THE INFLUENTIAL FACTORS ON THE RELATIONSHIP BETWEEN DIVERSIFICATION STRATEGIES AND FIRM PERFORMANCE: A STUDY OF CHINESE PUBLICLY-TRADED TOURISM FIRMS

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The Influential Factors on the Relationship between Diversification Strategies and Firm Performance: A Study of Chinese Publicly-Traded Tourism Firms

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CERTIFICATE OF ORIGINALITY

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Chen ZHENG

ABSTRACT

Although diversification, as a strategy, has been widely implemented by different firms in many industries, based on previous empirical studies, there is still no consensus on whether a diversification strategy enhances firm performance. This inconsistency may be caused by different firm-specific characteristics and firms being surrounded by different market environments. These aspects formed the motivation for conducting this research.

This study focused on China's tourism industry in which product diversification has become a phenomenon whereby Chinese tourism firms operate their businesses in other industries. Understanding the effects of a product diversification strategy on the performance of tourism firms in China is necessary because it is important to establish whether this common strategy leads to better firm performance in a developing economy. This study examined both linear and nonlinear relationships between product diversification and firm performance and focused on a geographic diversification strategy as one of the moderators of the relationships.

From the resource-based view, some organizational factors are also essential to the consequences of diversification, and there is a lack of empirical studies exploring the effect of organizational factors on the relationship between product diversification and firm performance. Therefore, this study aimed to investigate the effects of three selected organizational factors—product relatedness, the human capital of a firm, and the flatness in organizational structure—on the relationship between product diversification and firm performance.

In total, 26 were selected for this study. Data were collected from the 2008–2015 annual reports of the selected firms. Two performance measures—return on

assets (ROA) and Tobin's Q—were the dependent variables in the estimation models; product diversification, geographic diversification, product relatedness, human capital, structure flatness, and market structure were the independent variables. Additionally, firm size, firm age, debt ratio, and capital intensity acted as the control variables in the estimation models.

The presence of significant linear and nonlinear relationships between product diversification and firm performance (measured by ROA and Tobin's Q) were supported by the findings of this study. The positive moderating effect of geographic diversification on the relationship between product diversification and Tobin's Q was also supported. The negative and significant moderating effect of product relatedness on the relationship between product diversification and Tobin's Q was supported too, which was contrary to the proposed hypothesis. Moreover, the factor of human capital was shown to have no effect on the relationship between product diversification and firm performance. Additionally, the positive effect of product diversification on Tobin's Q was found among the group of flatter firms, and the negative effect of product diversification on Tobin's Q was found among the group of firms with a more complex organizational structure. Lastly, the positive moderating effect of the market structure (measured by market concentration ratio) on the relationship between product diversification and firm performance (measured by ROA and Tobin's Q) was supported.

This study enriched the existing literature on diversification in the tourism industry. The integration and application of the resource-based theory, modern portfolio theory, resource dependency theory, and the structure-conduct-performance (SCP) paradigm also contributed to the academic literature. The significant moderating effect of the market structure sheds light on a new nexus in the SCP

paradigm. Through identifying the optimal levels of product diversification and finding the significant moderating effects of product relatedness, geographic diversification, structure flatness, and market structure on the relationship between product diversification and firm performance, this study can inform industry practitioners on ways to develop better practices.

ACKNOWLEDGEMENTS

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I also wish to express my gratitude to many friends who play basketball together during the spare time. Playing basketball, as my only hobby, enriches my life. Among the tournaments, we won and lost together. The game always teaches me how to help and support others and how important team spirit is. Furthermore, I would like

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CHAPTER 1. INTRODUCTION

1.1 Chapter introduction

This chapter discusses the relevant issues and concepts discussed in this study. It starts by emphasizing the study's purpose, which further links to the industrial background information with respect to inbound, outbound, and domestic tourism in China, as well as the overview of the Chinese hotel industry and that of the implementation for diversification in Chinese publicly-traded tourism firms. This section highlights the role of market structure, organizational factors, and geographic diversification on the relationship between diversification and firm performance. After identifying the research problems and gaps, the research questions are outlined, and a set of research objectives are stated. The last section of the chapter describes the structure of this study.

1.2 Purpose of the study

Diversification, as an important business strategy, increases market share and profitability (Ayal & Zif, 1979). The effect of diversification strategy on firm performance has been one of the key topics in strategic management research (Ramanujam & Varadarajan, 1989). Researchers from different disciplines have explored and identified the various ways by which diversification strategy affects firm performance (Christensen & Montgomery, 1981; Kim & Gu, 2003; Lee, Xiao & Kang, 2011; Olusoga, 1993; Tang & Jang, 2010). Although the diversification literature is sufficient, there has been no consensus on whether or not a diversification strategy enhances firm performance and the stability of a firm's business development (Lee & Jang, 2007). Christensen and Montgomery (1981) stated that the inconsistent pertinent results regarding the influence of diversification on firm performance can be attributed

to the fact that the market structure is overlooked. Park and Jang (2012) pointed out that the lack of focus on industry-specific factors toward the diversification strategy, and the neglect of the relatedness between diversified segments and core businesses lead to biased results on the projected performance of a firm's diversification strategy. Bettis and Hall (1982) also advocated that industry-specific factors can significantly influence diversification strategy from a risk reduction perspective.

Furthermore, Datta, Rajagopalan, and Rasheed (1991) pointed out a series of organizational factors that serve important roles in the implementation and institutionalization of diversification strategies. These factors include organizational structure (Rumelt, 1974), the degree of divisional autonomy (Vancil, 1979), organizational culture (Nahavandi & Malekzadeh, 1988), and management styles and organizational system (Kazanjian & Drazin, 1987; Kerr, 1985). The distinctive competencies and core skills of an organization can be transferred through diversification. The structure, culture, and systems of an organization serve as key mechanisms that helps firms achieve the benefits of diversification (Bettis, 1981; Rumelt, 1974). Datta et al. (1991) reported the link between potential diversification benefits with the effective implementation and management of diversification. The success of diversification is determined by a series of factors, such as organizational structure, as well as an appropriate level of autonomy (Datta et al. 1991).

As the product and geographic diversification strategies are commonly implemented by Chinese tourism firms, the present study only focuses on these two types of diversification strategies. This study aims to (1) identify the moderating effects of market structure and organizational factors on the relationship of product diversification and firm performance and (2) identify the moderating effect of geographic diversification on the relationship between product diversification and

firm performance. On the basis of the theoretical foundation of modern portfolio theory, resource-based theory, resource dependence theory, and the structure-conduct-performance (SCP) paradigm, the constructs of market structure, organizational factors, two diversification strategies, and performance, are elaborated in this study, along with the possible relationships among them. Ultimately, the purpose of the study is to delve into the link of diversification-performance in the context of the tourism industry, where market structure, some organizational factors, and geographic diversification may play important roles as moderators.

1.3 Background

1.3.1 Industry background in China

According to the information from Trading Economics (2016b), China announced an annual 6.7% GDP growth rate in the first quarter of 2016, which has slowed down to 2015. It shows a trend that the GDP of China is slowing down. The 2015 GDP growth rate, which was the weakest since the first quarter of 2009, was slightly lower than that in 2014 at 7% (National Bureau of Statistics of China, 2015). The Chinese GDP consists of three major sections: primary, secondary, and tertiary industries. The primary industries include farming, fishery, animal husbandry, and forestry, and they account for around 9% of the GDP in 2015. The secondary industries include industry and construction with nearly 50% GDP contribution. The tertiary industries fill in the remaining output from wholesale and retail trades, transport, storage and post, hotel and catering service, financial intermediation, and real estate (National Bureau of Statistics of China, 2015). From 1989 to 2016, the GDP growth rate peaked at 15.4% in 1993 and dropped to the bottom at 3.8% in 1990. The average of annual GDP growth reached 9.85% during this period.

