $0.05 \leq RMSEA \leq 0.08$, it will mean the

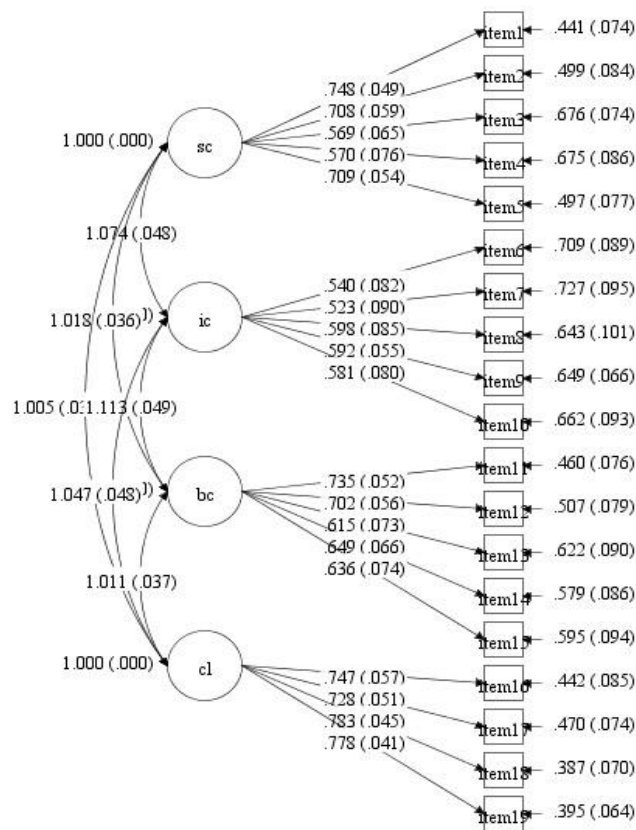
reasonable model fit; if $0.08 < \text{RMSEA} < 0.10$, it will mean the general model fit; if $\text{RMSEA} \geq 0.10$, it will mean the worse model fit. As shown in Table 4-5 Confirmatory Factor Analysis Results ($\chi^2/\text{df}=1.43$, $\text{CFI}=0.935$, $\text{TFI}=0.923$, $\text{SRMR}=0.055$, $\text{RMSEA}=0.058$), the indexes have met the requirements, which has illustrated the better model fit.

Table 6 Construct Validity Analysis Result (confirmatory factor analysis)

JietaiHou (2006) has pointed out that generally speaking, the standardized loading is

CFI	TFI	χ^2	Df	SRMR	RMSEA	90%CI
Comparative fit index	Tucker Lewis index			Standardi	Root-mean-s	90% confidence interval
				zed Root	quare error	
				Mean	of	
				Square Residual	approximati on	
0.935	0.923	208.921	146	0.055	0.058	0.039-0.075
>0.9	>0.9			<0.08	<0.08	

expected to be 0.6 or above; if it is less than 0.5, the corresponding index should be considered to be deleted. The standardized path of confirmatory analysis is as shown in Figure 2.1, and the standardized factor loading capacity of 19 items should be above 0.5.



Notes: sc=Spiritual culture power; ic= Institutional culture power; bc=Behavior culture power; cl=Creative learning power.

Figure 1. Structural Equation Model Figure

4. Conclusion and Enlightenment

This research has defined the concept of enterprise culture power based on reviewing the related studies of enterprise culture power, confirmed that enterprise culture power should include four dimensions of spiritual culture power, institutional culture power, behavior culture power and creative learning power after combining the result of qualitative interview the enterprise on middle-level and senior leaders and developed the measurement scale of four dimensions of enterprise culture in the Chinese context. The analysis result has indicated that the enterprise culture power scale including 19 items has the better internal consistency reliability and validity.

The research result in this paper has important enlightenment significance for the future study. Theoretically, the contributions of this paper have deepened the understanding and comprehension of the enterprise culture power and identified the four dimensions of enterprise culture power from the perspectives of theory and solid evidence

based on analyzing the essence and connotation of enterprise culture power. This paper has provided a set of reliable and valid scale passing the empirical test and to be verified to lay a solid foundation for the relevant researches on the enterprise culture power in terms of theory and empirical test. Practically, it is especially important for how the enterprises effectively measure the enterprise culture power. The enterprises can confirm the role of their own enterprise culture power by applying the valid scale provided by this research, and it can be used as a kind of effective diagnostic tool for enterprise.