The tertiary industries contributed to 41% of GDP in China in 2015, which proved that the service industries have become the primary driving forces of developing economies. According to the China National Tourism Administration (CNTA), the total number of travel agencies in the mainland reached 27,621 in 2015. Based on the statistics of 2015 from travel agencies, in total, travel agencies organized 14.27 million inbound tourists with the revenue of CNY 19.95 million, increased by 1.17% in the number of organized inbound tourists and decreased by 0.4% in the gained revenue to 2014. Furthermore, in total, travel agencies organized 48.74 million outbound tourists, an increase of 19.69% in comparison with 2014. For domestic tourism, travel agencies organized 143.07 million domestic tourists and gained the revenue of CNY 156.73 million in total, which increased by 9% for both aspects compared to 2014 (Travel China Guide, 2016).

1.3.1.1 China inbound tourism

China is among the most popular destinations worldwide, ranking first in terms of the number of inbound tourist arrivals in the region of Asia and the Pacific and fourth globally behind France, America, and Spain (UNWTO, 2016).

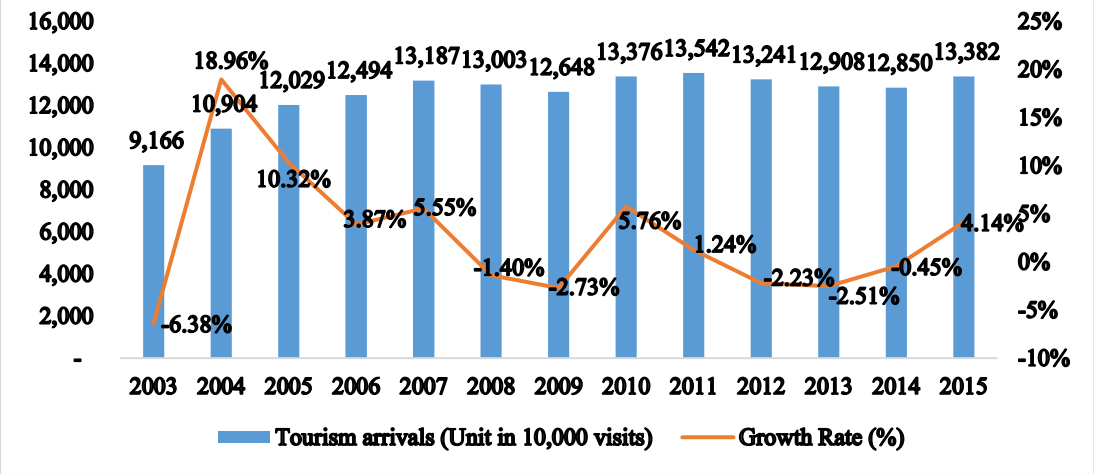

Figure 1.1 China inbound tourist arrivals and growth rate
Source: Travel China Guide (2016)

Figure 1.1 shows an increasing trend in terms of the growth rate of inbound tourists after 2013. Perhaps, it can be attributed to the newly issued policy related to the entry visa of China, the 72-hour-visa-free transit policy that started from January 1, 2013. This policy has been adopted by an increasing number of cities where connect international airlines network, such that overseas visitors can access more cities in China nowadays.

The number of inbound tourists increased consecutively from 2003 to 2007 as shown in Figure 1.1. After 2007, a consecutive two-year decline occurred since financial crises in American and European countries constrained the spending of overseas travelers on traveling (Travel China Guide, 2016). European and American visitors as the second and third largest shares of foreign tourists contributed to China's inbound tourism market with 18.82% and 11.99% of the total foreign tourists, respectively (Travel China Guide, 2016). However, two main factors have been concerned to impact on the inbound tourism. First, the air pollution in the northern part of China, including Beijing, Tianjin, and other cities, affects the destination choices of foreign visitors. Second, the traditional itineraries and tourism products lack the novelty and competitiveness with less effort in the promotion of inbound traveling from Chinese authorities (Travel China Guide, 2016).

Table 1.1 Chinese inbound tourists in 2015

	Number of Tourists Arrivals (in million)	Growth over the same period of 2014 (%)
Total Tourists Arrivals	133.82	4.1
Foreign Tourists	25.99	-1.4
Hong Kong Tourists	79.45	4.4
Macau Tourists	22.89	10.9
Taiwan Tourists	5.50	2.5

Source: Travel China Guide (2016)

Table 1.1 indicates that the three major sources of the inbound tourism market in China reported by the China Tourism Academy in 2015 are Hong Kong (79.45 million visits with the growth of 4.4% over 2014), Macau (22.9 million visits, increased by 10.9% compared to 2014), and Taiwan (5.5 million visits with an increase of 2.5% over 2014). Furthermore, in 2015, the total number of foreign tourists decreased by 1.4% in contrast to that in 2014. Among the foreign tourist markets, most foreign tourists come from South Korea, accounting for 64% of the total, which is the largest share of the total foreign tourists.

Moreover, Table 1.2 shows the top 20 China inbound tourism source countries and regions in 2015 according to Travel China Guide (2016). Apart from the top three source markets of China inbound tourism as shown in Table 1.2, the majority of China inbound tourists are from Asian countries and North America.

Table 1.2 Top 20 inbound tourism source countries and regions in 2015

1	Hong Kong	11	Philippines
2	Macau	12	Singapore
3	Taiwan	13	India
4	South Korea	14	Canada
5	Japan	15	Thailand
6	Vietnam	16	Australia
7	United States	17	Germany
8	Russia	18	United Kingdom
9	Malaysia	19	Indonesia
10	Mongolia	20	France

Source: Travel China Guide (2016)

1.3.1.2 China outbound tourism

China is becoming one of the primary outbound tourism destinations globally. According to the statistics from China Tourism Research Institute in 2015, the total outbound visitors reached 120 million in 2015 with 104.5 billion US dollars in total spending overseas, indicating 12% and 16.6% increases in the number of visitors and overseas spending, respectively, compared to 2014. These increases are driven by the

rise in income, the liberalization of the visa policy of other countries, and the appreciation of Chinese currency to other countries. Table 1.3 indicates the top 10 outbound destinations in the first half of 2015 according to Travel China Guide (2016).

Table 1.3 Outbound destinations for Chinese tourists in 2015

	Top 10 Outbound Destinations	Top 10 Overseas Destinations Travel Agencies Operate
1	South Korean	Thailand
2	Taiwan	Hong Kong
3	Japan	South Korean
4	Hong Kong	Japan
5	Thailand	Taiwan
6	France	Macau
7	Italy	Singapore
8	Switzerland	Vietnam
9	Macau	Malaysia
10	Germany	Indonesia

Source: Adapted from Travel China Guide (2016)

As shown in Table 1.3, Asian destinations have become the major outbound travel destinations for Chinese tourists. Additionally, some European countries are also popular with Chinese tourists. For example, the number of Chinese tourists rapidly increased in the first half of 2015 to nearly twice of the number over the same period of 2014 for Germany because of the German liberalization of visa procedure, such as the ease of biometric visa requirements, and an increase of visa centers in different cities in China. Furthermore, the romantic culture and art-oriented the destination image influenced Chinese tourists to travel to France, Italy, and Switzerland, accounting for a significant market share of outbound tourism according to Table 1.3. In contrast, the number of tourists to Hong Kong dropped over 50% in comparison with that of 2014 because of political instability and incidents against mainland shoppers, and it declined to fourth place in the ranking of outbound destinations in 2015.

The 2015 demographical analysis of outbound tourists of the CNTA reported 64% of tourists were female keen on shopping, such that countries and regions with high-quality goods, such as Hong Kong, attracted them. The 25−34 age group was the largest proportion of the total number of outbound tourists, indicating a younger age group for outbound traveling. The provinces along the eastern coastal line are the major sources of Chinese outbound tourists, in which Guangdong ranked first, Zhejiang second, and Shanghai third.

1.3.1.3 China domestic tourism

According to the CNTA, the China domestic tourism is a major contributor to the total national tourism income. From the view of economic influence, domestic traveling increases employment for the labor market and enhances the consumption and domestic economic development in China. In 2015, the most popular destinations for Chinese domestic tourists are Beijing, Shanghai, Guangzhou, Xian, Guilin, Hangzhou, Sanya, Lhasa, Chengdu, and Lijiang. The major national holidays tightly associated with the demand for domestic travel in China are the Chinese Spring Festival, Qingming Festival, International Labor's Day holiday, the Dragon Boat Festival, and National Day holiday.