This paper has got an insightful conclusion of research on enterprise culture power, but there are still defects. For example, the data in the paper come from a part of provinces or cities, and data collection can be increased in the future research. For the future research, it is suggested that the measuring methods such as site observation and test should be combined to further change the quality of scale.

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SMEs INTERNATIONAL NETWORK DEVELOPMENT PROCESS: AN EFFECTUATION PERSPECTIVE

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ABSTRACT

Scarce resources and little international experience force SME entrepreneurs to rely heavily on partnerships and networks. The effectuation perspective suggests that those SME decision makers engaged in internationalizing work closely with partners who are committed to creating new ventures and sharing risks (Sarasvathy and Dew, 2005; Galkina and Chetty, 2015). Based on semi-structured interviews this study explores how Swiss and Thai SMEs engage in international partnerships. The interviews followed a predefined guideline, but also allowed the interview partners to talk openly about the firm's decision to internationalize, their internationalization mode and their emerging relationships with international business partners. The interviews with the management of 20 SMEs in Bangkok, Thailand were conducted between January 2015 and June 2015. In Switzerland, a further 20 SMEs were interviewed between November 2015 and April 2016. This study considers how SMEs from different cultural contexts develop networks of international partners. It explores the practices and routines followed by SMEs to develop trustworthy partnerships.

Keywords: SME internationalization, effectuation, networks, decision making

Introduction

In the past two decades, the international entrepreneurial activities of SMEs have received increasing attention from practitioners and scholars. Successful SMEs increasingly engage in multiple, meaningful business relationships with foreign partners through export, import, foreign direct investment, subcontracting and technical cooperation. Research in international entrepreneurship has shown that these SMEs differ from multinationals in the way they engage in international business endeavors. Current research highlights the importance of networking, resource scarcity, and serendipity in international entrepreneurial processes (Jones, Coviello and Tang, 2011).

Considerable research has, therefore, explored entrepreneurial decision making in the face of uncertainty (Shepherd, Williams and Patzelt 2015; Sarasvathy, 2001). Sarasvathy (2001, 2008) distinguishes between two different decision modes to describe entrepreneurial decision processes. Causation is directed by clear goals and is primarily concerned with

identifying the appropriate means to reach these goals. It reflects a rational, ex ante planned approach. Effectuation, on the other hand, reflects a more emergent strategy which works from a given set of means and resources towards a possible outcome. The effectuation perspective particularly highlights the importance of partnerships in entrepreneurial decision making and suggests that new markets are primarily created through alliances and other cooperative strategies (Sarasvathy, 2001: 251).

Whereas research in the field of international entrepreneurship has been built on multiple theoretical perspectives (e.g. resource-based views or social network theory), the aim of this paper is to describe and compare international network formation in different countries. In particular, we explore the international network formation of Thai and Swiss SMEs and explore similarities as well as differences in creating and fostering their social networks. Subsequently, we investigate the way initial partnerships emerge and then explore the various approaches which serve to strengthen these emerging relationships in a collectivistic (Thai) vs. an individualistic (Swiss) society.

Literature Review

Effectuation perspective on international entrepreneurship

The field of international entrepreneurship research has primarily been concerned with new international ventures and has only recently moved to explore the international entrepreneurial process (Jones, Coviello & Tang, 2011; Schweizer, 2012; Schweizer, Vahlne, and Johanson, 2010). The process of choosing a course of action in the context of internationalization is particularly complex and risky for SMEs because of their limited resources as well as limited international market knowledge, network and experience (Knapp and Kronenberg, 2013; Kalinic and Forza 2012). Sarasvathy (2001) argues that decision making in uncertain and unpredictable situations follows different patterns and suggests effectuation as an alternative to causal approaches of decision making. Sarasvathy (2001) states that effectuation processes “take a set of means as given and focus on selection between possible effects that can be created with that set of means” (p. 245).

An emerging stream of research has suggested that an effectuation perspective on international entrepreneurship may provide a more detailed understanding of entrepreneurial decision making within the context of internationalization that is by its very nature characterized by high uncertainty (Andersson, 2011; Chandra, Styles, and Wilkinson, 2009; Evers and O’Gorman, 2011; Harms and Schiele, 2012; Schweizer, Vahlne and Johanson, 2010).

Applied to the internationalization of SMEs, this means that SMEs or those who internationalize in SMEs presume that their own possibilities and situations are given and that by, for example, involving their own networks they can create the best opportunities

and approaches for internationalizing their own SMEs within the context of social dialogue. Instead of conducting extensive research to preselect markets, effectual SME decision makers work jointly and closely with all interested stakeholders (Galkina and Chetty 2015: 652) who are committed to creating a new venture and to sharing risks (Saravathy and Dew 2005: 542). Hence, forming and developing partnerships lies at the heart of an effectual approach to international entrepreneurship.

Importance of forming social partnerships internationally

Child and Hsieh (2014) analyze the connection between modes of decision making and the type of connection that the decision maker has with network partners. They argue that a reactive, from effectuation influenced, mode of decision making (Reactivity Mode) is often part of the first step in the international expansion of family-owned firms. Reactivity implies that internationalization is not a result of deliberate planning or extensive rational analysis but often a matter of contextual business relations (Glückler, 2006). A reactive approach can, however, be successful as the decision maker is open minded and ready to be surprised (Child and Hsieh, 2014: 601). The effectuation logic emphasizes co-creation opportunities – and can therefore also be described as a social construction – with committed network partners, whereas Child and Hsieh (2014) focus on differences in the pattern of network attachment by SMEs in their internationalization processes.

SMEs which adopt a reactive mode of decision making on internationalization are likely to have relatively few network ties relevant to entering international business. SME entrepreneurs trust the information collected from close personal sources more than impersonal sources (Child and Hsieh, 2014; Simon and Houghton, 2002; Udomkit and Schreier, 2017). Furthermore, judgements to follow the network partners' input as to whether to react positively to the stimulus are made largely on the basis of intuition, including feelings about the reliability and trustworthiness of the trading partner or agent [e.g. network partner. Consequently, Child and Hsieh (2014) recommended that SME decision makers diagnose their competencies and be aware of how far they can rely on their knowledge, their resources to exploit opportunities, and – last but not least – the quality of their network ties.

Network quality, trust and trustworthiness

The bigger the psychic distance of the market that the decision maker wants to internationalize, the more challenging it is to create new relationships because of liability and outsidership (Galkina and Chetty 2015: 651). To overcome outsidership, according to Johanson and Vahlne (2009), trust in network relationships is important because it helps in acquiring an insider position in a foreign network (p. 1417), but, interestingly, building trust is not perceived as a specific goal in international business networks (p. 1418).

Prashantham and Birkinshaw (2015) identified a mechanism that social networks successfully utilize for international expansion. Relationships provide the tangible links to

customers and others with whom the firm might do business, as well as the intangible dimensions of trust and goodwill between actors that increase the motivation to share resources (Elango and Pattnaik, 2007; Hitt, Tihanyi, Miller and Connelly, 2006).

Sarasvathy and Dew (2008) do not, however, completely follow these arguments and argue that “in effectuation, clear goals do not drive the stakeholder selection process [...]. Instead, who comes on board drives what the goals of the enterprise will be” (p. 729). Effectuators act under conditions of information deficit and cannot determine whether interested stakeholders can be trusted or not (Galkina and Chetty 2015). Galkina and Chetty’s (2015) research shows that effectuators’ activities within networks build trust. Hence, although effectuation does not require trust *ex ante* (Sarasvathy and Dew, 2008), *ex post* trust is a natural outcome of network partners’ developments (p. 667).

Objectives

To explore how Swiss and Thai SMEs engage in international partnerships, and examine practices and routines followed by SMEs to develop trustworthy partnerships.

Methods

This research employed an exploratory research approach and gathered empirical evidence through qualitative interviews (Yin, 2013). The semi-structured interviews followed a predefined guideline, but also allowed the interview partners to talk openly about the firm’s decision to internationalize, their internationalization mode and their emerging relationships with international business partners. Furthermore, we explored the importance and meaning of trust in international networks. In-depth interviews with the management of 20 SMEs in Bangkok, Thailand were conducted between January 2015 and June 2015. In Switzerland, a further 20 SMEs were interviewed between November 2015 and April 2016.

Regarding sample selection, a purposive, convenient sampling method was applied in both countries. The sample companies were conveniently selected with the following criteria:

- (1) qualify as small or medium sized enterprises (SMEs) employing up to 250 employees,
- (2) have operated the businesses for more than 5 years, and
- (3) currently engaged in internationalization processes or activities, such as, but not limited to, export, import, joint venture, or some forms of foreign direct investment.

Interviews were conducted with CEOs, founders or board members directly involved in decision making related to internationalization. The data analysis was conducted in two steps. First, we analyzed the interviews primarily, but not exclusively, following the interview

guidelines. Second, we conducted a cross-case analysis to identify common themes (Miles, Huberman and Saldana, 2014). These emergent themes were discussed and defined until consensus in the team was obtained. Finally, emergent themes were woven into a narrative (Miles, Huberman and Saldana, 2014: 91) and supported by verbatim transcripts from the data.