Figure 1.2 depicts China's domestic tourism from 2005 to 2014. Evidently, the number of domestic tourists from urban residents dramatically increased from 2011 to 2014, and those from rural residences steadily increased from 2005 to 2014. The factors that drive the increases are the income growths of both urban and rural residents in the last decade. The average annual income of Chinese citizen in 2015 was CNY 62,029 which was nearly tripled to 2006 (CNY 21,001) (Trading Economics, 2016a). There are also some social factors that influence the domestic

tourism of China. For instance, the economic transition helped develop cities in China as evidenced by the real estate progress so that the capacity of the city had been increased. It resulted in the increased population of urban dwellers from 2005 to 2014 and was also the reason why urban dwellers dominated China's domestic tourism as shown in Figure 1.2. Furthermore, well-developed transport infrastructures in urban areas promoted domestic tourism as well, such as building up an airport in a city, a high-speed train connecting cities.

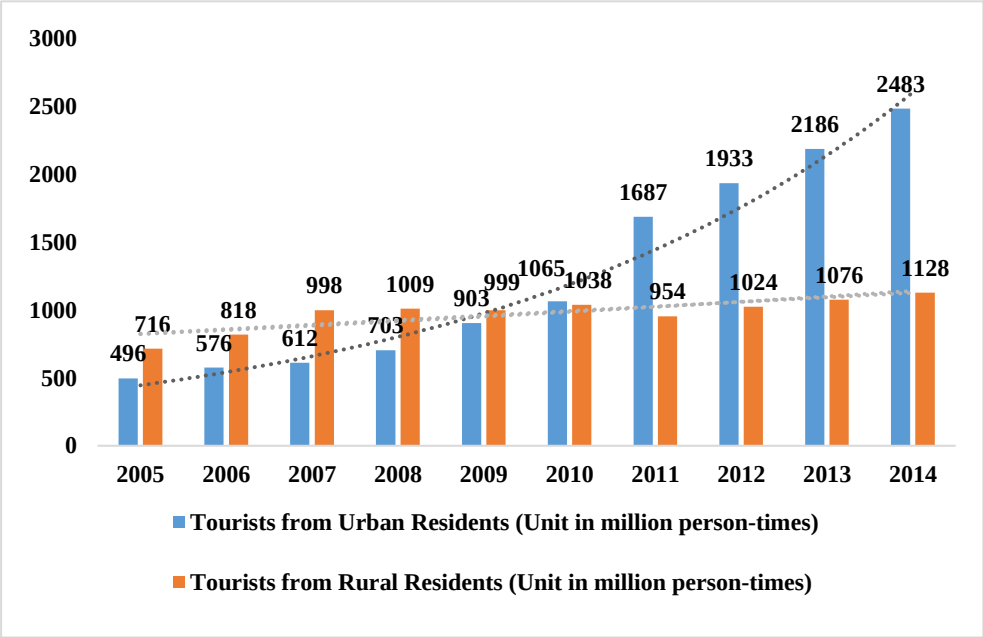

Figure 1.2 China domestic tourism 2005-2014
Source: The Yearbook of China Tourism Statistics (2015)

1.3.1.4 The hotel industry in China

Chinese economic growth has reflected the rapid development of economic globalization. China has been one of the major markets of business trade and investment activities globally. Gu et al. (2012) stated that the development of the Chinese hotel industry was led by the national economic development as China became the world's second-largest economy regarding total GDP.

Table 1.4 Market value and establishments of Chinese hotels and motel industry

	US $ in billion	% Growth	Establishments	% Growth
2010	50.9		18,752	
2011	59.7	17.20%	19,698	5.00%
2012	62.9	5.40%	20,418	3.70%
2013	66.3	5.40%	22,002	7.80%
2014	75.3	13.60%	22,840	3.80%
CAGR		10.30%		5.10%

Source: Adapt from MarketLine (2016)

The Chinese hospitality industry amounted to a total market value of US $ 75.3 billion in 2014 and 10.3% compound annual growth rate (CAGR) from 2010 to 2014, as shown in Table 1.4. The number of establishments increased to 22,840 with 5.1% CAGR between 2010 and 2014. The establishments to be achieved by the end of 2019 is forecasted at 31,606, reaching 6.7% CAGR between 2014 and 2019 (MarketLine, 2016). According to MarketLine (2016), the U.S. hotel and motel industry had 1 % CAGR and 5% CAGR in terms of establishments and market value from 2010 to 2014. In comparison with the statistics of the U.S., the hotel industry in China had a dramatic growth from 2010 to 2014. According to the latest information shown in the report of Hotel Industry Study 2016 CHINA, the average occupancy rates of five-star hotels, four-star hotels, and three-star hotels are namely 58%, 64.4%, and 67.7% in the fiscal year of 2015. The average daily rates (ADRs) of five-star hotels, four-star hotels, and three-star hotels are namely CNY 775, CNY 480, and CNY 334.

Yu and Gu (2005) pointed out the strengths of the Chinese hotel industry including its increased popularity as a destination choice for business and leisure travelers, diverse hotel products, the willingness of both government and industry to improve operations in order to match international standards, and the emergence of the large amount of domestic hotel groups. As shown in Table 1.5, one of the unique characteristics of the Chinese hotel industry is the diverse types of ownership.

Table 1.5 Hotel ownership and distributions of star-rated hotels in China, 2016

Ownership	No. of Hotels		No. of Rooms	No. of Beds	Room Occupancy (%)	Total Revenue (¥)
Total	9861	%	1,420,489	2,482,841	54.73	202,726,010.16
Domestic Funded						
State-Owned Enterprises	2,254	22.86	334,473	588,444	54.52	48,372,965.63
Collective-Owned Enterprises	303	3.07	32,868	59,892	53.35	3,915,601.43
Cooperative Enterprises	246	2.49	29,632	57,510	53.14	3,085,532.72
State Joint Ownership Enterprises	17	0.17	3,079	5,569	60.31	221,642.43
Collective Joint Ownership Enterprises	19	0.19	1,949	3,217	54.55	143,333.94
Joint State-Collective Enterprises	8	0.08	778	1,432	50.44	95,746.86
Other Joint Ownership Enterprises	24	0.24	3,306	5,554	55.20	370,218.14
State Sole Funded Corporations	297	3.01	48,597	78,373	59.24	9,346,515.81
Other Limited Liabilities Corporations	663	6.72	111,651	186,771	54.51	17,744,480.08
Share-Holding Corporations Limited	652	6.61	97,948	174,230	54.60	12,919,296.72
Private Enterprises	1,860	18.86	185,845	338,402	50.80	15,858,495.53
Private-Funded Enterprises	305	3.09	31,220	59,781	52.16	3,051,967.92
Private Partnership Enterprises	1,955	19.83	270,856	469,375	52.35	28,699,419.16
Private Share-Holding Corporations Limited	237	2.40	33,275	59,179	55.08	3,365,765.73
Other Enterprises	642	6.51	135,930	246,550	61.82	30,918,900.25
Enterprises with Funds from Hong Kong, Macao, and Taiwan						
Joint Ventures Enterprises	70	0.71	18,368	27,541	61.94	4,440,670.79
Cooperative Enterprises	26	0.26	7,210	10,483	56.86	1,523,758.96
Enterprise with Sole Investment	80	0.81	21,183	32,046	57.68	5,456,138.78
Share-Holding Corporations Limited	14	0.14	3,107	4,276	56.32	934,682.65
Foreign-Funded Enterprises						
Joint-Venture Enterprises	86	0.87	20,991	31,596	58.03	5,415,546.06
Cooperation Enterprises	22	0.22	6,907	10,232	59.69	1,534.297.63
Enterprises with Sole Funds	60	0.61	15,990	24,266	56.78	3,152,721.54
Share-Holding Corporations Limited	21	0.21	5,326	7,764	68.02	2,158,311.40
Star-Rated Hotel						
Total	9,861	100	1,420,489	2,482,841	54.73	202,726,010.16
5-Star	800	8.11	274,554	418,259	58.57	76,370,719.57
4-Star	2,363	23.96	470,125	793,504	55.62	70,385,730.62
3-Star	4,856	49.24	548,906	1,009,713	52.52	48,315,870.13
2-Star	1,771	17.96	123,760	252,163	52.37	7,537,931.60
1-Star	71	0.72	3,144	9,202	52.18	115,758.23