Results and Discussion

1. The role of networks

A majority of the SME decision makers who were interviewed explicitly sought to grow their business through internationalization efforts reflecting their entrepreneurial orientation. Thai SMEs primarily expected higher revenue streams from international activities. Swiss SMEs, on the other hand, mentioned the limited size of the Swiss market. The most significant difference among the Swiss and the Thai samples was cost reduction as a driver for internationalization. This motivation was prevalent in Swiss SMEs, which is not surprising given its status as a high-salary country as opposed to Thailand's more cost-advantageous position as an emergent economy. Varying degrees of internationalization were observed among Thai and Swiss SMEs. Thirteen out of twenty Thai SMEs considered foreign markets to be their key markets. Only 6 out of 20 Swiss SMEs considered foreign markets to be key markets, whereas 12 Swiss SMEs considered foreign and Swiss markets as central to their business. However, only a minority of the SMEs that were interviewed viewed their home market as their key market.

All interviewees highlight the importance of developing and building sustainable relationships for successful internationalization. The interviewees generally viewed networks as "high value" for their businesses and relied on different functions within their continuously developing network. Swiss and Thai decision makers mentioned mutual benefits such as shared information, updated regulations, or market insights. It was described as the foundation of internationalization. One Swiss company stated

"Before you can set up any company abroad you have to first find the person who can make it happen and who you can trust. You cannot manage such a company, such setups, out of Switzerland. It needs a network. So we are in the people-to-people business based on trust and loyalty."

(Swiss SME 18, interview)

2. Emerging international partnerships

Our findings show that initial steps towards a national as well as an international

network are strongly driven by emerging opportunities and serendipity (Jones, Coviello and Tang, 2011). In the Thai context, international family connections were particularly relevant for the first internationalization efforts. Thai SME 1 expanded, for example, its international business by setting up a new subsidiary in Italy because one of their family members married an Italian. Thai SME 20 set up a new factory in India to export products to Thailand using the contacts of the owner's relative based in India. Similarly, existing friendships were used as an initial bridge to future international cooperation partners. It was highlighted that

“Market information and business know-how in the diamond industry are quite confidential. We rely on networks within family and friends. As we are a family-owned business, we can maintain business know-how and diamond knowledge within family members.”

(Thai SME 2, interview)

In the Swiss context, SME decision makers also built on personal and long-standing relationships in their first international endeavors. These relationships emanated, however, more often from the professional or business related context such as a trusted employee or long-term clients. For examples, it was stated that:

“We had an employee working for us in Switzerland who originally came from the country that is now our main foreign market. Due to personal circumstances he decided to return to his homeland. Instead of losing this good employee, we decided it would be better to work with this person we trust and build up a new organization abroad around him. The trust was already there.”

(Swiss SME 17, interview)

“We started with Pakistan. It was not our priority to go to Pakistan. It was more opportunistic. We had a network contact who impressed us with his organization, his customers etc. We do this when we see the partner can do it long-term, is trustworthy and is good. Then we are ready, like we did with Pakistan, to say we will try it.”

(Swiss SME 14, interview)

3. Building and developing trustworthy international partnerships

The initial contacts and interactions with new partners are primarily driven by serendipity and opportunities. Once the first contacts are established, both Thai and Swiss decision makers purposefully and strategically engage in a series of actions and activities to further develop and strengthen these relationships. For both Thai and Swiss SMEs, a first step towards developing a sustainable and trustful relationship is getting to know potential business partners. The process of getting to know each other is clearly focused on

interpersonal relationships, which also implies learning about the partner's language and culture.

Furthermore, SME decision makers aim to develop closer relationships by meeting up on a regular basis, having lunch or dinner together, bringing some gifts to show respect, and paying a visit on special occasions. If customers come to Thailand, they will always be well taken care of.

We can observe within our research that the importance of trust in building an international network is of equally high importance for Swiss and Thai SMEs alike and they all stipulate that developing trustworthy relationships takes time. It was stated that

“Trust is an extremely important factor, but it has to be built up over the years.”

(Swiss SME 5, interview)

Thai and Swiss companies alike highlight how fragile these relationships are and indicate that a breach of trust is generally sanctioned by an exclusion from the network.

Trust is for 17 out of the 20 Swiss interviewees the foundation of beneficial business relationships in the context of internationalization. The prevailing belief is that sustainable and trustworthy relationships are based on equality and mutual contributions.