Source: The Yearbook of China Tourism Statistics (2017)

State-owned enterprises consisting of 2,254 hotels account for 24.9% of total 9,861 star-rated hotels in China, revealing the major type of ownership in the Chinese hotel industry. Yu and Gu (2005) conducted a SWOT analysis on the hotel industry in China and found that 5,061 out of 8,880 star-rated hotels or 57% of the hotels in China were state-owned until 2002. Although the percentage of state-owned hotels decreased to 22.86% for 2016 as shown in Table 1.5, the state-owned enterprises are still the largest group in the Chinese hotel industry. Furthermore, Yu and Gu (2005) also pointed out that a major drawback of state-owned enterprises is that the management and ownership are often confounded. Hence, bureaucratic controls are often inevitable in a state-owned ownership, which often leads to management deficiencies, lack of innovation, and low operating efficiency. Moreover, wherein the major distributions of 4 and 3 star-rated hotels mirror the middle-class boom in China as shown in Table 1.5. The Swiss bank pointed out that Chinese middle class reached 109 million which outnumbered that of the U.S. (92 million) in 2015 (Zhang, 2015). Chinese hotel firms continually penetrate different market segments by diversifying products with different tiers of markets. The emergence of domestic hotel groups began to internationalize their operations by investing in overseas markets, whereas the international groups carried on the expansion in China (Gu et al., 2012). For instance, Shanghai Daily reported that Hilton Worldwide intends to open 120 new properties in China before 2017 as it taps the growth of gateway cities and other second-tier cities to boost their income. Another fact is that the increasing number of business trips in China drives the growth of the business market segment as forecasted to outperform the number of business trips in the United States (Gebhart, 2011).

1.3.2 Overview of Chinese publicly-traded tourism firms

As shown in the report on Chinese publicly-traded tourism firms' development published by the China National Tourism Administration (2016), there are 70 such firms traded on different stock markets worldwide; five firms are traded overseas (U.S. stock markets, NAADAQ and NYSE); five firms are traded in the Hong Kong Stock Exchange (HKSE) and another 60 firms are traded in the domestic stock markets. The total market values of the traded tourism firms in the different stock exchanges are presented in Figure 1.3. Among 60 such firms, 25 are traded in the main board (total market value 236 billion (CNY); five are traded in the Small and Medium Enterprise (SME) board (total market value 35 billion CNY); two are traded in the Growth Enterprise Market (GEM) (total market value 37 billion CNY); and the remaining 28 are traded in the new over-the-counter (OTC) market (total market value 48.8 billion CNY). Here, the Chinese publicly-traded tourism firms in the domestic stock markets were categorized as hotel firms, tourism attractions, and travel agency, according to their main tourism-related businesses.

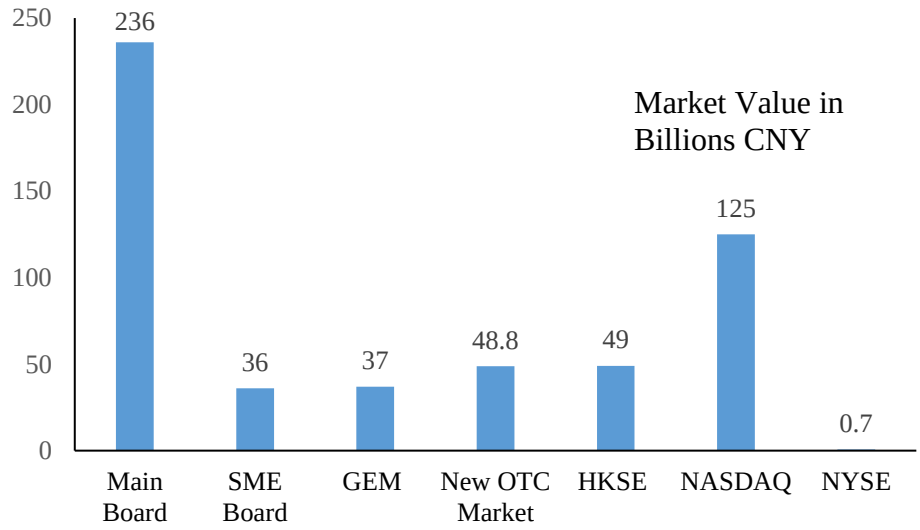

Figure 1.3 Overview of market value of Chinese publicly-traded tourism firms

Note: market value was as of May 2, 2017.

1.3.2.1 The sector of tourism attraction

In 2016, the total revenue of publicly-traded tourism attraction firms reached 14.8 billion CNY, an increase of 15% in comparison with 2015. In general, as the traded tourism attractions firms have unique tourism resources and sound reputations and their main sources of revenues are derived from offering transportation within sites and selling tickets, they are more stable in gaining revenue and maintaining firm performance. As shown in Figure 1.4 and Figure 1.5, among them, the Song Cheng Performance Development Co., Ltd. has the highest revenue and net income in 2016, which are 2.6 billion CNY and 0.9 billion CNY, respectively. Beibu Gulf Port Co., Ltd. experienced the fastest growth in terms of revenue and net income, which increased by 152.50% and 138.43%, respectively, in comparison with 2015. Other than Song Cheng Performance Development Co., Ltd. and Beibu Gulf Port Co., Ltd., China United Travel Co., Ltd., Haichang Holdings Ltd., and Anhui Jiuhuashang Tourism Development Co., Ltd. also showed increased revenues of 32.78%, 13.30%, and 13.2%, respectively, compared with the revenues posted in 2015. However, the Zhangjiajie Tourism Group Co., Ltd. and Yunnan Tourism Co., Ltd. encountered slight decreases in their revenues in 2016. The report on the development of Chinese publicly-traded tourism firms released by the China National Tourism Administration (2016) highlighted two major acquisitions in the sector of tourism attractions, which explained why Song Cheng Performance Development Co., Ltd. and Beibu Gulf Port Co., Ltd. showed rapid growth in their revenues. First, the former acquired 6.CN Live Platform with 2.6 billion CNY. The new business model of online live performance and show was successfully combined with the traditional business model that Song Cheng Performance Development Co., Ltd. had initially implemented, namely, theme park plus shows and performance. Second, Beibu Gulf Port Co., Ltd acquired the

Mount Longhu scenic area and Bohai Chang Tong Ltd., which operated ferry services from Peng Lai City to Chang Island. These acquisitions ultimately became cash cows for Beibu Gulf Port Co., Ltd.

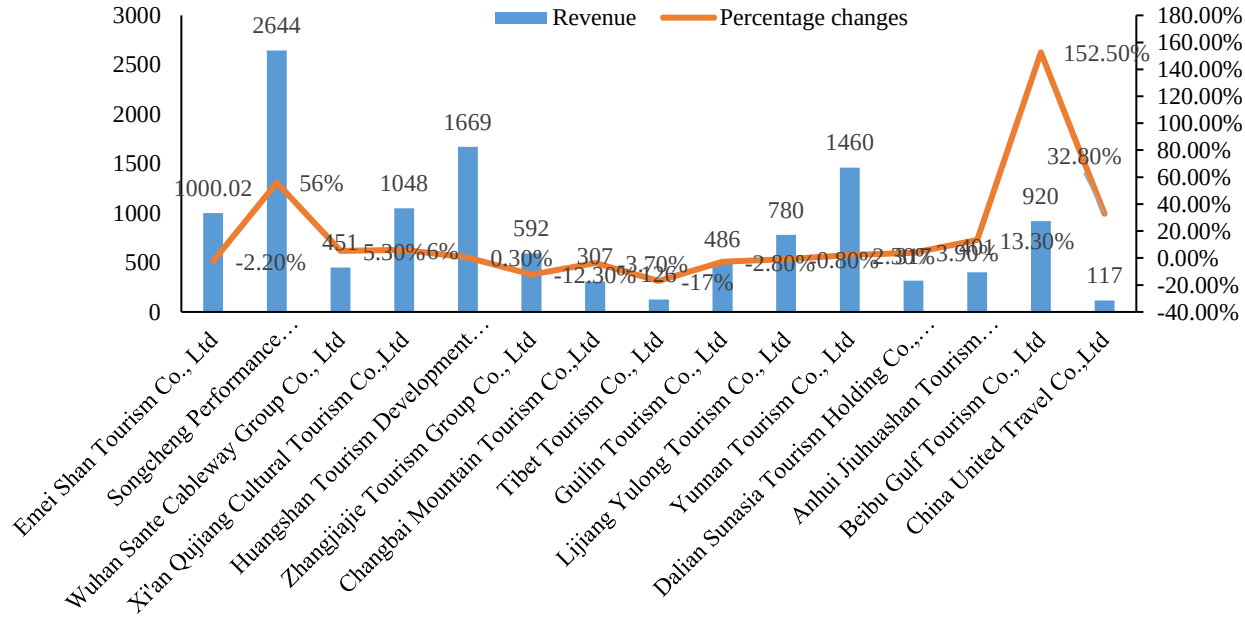

Figure 1.4 The revenue of publicly-traded tourism attraction firms

Note: the source of data was from the firms' 2016 financial statements; revenue in million CNY.

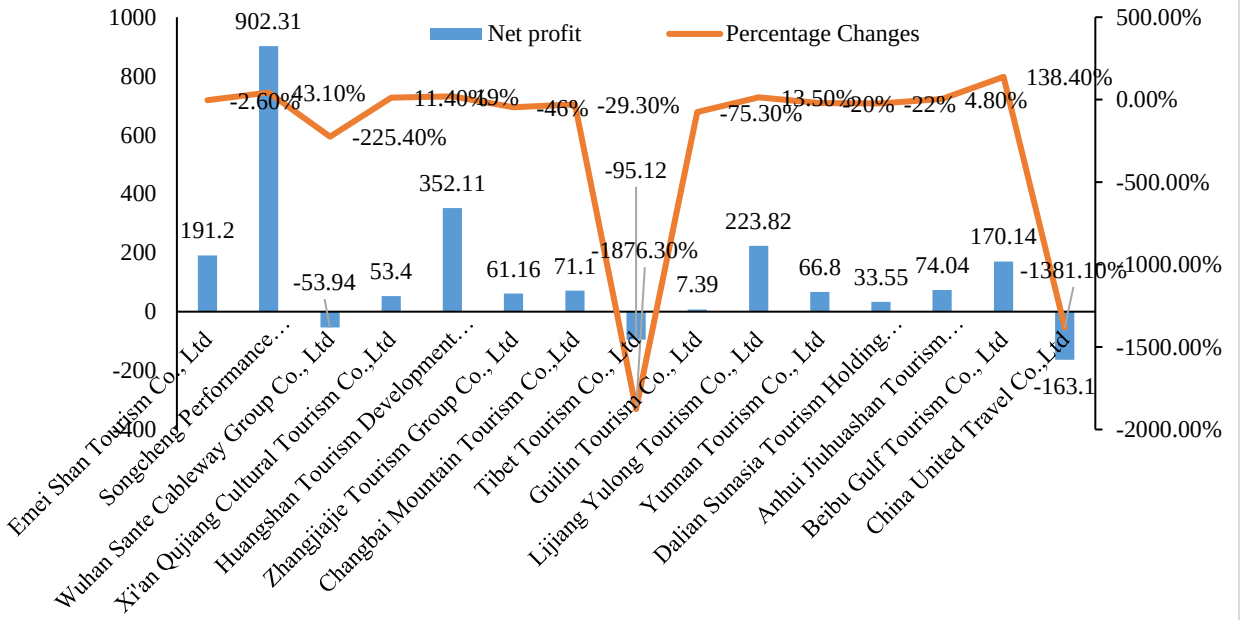

Figure 1.5 The net profit of publicly-traded tourism attraction firms

Note: the source of data was the firms' 2016 financial statements; net profit in million CNY.

1.3.2.2 The sector of travel service agency

In 2016, the total revenue of all traded travel agency firms reached 54.4 billion CNY, which increased by 7.7% compared with that posted in 2015. However, the net profit decreased by 13.36% comparison with that in 2015, which was 3.08 billion CNY. As shown in Figure 1.6, the overall profitability of all traded travel service agency firms was relatively low. Among them, the firm that generated the highest revenues was China International Travel Service Co., Ltd. (CITS), which made 22.3 billion CNY in 2016. However, the main profits did not come from its travel service segment but from its duty-free retail shops located at different airports and tourism attractions. The second-highest revenue posted was that of the China Youth Travel Service Co., Ltd. (CYTS), which made 10.3 billion CNY in 2016. In its revenues, its affiliated tourism attraction, Wu Village, contributed to 1.3 billion CNY. Furthermore, an outbound

tourism-focused travel service firm, Utour Group Co., Ltd., made 10 billion CNY in 2016. They focus on tailor-made and upper-class outbound tours and become a leader in the high-end travel market in China.

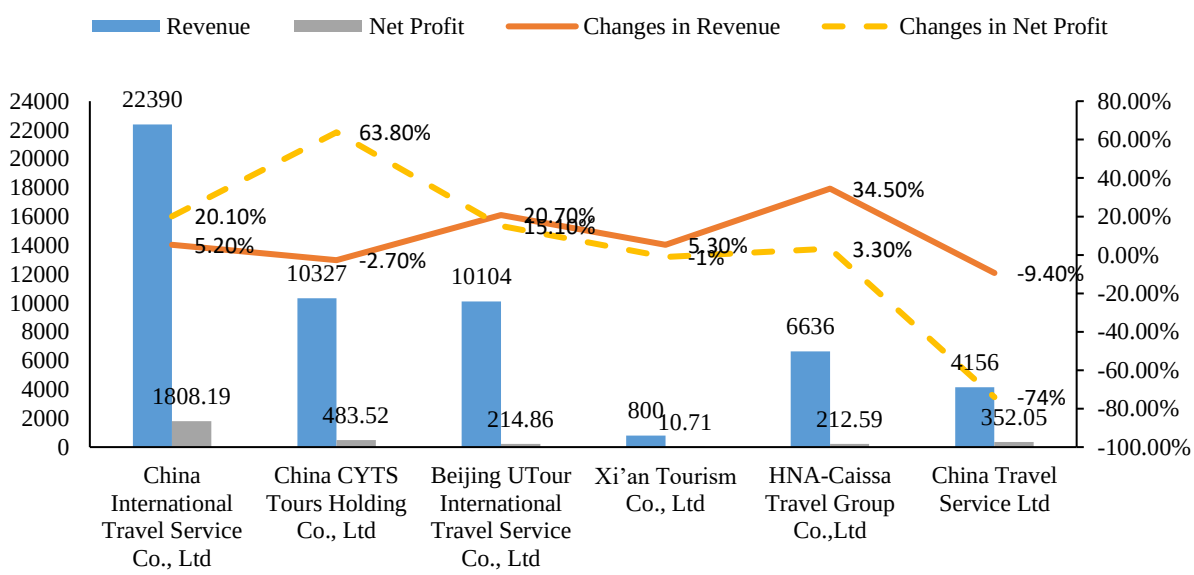

Figure 1.6 The reveuen and net profit of publicly-traded travel agency firms

Note: the source of data was from the firms' 2016 financial statements; the number of revenue and net profit in million CNY.

1.3.2.3 The sector of hotel firms

Among the Chinese traded hotels, the top three firms in terms of revenues are the Shanghai Jin Jiang Hotel Group, the BTG Hotel Group, and the Huazhu Hotel Group, earning 13.6 billion CNY, 6.54 billion CNY, and 6.52 billion CNY, respectively. In 2016, apart from the top three hotel firms, other firms' operating performance is relatively low even though the total revenue (28.17 billion CNY) of all traded hotel firms increased by 69% compared with that in 2015 and the total net income of all traded hotel firms reached approximately 2 billion CNY in 2016 (showing an increase of 35.53% compared with that in 2015). As shown in Figure 1.7, the overall profitability of all traded hotel firms is relatively low.