“For me trust is the starting point for networks. I trust. I offer that trust from the start. If you mistrust as the norm, then it is difficult to network. [...] Giving and taking is important, but for me, personally, the giving is more important since it anyway comes back somehow.”

(Swiss SME 2, interview)

Conclusion

Networks provide the internationalizing SME with various critical tangible and intangible resources. It has been confirmed that in both Thailand and Switzerland the social network is considered an invaluable source of information and know-how for internationalization. We are also able to confirm that SME decision makers in both countries make use of networks to reduce information asymmetry by acquiring information relevant to their international expansion (e.g. Manolova, Manev&Gyoshev, 2010; Ojala, 2009).

Trust among network partners plays a key role in the early stages of the formation of a new cooperation (Kohtamäki, Kekäle&Viitala, 2004). Network relationships are based on mutual trust, knowledge as well as knowledge exchange, and commitment towards each other. Sharing information, market insights, and combined expertise in networks help SMEs in Thailand as well as in Switzerland to be successful in internationalization processes and to ensure the trustworthiness of network partners.

We also found difference between Swiss and Thai decision makers which we attribute to cultural differences. It has been found that personal networks and trust in network partners play a prominent role in the internationalization of SMEs in Thailand as well as in Switzerland. But SME decision makers in Switzerland assume trust in their network partners, but do not necessarily evaluate the trustworthiness of their relationship using a causal approach. Nevertheless, experienced decision makers have developed routines which assist them in intuitively gauging the trustworthiness of their interaction partners.

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THE DESIGN AND DEVELOPMENT OF YAM BEAN CURRY PUFF PACKAGING FOR VALUE ADDED MAHASARAKHAM PROVINCE'S OTOP PRODUCTS

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ABSTRACT

The purposes of this research were (1) To study the guideline of packaging development for Mahasarakham province's OTOP product, yam bean curry puff (2) To develop the packaging of yam bean curry puff, regarding to target consumers' requirements. This research was a qualitative research. The data was collected from male and female, who were between 25-45 year-olds and had consumed and purchased the curry puff at least once in last year (including other brands). This research was divided into two parts; the first part of this study consisted of an in-depth interview, which was collected by face to face interview with 21 key respondents in order to study the concept of packaging design of OTOP Mahasarakham yam bean curry puff. The second part consisted of a qualitative research which was collected by the focus group with 8 key respondents in order to develop the new packaging of yam bean curry puff. The respondents revealed that new packaging design should be round edged rectangular box with handles. The product inside should be seen through box's die-cut window. The cream toned color should be applied as main color design with curry puff and yam bean reference images. Logos should be placed in front-of-pack area, and center-upper area of the box. Product name should be located in mid-front of pack area under logo. The position of reference images should be at the front left and right bottom of packaging box. A position of warranty sign should be beside of the packaging box. The NEW wording should be at the front left top of packaging box.

Key words: Packaging development, Yam bean curry puff, OTOP, Mahasarakham

Introduction

The One Tambon (Sub-district) One Product (OTOP) was a local entrepreneurship stimulus program designed by government during 2001-2006 that has been proceeded until now. OTOP was the crucial government policy, aiming to leverage local intellects to develop the product which was supported by government in terms of knowledge and management to connect local community products to domestic and international market via various

technology systems. The purpose was to strengthen local community to be self-dependable by letting local people to take part in job creation, income generation, and maximizing local intellects by transforming them to be unique, quality, value added product in the harmonious culture and local life styled context. Drawing the inspiration from Japan's successful One Village One Product (OVOP) program, the OTOP program encouraged village communities to improve the quality and marketing of local products, selecting one superior product from each Tambon to receive formal branding as its "starred OTOP product" in order to promote the product for more market awareness. Regards to publicizing, Thai OTOP project was amidst of many challenges. Be it, indifferent product, local identity lacking, too less utilization of local materials, unaccommodating product to community, packaging support lacking, government support discontinuity, community capability information lacking of local governor (SuthisakKlin kaewnarong , 2015)

Nowadays, OTOP product was available in every province of Thailand. One of OTOP products from Mahasarakham province is yam bean curry puff of Sam-Had housewives group ,Borabue district. Yam bean is considered as well-known local economic vegetable in this area. Nevertheless, discontinuity and lacking of support to endorse its local identity image are now the challenges. Borabue District Agricultural Extension Office and Local Administrative office were interested to secure local identity plant persistently, and engage local farmers to corporate in group for yam bean plantation in order to raise the income from the crops all year round, especially during rainless season, which could create jobs and continuous revenue for local farmers. However, when yam bean was favored by local farmers for plantation and faced price reduction issue due to its oversupply, the local community then sought help from government. Finally, the outcome was the availability ofyam bean curry puff, which is the famous Mahasarakham Province's OTOP product with value added benefit, that triggers consumers attention.

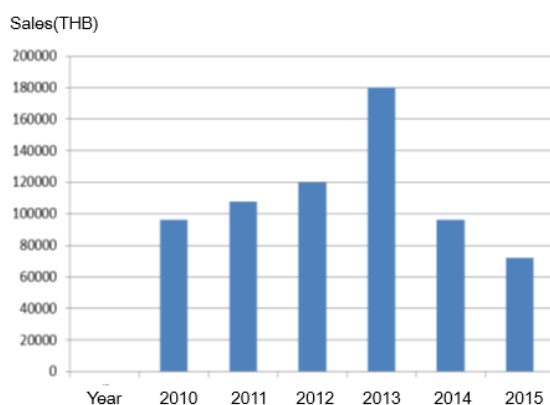


Figure 1: Sales revenue of yam bean curry puff during 2010-2015

Source: Sam-Had housewives group of Borabue district, Mahasarakham Province , 2015.

Figure 1 represents sales revenue of Sam-Had housewives group of Borabue district, Mahasarakham Province's yam bean curry puffs since 2010-2015. It could be seen that sales had increased consistently from 2010-2013, and hit the top in 2013 with 180,000 Baht sales. However, sales had dropped from 2014 consecutively to 96,000 Baht in 2015.

According to the interview with the president of Sam-Had housewives group, their yam bean curry puff has been sold since 2004 and has been well-known all along. The product's key differentiation point is its well-balanced taste. The president is extremely confident that the taste is not issue. However, the packaging was identified as an issue, drawing sales revenue, due to the current packaging is still the same design since its first launch in 2004. Thus, the pack which lacks of newness, distinctiveness was concluded as the critical reason, resulting sales decline since 2014 as shown in figure 1. Hence, there was the strong need to develop new product packaging.

Literature review

For this research, secondary packaging of yam bean curry puff was the main focus to be studied. It worked as packaging that compiled primary packs altogether to protect the product and to trigger selling on shelf without touching the edible products. The role of secondary packaging was also found as point of purchase 's visual merchandiser, which should be aesthetically designed since it effected the product image (Sukrita Hirunchawalit, 2009). This research selected paper material for yam bean curry puff new packaging development according to the paper properties. Be it, design and publishing friendliness, ease of transportation, and display. Graphic design was emphasized aiming to beautify in order to create uniqueness, and attracting to customers.

To conclude, packaging development factors were (Sumalee Thongrunroj, 2012)

1. Shape: From the study, pastry packaging could be developed into various types. Shape or style of the packaging critically affected consumer awareness and attitudes towards product as being the attracting point for consumer to make purchasing decision. Differentiating product from competitors with packaging shape as unique point that linked to the product could create consumers awareness and recall. The researchers opted for rectangular shape, round-edged rectangular shape, triangular shape, rectangular shape with handles.

2. Internal product visibility : Appearance was the one character of the sensory. Regarding to sensory perception by eyes, the color, shape, size, glossiness, etc, affected consumer interest, and purchasing decision (Piyaporn Suriya, 2011). To align with research objective, internal product visibility was a factor added.

3. Color tone : Selecting the right color tone was one of the key concern since it linked to consumer perception. Therefore, main color tone was also in this study's focus.

Entrepreneur should take color tone selection and product compatibility into account whilst value adding the product. Different colors gave different consumer perceptions, and trigger different feelings, for instance, hungry, eye catching, like or dislike. Hence, target customer should be clearly identified, including who they were, residence area, preferences or objections. People perceptions were varied based on geographical area, culture, to name a few. Picking wrong color tone means less effective or ineffective communication.

4. Reference image: The chosen reference image should be easy to communicate to consumer that was able to publicize product effectively. Reference image types consisted of virtual reality, drawing, photograph. It was important to consider reference image selection since it urged purchasing interest of consumer. Hence, this study targeted to figure out the right type of reference photo according to consumer needs.

5. Composition: This research studied key compositions, including product logo, product name, reference image, warranty sign to ensure it fits target customer preference. In terms of packaging composition, Product logo was the sign and mark to bring customer awareness as part of brand name or trade mark. Product name was the use of short memorable distinctive unique word that lucidly links to product. Reference image or picture was the communication intermediary between producer and consumer that could attract target consumer while conveying the understanding of what inside product was. In addition, the warranty sign was the quality mark implying good product assurance, positive product image as well. Hence, great packaging composition that was just-right, clear, simple and aesthetic would clearly result attractive uniquely differentiating product.