Furthermore, in 2016, several acquisitions in the hotel sector were also noticed. First, the BTG Hotel Group acquired the Home Inn Group and increased the total number of hotels to 3,400 and the total number of rooms to 370,000, so that the total revenue of the BTG Hotel Group was tripled in 2016. Second, the Shanghai Jin Jiang Hotel Group acquired the Plateno Hotel Group, which led to its revenue increasing by 91.19%. At the end of 2016, the Shanghai Jin Jiang Hotel Group also acquired the Vienna Hotel Group and the Shenzhen Baijiacun Restaurant Chain Co., Ltd, by 80% equities, respectively.

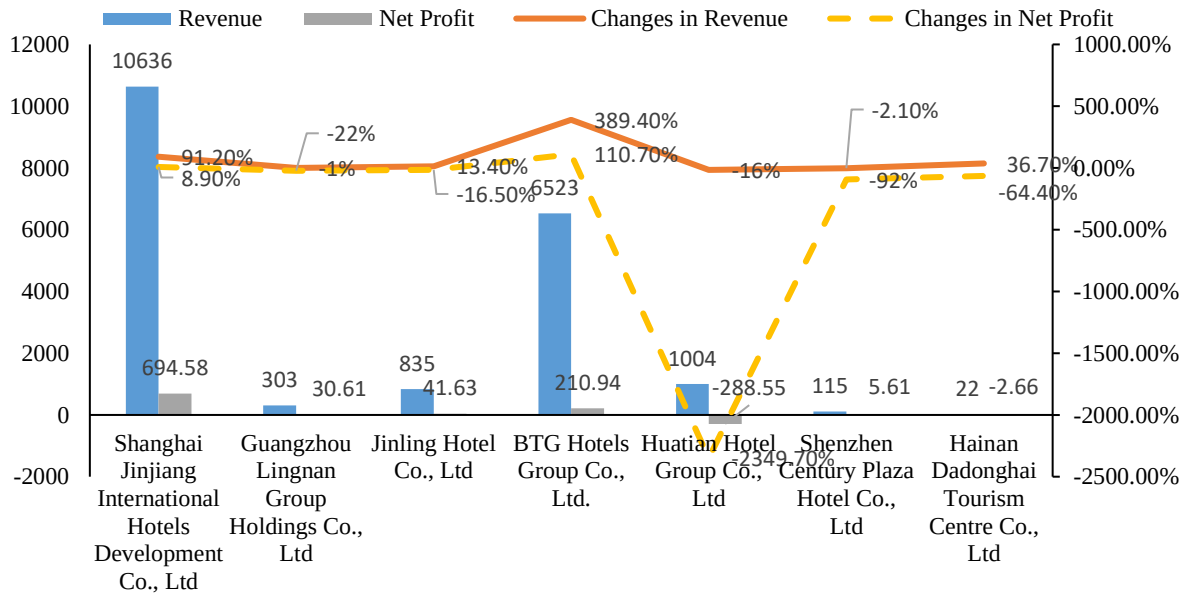

Figure1.7 The revenue and net profit of publicly-traded hotel firms

Note: the source of data was the firms' 2016 financial statements; the number of revenue and net profit in million CNY.

1.3.3 Diversification in Chinese tourism firms

The diversification of Chinese publicly-traded firms and Chinese institution transitions has an interwoven connection as the latter has changed formal and informal rules of the game and led China to suffer from the lack of resources, fragmentation of domestic markets, and high uncertainty in the market (Meyer, 2008; Peng, 2003; Shen

et al., 2011). Meyer (2008) pointed out that although China is one country, it contains many types of economies. China decentralized its economy savings at the early 1980s, and the decentralization evolved into several geographic economies, such as Changjiang Delta, Pearl River Delta, the Beijing-Tianjin-Hebei metropolitan area, and so forth. The competition of GDP growth occurs among provinces through the establishment of barriers for inter-province trade (Li & Zhou, 2005). The fragmentation of domestic markets creates opportunities for Chinese firms to expand their businesses into different regions and areas.

The extant literature (e.g., Wiersema and Bowen, 2008) claimed that product diversification and geographic diversification can well-explain the expansions and scope of a firm's business operations in the market. Therefore, product and geographic diversification are viewed as the two crucial dimensions of diversification (Shen et al., 2011). Peng (2003) explained that Chinese firms utilize product diversification as a strategic response to the high uncertainty caused by Chinese institution transitions. Product diversification benefits Chinese firms in attracting more consumers by satisfying their differentiated needs and establishing a brand image (Shen et al., 2011). The fragmentation of domestic markets empowers Chinese firms to diversify geographically. In China, firms with high domestic geographic diversification can successfully decentralize the risks derived from the significant changes of different regions (Grant, 1987). Furthermore, Qian et al. (2010) found that geographic diversification helps Chinese firms save on the managerial costs of coordination, transportation, communication, distribution across different provinces and realize the economies of scale.

When it comes to diversification of Chinese publicly-traded firms, Fan et al. (2008) explored a question on why publicly-traded Chinese firms are more diversified

than companies in other countries, such as France, Germany, India, Italy, Japan, UK, and Brazil. Although they found that there was no evidence of countries with developing economies being more diversified than countries with developed economies, they found that most of the publicly-traded firms in these above-mentioned countries tended to be more focused rather than become more diversified, except Chinese publicly-traded firms. In fact, Fan et al. (2008) explained that the diversified format was common in Chinese publicly-traded firms and that Chinese state-owned firms diversified their businesses even more aggressively than other Chinese publicly-traded firms.

Chen (2014) found that diversification is a pervasive phenomenon in the Chinese tourism industry. Firms in this industry commonly operate other businesses in various industries, such as the industry of real estate, the transportation service industry, the industry of commodity trading, attraction operation and management, and landscape architecture. In Chen's study (2014), the majority of Chinese tourism firms gained their revenue from tourism-related activities, such as scenic spot ticketing sales, cable car transport service, travel agency service, room service, food and beverage service, and entertainment service. Until 2016, in the Shanghai Stock Exchange (SHEX) and the Shenzhen Stock Exchange (SZEX), a total 35 tourism firms are publicly-traded in the stock markets. These involve related industries, such as the hotel industry (e.g., Huatian Hotel Group Co., Ltd; SZX, 000428), attraction operation and management (e.g., Guilin Tourism Co., Ltd; SZEX, 000978), and travel agencies and package tour industry (e.g., China United Travel Co., Ltd; SHEX, 600358). Wang and Xu (2009) investigated the relationship between the diversification strategy and operating performance of Chinese tourism firms from 2001 to 2007. They also compared publicly-traded hotel and tourism attraction firms

in terms of the relationship of diversification and performance and subsequently determined that diversification benefits the firm performance of such firms, with no significant relationship found in the hotel firms in China. Table 1.6 summarizes the Chinese tourism industry studies investigating the relationship between diversification and performance.

Table 1.6 Summary of Chinese tourism industry studies on diversification and performance

Study/Reference	Sample	Diversification Measure	Performance Measure	Major Findings
Liu and Wang (2007)	20 traded tourism firms from 2001-2004	Herfindahl index Number of segments	Tobin Q	Positive relationship
Wang and Xu (2008)	20 traded tourism firms from 2001-2006	Specialization ratio Herfindahl index Entropy index	ROE	Positive relationship
Jin and Deng (2008)	19 traded tourism firms from 2005-2007	Herfindahl index	ROE EPS Tobin Q	No relationship found
Xiao (2008)	20 traded tourism firms from 2001-2007	Herfindahl index Entropy index Number of segments Diversification dummy variable	ROE Tobin Q	The positive relationship between diversification and ROE no relationship with Tobin Q
Fan (2009)	20 traded tourism firms from 2005-2007	Herfindahl index Number of segments	ROA ROE Tobin Q	Positive relationship
Wang and Xu (2009)	20 traded tourism firms from 2001-2007	Herfindahl index Entropy index	ROE	Positive relationship
Huang and Huang (2011)	15 traded tourism firms from 2000-2009	Entropy index	Developed Performance indicators in different categories of ratios	Positive relationship found
Duan and Zhou (2012)	15 traded tourism firms from 2006-2009	Herfindahl index Number of segments Entropy index	ROA	Positive relationship supported

Duan and Wei (2013)	41 M&A tourism firms from 2002-2008	Diversification dummy variable	Developed Performance indicators in different categories of ratios	Related diversification outperforms
Chen (2013)	25 tourism firms from 2001-2011	Entropy index	ROA, ROE, EPS, Tobin Q	Negative relationship supported
Chen (2014)	25 tourism firms from 2001-2012	Entropy index	ROA, ROE, EPS, Tobin Q	The positive relationship between related diversification and performance Unrelated diversification has a negative effect on the relationship between related diversification and performance

Source: Adapted from Chen (2014, p.4)

Geographic diversification is one of the common diversification strategies of Chinese public traded tourism firms which include hotel firms, tourism attraction management firms, and travel agencies. Nearly half of them gained revenues from other provinces of China apart from their base province. Kim and Kim (2005) mentioned that the effect of geographic diversification on performance may be more outstanding for hotel firms than firms in other industries. For instance, hotel firms can take advantage of market power across diverse geographic markets because the hotel industry is highly fragmented in an environment with intensive competitions, (Basham & Kwon, 2009). Barney and Hesterly (2008) argued that a hotel firm with geographic diversification can build a strong and dominant position in gaining a greater bargaining power. Furthermore, the nature of the hotel industry is highly affected by the seasonality and the sensitiveness of environment changes and local regulations (Barney & Hesterly, 2008; Schmidgall, 2006). Kang and Lee (2014) stated

that a greater portfolio effect can be caused via a geographic diversification for the hotel firms than other service industries. Hence, the geographic diversification strategy is critical in mitigating the variance of return or risk for hotel firms which are highly affected by local contingency factors and seasonality. However, research on the geographic diversification of Chinese tourism firms is limited, and a better understanding of the geographic diversification strategies is in need.

1.4 Problem statement

The relationship between product diversification strategy and firm performance has been studied by many scholars in different disciplines. Various types of relationships between product diversification strategy and firm performance have been determined. On the one hand, the positive relationship between product diversification strategy and firm performance has been supported by research (Bodnar, Tang, & Weintrop, 1997; Han, Lee, & Suk, 1998; Kuppuswamy & Villalonga, 2015; Morck & Yeung, 2003). On the other hand, the negative relationship between product diversification strategy and firm performance has also been supported by numerous studies (Denis, Denis, & Yost, 2002; Grass, 2010; Hill & Hansen, 1991). A non-linear relationship supported between the two was also found (Palich, Carini, & Seaman, 2000; Ruigrok & Wagner, 2003; Tallman & Li, 1996). The inconsistent influences of product diversification on firm performance lead to further research on this topic. Christensen and Montgomery (1981) stated that the inconsistent results of pertinent research on the influence of diversification on firm performance may be attributed to the neglected variable of market structure. Datta, Rajagopalan, and Rasheed (1991) pointed out a series of organizational factors that play important roles in implementing and institutionalizing diversification strategies. Prescott (1988) demonstrated that environments, as measured by the characteristics of market structures, moderate the

strength of strategy and performance. The intervening factors on the relationship between product diversification strategy and firm performance deserve the attention for further research. Considering the limited knowledge on the influences of market structure and organizational factors on the relationship between product diversification strategy and firm performance in the tourism industry, this thesis focuses on how market structure and organization factors influence the relationship of product diversification strategy and firm performance.

In the hotel industry, a few studies have investigated the effect of market structure on the relationship between a strategy and firm performance. The importance of industry-specific factors toward firm performance often attracted attentions from managers, researchers, and investment analysts (Sheel, 2016). The lack of a full understanding of the effect of market structure on a strategy and firm performance causes a growing interest in the study of the relationship among market structure, strategies, and firm performance. For the tourism industry, one of the common business-level strategies is diversification. Only a few studies have been recently focused on diversification strategy in hotels and tourism fields (Lee et al, 2011; Lee & Jang, 2007; Koh, Lee, & Boo, 2009). Similarly, research on the effect of diversification strategy on firm performance is limited in the context of China's tourism industry, and even less attention has been paid to the effect of market structure.

The existing literature indicated numerous inconsistent outcomes regarding the effect of diversification strategy on firm performance. Lee et al. (2011) investigated the influence of segment diversification on the risk-adjusted performance of hotel firms, and the results showed that a moderate segment diversification maximizes a firm's risk-adjusted performance. Lee and Jang (2007) examined the relationship between market diversification strategy in hotel firms and corporate

financial performance and stability, and their results demonstrated that the market diversification strategy cannot function as an effective approach to improve financial performance of hotel firms. The two common diversification strategies implemented by tourism firms in China are product and geographic diversification. Table 1.6 shows that the relationship between product diversification and firm performance has been explored without consistent results. In fact, geographic diversification has rarely been studied in the context of Chinese tourism-related industries. Therefore, as two common types of diversification strategies implemented by Chinese tourism firms, both product and geographic diversification strategies are covered in this study. To consider product diversification and geographic diversification independently rather than considering it concurrently might blur the impact of a certain type of diversification strategy on firm performance (Kang, 2011). That is, merely considering one type of diversification strategy on firm performance when the firm actually has two or more strategies is likely to produce biased results on the relationship between diversification strategy and firm performance (Hilman, 2015). Accordingly, this study addresses more than one type of diversification strategy by assessing the moderating effect of geographic diversification on the relationship between product diversification and firm performance.

Additionally, Datta et al. (1991) mentioned that organizational factors are particularly important from the diversification strategy implementation perspective. Studies examining the effects of organizational factors on the relationship between diversification strategy and performance of a tourism firm remain scarce. Jahera et al. (1984) found that the relationship between the degree of diversification and performance depends on firm size. Grinyer et al. (1980) concluded that there is no significant relationship between the degree of diversification and ROI in either

functionally or divisionally organized firms, which means the type of organizational structure has no effect on the relationship between diversification and performance. According to Tecc (1982), organizational factors may play key roles in implementing a diversification strategy, such as human capital, the flatness in organizational structure, and the relatedness in business. For instance, Bontis and Serenko (2007) highlighted that a firm can leverage inimitable humane capital to sustain competitive advantage in a long-term and to ensure the success of a strategy. Since the importance of organizational factor on the relationship between diversification strategy and firm performance has been rarely studied in hotel and tourism field and this study intends to determine the effect of organizational factors on the diversification - performance relationship in the context of tourism.

Pan (2005) suggested that several studies focusing on multiple industries support a positive relationship between market concentration, as one of the characteristics of market structure, and firm profitability, as a common measurement of performance (Bain, 1951, 1959; Caves & Uekusa, 1976; Neumann et al., 1979; Porter, 1981; Weiss, 1974). However, intra-industry studies are rarely conducted. These studies are commonly observed in the following service industries: the banking industry (Belkhaoui et al., 2014; Chirwa, 2003; Goldberg & Rai, 1996) and the insurance industry (Bajtelsmit & Bouzouita, 1998; Chidambaran et al., 1997). However, there is a limited number of studies in the tourism industry (Davies, 1999; Pan, 2005). Thus, this study could enrich the existing literature on the effects of market structure on diversification and firm performance in the tourism industry.

In brief, first, given the previous inconsistent results regarding the product diversification-firm performance relationship, a better understanding of the relationship between product diversification and firm performance in Chinese tourism

industry is needed. Second, as the product and geographic diversification strategies are implemented by Chinese tourism firms commonly, the effect of geographic diversification on the product diversification-firm performance relationship is also considered in this study. Third, since organizational factors may play vital roles in implementing different diversification strategies, this study also investigates the effects of some organizational factors on the relationship between product diversification strategy and tourism firm performance in the Chinese tourism industry. Lastly, the lack of studies on the influence of market structure on the relationship between diversification strategy and firm performance has been noticed in the Chinese tourism industry. Then, the problem statement is that which factors can affect the relationship between product diversification strategy and firm performance. Therefore, the following questions are given to address the problem statement in detail:

1. What is the relationship between product diversification and firm performance?
2. How does geographic diversification moderate the relationship between product diversification and firm performance?
3. What are the organizational factors that can affect the relationship between product diversification strategy and firm performance?
4. How does market structure influence the relationship between the product diversification strategy and firm performance?