Research objectives

1. To study the guideline of packaging development for Mahasarakham province 's OTOP product, yam bean curry puff 2. To develop the packaging of yam bean curry puff, regarding to target consumers' requirements.

Methodology

The research approach used was qualitative research where Data collection process was split into 2 steps that will be mentioned in the following section.

Key respondents in this research were male and female consumers aged 25-45 years old, who had consumed and purchased the curry puff at least once in the past one year (including other brands)

Research tools

The research tools were interview guideline, voice recorder, writing accessories, camera. First step started with developing interview tool of the in-depth interview as follows.

- (1) Literature review for collecting information to cover research content. Developing the interview guideline draft, then discussed with the advisor for the recommendations.
- (2) Revising draft interview guideline and bringing it to professional for advice
- (3) Editing the interview guideline and final proving with the advisor before using as research data collection tool.

For second step, researcher developed interview tool for Focus group discussion as following processes.

- (1) Literature review to ensure information regarding the research is fully covered, and developing the draft interview guideline.

- (2) Synthesizing information from in-depth interview to design yam bean curry puff secondary packaging.

- (3) Yam bean curry puff secondary packaging designing by informing designer team to understand the requirement of respondents concluded from in-depth interview findings in the first step. Then, the designer team worked on example of yam bean curry puff secondary packaging photos as a result.

- (4) Crafting interview guideline for focus group discussion and consulting with the advisor for recommendations

- (5) Revising draft interview guideline based on the advisor's suggestions, and proposing back to advisor for approval before using as research data collection tool.

First data collection step

The first step was In-depth Interview in one-on-one basis, seeking for development direction of yam bean curry puff secondary packaging, which used structured interview.

The research data collection step commenced with research objective informing to respondents. The discussion during the interview was voiced and written recorded for all answers in prepared interview guideline. Data validation was taken placed by providing the recorded data back to respondents to check whether or not it aligned with respondents' thoughts (data triangulation). The interview was repeated until gaining repeated data without new data , which is also known as data saturation. Then, the interview was close. (Ong-art Naiyapatana,2011)

Second data collection step

In this step, information from in-depth interview was used for focus group discussion, aiming to find yam bean curry puff new packaging development direction in order to resonate with target customers. Voice record was proceeded during focus group discussion

for ensuring complete data collection and could be transformed into written record thereafter. There were steps as follows.

- (1) Moderator's self introduction and informing research objective
- (2) Moderator reviewed in-depth interview findings to the respondents
- (3) Moderator commenced the interview by conveying friendly atmosphere to lessen discussion pressure.
- (4) Proceeding group discussion while recording respondents' remarks by moderator.

Data Analysis

First and foremost, the analysis began with data analysis process (Yothin Sawangdee, 2015), which consisted of 1) Transcribing in-depth interview record 2) Collating and classifying information into topics 3) Interpreting and analyzing contents 'characteristic which was relevant to research questions 4) Associating interview data together whilst ensuring its relevancy to research questions 5) Narrating the findings scrutinizingly along with elaborating the reasons to be more clear 6) Finding conclusion from in-depth interview according to research questions. Conceptualizing yam bean curry puff secondary packaging design directions, consecutively.

The second analysis step for focus-group interview process (Chai Podhisita, 2007) commenced with 1) Transcribing focus group discussion deliberately, and data interpretation. 2) Collating and classifying information regarding to research questions. Data Interpretation and analysis. 3) Analyzing and Narrating information according to appeared data characteristic to craft conclusion. Then, bringing the thoughts from focus group discussion to conclude the research findings.

Findings

Both of the research findings were according to this first research objective which was to study the guideline of packaging development for Mahasarakham province's OTOP product, yam bean curry puff.

Part 1 According to 21 respondents. It was found that main respondents were female (13 persons), male (8 persons). Respondents' education levels were Bachelor degree (14 persons), Undergraduate (6 persons), Above Bachelor degree (1 person). In terms of age, there were respondent aged 25-29 (7 persons), 30-34 (5 persons), 35-39 (5 persons), 40-45 (4 persons). Occupation wise, there were corporate employees (18 persons), self-employed (2 persons), government service and state enterprise officer (1 person). Also, respondents income range were 15,001-30,000 Baht (13 persons), below 15,000 Baht (6 persons) 30,001-45,000 Baht (2 persons)

Part 2 It revealed that respondents requirement on new yam bean curry puff secondary packaging were round edged rectangular box with handles whose figure was

aesthetically distinctive than other shapes. Product visibility could be seen through the packaging which triggers consumer purchasing intention. Packaging color should be in cream tone, which was similar to the yam bean product itself, or brown, which resembled yam bean, or white, which looked like peeled yam bean, or yellow, which took after yam bean core, or bright pink to be uniquely different. One color tone was recommended to be obvious. Reference image should contain curry puff, and yam bean to convey the linkage to the product. Any suitable and beautiful image was suggested. Regards to new packaging composition, center-upper, front-of-pack area suited logo location to be clearly visible. The product name should be located in mid-front of pack area under logo due to product name was placed under logo in most cases. The position of reference images and warranty sign should be according to the packaging designer specialist due to the designer's tremendous experiences. Therefore, the 5 packaging concepts according to the respondents were proposed with just different in colors as the figure 2



Figure 2: Yam bean curry puff new packaging concept 1-5

Source: The findings from respondents' in-depth interview

For the following research finding, all yam bean curry puff new packaging concepts were brought to discuss during focus group discussion, aiming to achieve the second research objective which was to develop the packaging of yam bean curry puff, which followed target customer requirements

Part 3 Regards to the focus group discussion of 8 respondents, the outcome of new packaging of yam bean curry puff should round edged rectangular box with handles. The product inside should be seen through box's die-cut window. The cream toned color should be applied as main color design with curry puff and yam bean reference images. Logos should be placed in front-of-pack area, and center-upper area of the box. Product name should be located in mid-front of pack area under logo. The position of reference images should be at the front left and right bottom of packaging box. A position of warranty sign should be beside of the packaging box. The "NEW" wording should be at the front left top of packaging box.



Figure 3: New yam bean curry puff packaging

Source: The research findings of The design and development of yam bean curry puff packaging for value added Mahasarakham province's OTOP product, 2017

Discussion

For this yam bean curry puff packaging design and development study, where the secondary packaging was in focus, it was revealed that respondents wanted to see internal product inside to engage purchasing intention. The outcome was also aligned with The Development of a Preserved Pineapple Concept Destined to Become a Provincial Souvenir in PrachuapKhiriKhan (KanokwanJantaudomsuk, 2015), which found that the majority of respondents also required see-through packaging to check internal product 's freshness and color

Regards to yam bean curry puff secondary packaging, most respondents recommended to add handles to be better-look, cute, as well as to engage convenience and portability, which was in line with the paper of Siam commercial bank about Thai SMEs packaging weakness resolution (23 November 2016). The paper indicated that good packaging should resonate to consumer need and taste to incessantly trigger customer purchasing decision right after seeing it. The packaging should be easy to use, be it, good functional property, portability that affected sales revenue. For all of these reasons, they could ignite marketing opportunity by merely adjust existing packaging to fit customer requirement.

In light of yam bean curry puff secondary packaging development, key respondents require cream color tone since it was the edible good, clean, simple and good looking pack should be most attractive packaging. This was also found as the same direction with the study of color selection that affected OTOP product, hand woven cloth and Thai crispy pancake, packaging, (Akachai Toloeng & Chanprapa Puangsuwan, 2007) where the researchers discovered that most key respondents which were foreigners' purchasing decision depended on light cool color scheme applied, which could attract customer by conveying the safe feeling, beauty, and buying intention triggering. This study also gave guidance on market opportunity from foreign customers which aligned with theory of

Natalie Engelhardt (Engelhardt, 2010), who discovered color impact on consumer perception and highlighted that cool color tone was better perceived to be safe in consumer point of view than others.

Moreover, key respondents of yam bean curry puff secondary packaging study required reference image of packaging to be curry puff and yam bean photos which implied that there were curry puff and yam bean inside. Thus, customers would feel interested and want to try and buy the product. This conclusion was also showed in the study of Bang kratumdried banana, Phitsanulok province packaging development (Krisana Sikaman, 2008) which revealed its key respondents requirement in terms of reference image of packaging to have dried banana photo available to inform customer about what was packed inside the packaging.

Conclusion

The new packaging design of yam bean curry puff according to the study should be round edged rectangular box with handles. The product inside should be seen through box's die-cut window. The cream toned color should be applied as main color design with curry puff and yam bean reference images. Logos should be placed in front-of-pack area, and center-upper area of the box. Product name should be located in mid-front of pack area under logo. The position of reference images should be at the front left and right bottom of packaging box. A position of warranty sign should be beside of the packaging box. The "NEW" wording should be at the front left top of packaging box.

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