1.5 Research objectives

In line with the abovementioned research problem and questions, this study aims to analyze the effects of market structure, organizational factor as well as the effect of geographic diversification in affecting the product diversification-firm performance

relationship in the context of China's tourism industry. To be specific, this study seeks to achieve the following objectives:

1. Identify the relationship between product diversification and the performance of Chinese publicly-traded tourism firms;
2. Identify the influence of geographic diversification on the relationship between the product diversification and the performance of Chinese publicly-traded tourism firms;
3. Identify the influences of organizational factors on the relationship between the product diversification strategy and the performance of Chinese publicly-traded tourism firms; and
4. Identify the influence of market structure on the relationship between the product diversification strategy and the performance of Chinese publicly-traded tourism firms.

To achieve the above research objectives, four major categories of variables are established: variables representing the market structure and characteristics, organizational factors, variables of product and geographic diversification strategies, and variables measuring tourism firm performance.

1.6 Study context

There is a limited number of studies that focus on the effect of market structure and organizational factor on the relationship between product diversification strategy and firm performance, which is similar to the research on the effect of geographic diversification strategy on the product diversification -firm performance relationship in the Chinese tourism context. The research target of this study includes all publicly-traded firms in the Chinese tourism industry.

Furthermore, under the U.S. context, there have been a few discussions focusing on the relation between diversification and performance in the hospitality industry (Kang & Lee, 2014; Lee, 2008; Lee et al, 2011; Tang & Jang, 2010). Less is known about the diversification-performance relationship in the context of China tourism. The study is carried out in a developing economy, China. This study fills in the gap by considering the effects of market structure and organizational factor on the relationship between product diversification and firm performance in the tourism industry and in a developing economy.

Moreover, brands, geographic locations, products, and market segments are the common diversification strategies identified in tourism-related industries (Lee et al., 2011; Yeh et al., 2012). This study focuses on product and geographic diversification as two common diversification strategies that are implemented by Chinese publicly-traded tourism firms.

1.7 The significance of the study

This study contributes both theoretically and practically. The present study aims to fill the research gaps and to supplement the deficiency of literature by assessing the moderating effects of market structure and organizational factors on the relationship between the product diversification strategy and firm performance of publicly -traded tourism firms in China. The relevant research topics of diversification, performance, and market structure have been sufficiently examined in other industries, such as banking (Ayadi & Ellouze, 2013; Beck, Demirguc-Kunt, & Levine, 2006; Belkhaoui, Lakhal, Lakhal, & Hellara, 2014; Maniatis, 2006; Seelanatha, 2010) and manufacturing industries (Adner & Zemsky, 2016; Lampel & Giachetti, 2013; Rumelt, 1974, 1982). However, we still have a limited understanding of the product

diversification-firm performance relationship in tourism industry, particularly in the context of China tourism, which calls for a closer examination of the factors influencing the relationship between product diversification and firm performance. Thus, this study contributes to the existing literature on the relationship of product diversification-firm performance and provides managerial implications to industry practitioners and policy makers in China's tourism industry.

1.7.1 Academic contributions

This research contributes academically by enriching the literature on the effects of market structure and organizational factors on the relationship between tourism firm product diversification strategy and firm performance in the context of China, which is one of the major emerging economies in the world. Hence, the major academic contributions of this study are as follows.

First, this study empirically examined the positive effect of product diversification on firm performance in Chinese tourism firms. Additionally, the nonlinear (inverted U-shape) relationship between product diversification on firm performance was first found in this study. As several Chinese scholars also identified a negative effect of product diversification on firm performance (e.g., Chen, 2013), the nonlinear relationship found between these two constructs is meaningful because the optimal levels of product diversification were captured in the study in the Chinese context.

Second, the diversification strategies varied in terms of location, product, business, brand, and market segment (Newell & Seabrook, 2006). Although the two common diversification strategies in tourism-related industries, namely, geographic and product diversification, have already been explored by several scholars in

industrial multinational enterprises (Bodnar et al., 1997; Han et al., 1998; Kuppuswamy & Villalonga, 2015; Morck & Yeung, 2003; Tallman & Li, 1996), empirical studies in tourism-related industries remain limited. No consensus on the relationship between a product or geographic diversification and firm performance has been noticed (Hilman, 2015). Gleason, Mathur, and Wiggins (2003) mentioned that the failure to consider the interaction impacts of a product and geographic diversification might mislead the effect of each diversification strategy on performance. In addition, the interaction impacts of a product and geographic diversification on firm performance deserve further articulation in tourism and hospitality industries (Capar & Kotabe, 2003; Kang, Lee, & Yang, 2011). In fact, there are limited empirical studies focusing on the moderating effect of geographic diversification on the relationship between product diversification and firm performance in tourism-related industries. Therefore, this study aims to investigate the role of geographic diversification on the linkage between product diversification and firm performance, which exactly enriches the literature of the effect of geographic diversification in a tourism context. This study contributed to the literature that focuses on geographic diversification domestically, that is, crossing different provinces within China. This study differs from other studies that focused on geographic diversification across country borders, which is known as international diversification or geographic diversification of multinational enterprises. Without the intervention of different institutional factors of geographic diversification crossing country borders, the effect of domestic geographic diversification is also meaningful because the Chinese economy is large and known as the world's second-largest economy. This study fills the gap in the literature on geographic diversification in China.

Lastly, this study applied the structure-conduct-performance (SCP) paradigm into the tourism industry. The SCP paradigm originally represents the nexus of the structure that affects firm behavior in an industry, which in turn influences firm performance; this process is regarded as one of the baseline theories in this study. The SCP paradigm is an industrial organization economics theory that has been applied in the hotel industry (Davies, 1999; Tung, Lin, & Wang, 2010). This study's finding regarding the positive moderating effect of market structure on the relationship between product diversification and firm performance can be leveraged to propose a new nexus in which market structure, as a moderator of the relationship between firm behavior and firm performance, serves as a novel nexus in the SCP paradigm. In addition, this study also enlarged the horizon of the application of resource-based theory, modern portfolio theory, and resource dependence theory in tourism context.

1.7.2 Practical contributions

Decision makers may have a better understanding that the market environment may influence the consequences of strategic choices on firm performance. Furthermore, as product diversification has been commonly implemented in Chinese publicly-traded tourism firms, pertinent findings contribute to the understanding of the effect of product diversification under the market structure and organizational factors, which aid developers to increase the possibility of success of implementing product diversification under different circumstances.

For tourism firms' owners, to have a better understanding about the relationship between product diversification and firm performance helps firms increase market share and profitability. Especially, the identified optimal levels of product diversification in this study offer them references to make diversification-related decisions. Product relatedness, as one of the moderators in the relationship

between product diversification and firm performance, needs to be considered as a principal factor while implementing product diversification. Specifically, product diversification has a positive effect while firms focus on unrelated businesses. To increase the diversity of products in unrelated businesses can improve firm performance.

For tourism firms' branch developers, the significant and positive effect of product diversification on firms' market-based performance in a group of firms with geographic diversification implies that diverse geographic locations or local markets benefit firms with regard to the market-based performance. For founders of new firms, this research provides good reference information for setting up their organizational structure. With regard to the empirical result of the moderating effect of flatness of organizational structure, a significant and positive effect of product diversification was found in the group of tourism firms with flat structures rather than tall structures, which implies that a flat structure is beneficial to implementing product diversification because of the ease of the creation of synergy, coordination, communication, and information dissemination among all business units.

1.8 Explanations of key terms in this study

The key terms used in this study are defined and presented in Table 1.7.

Table 1.7 Explanations of key terms

Key Terms	Explanations	References
Market Structure	Market structure is explained as the characteristics of a market organization, such as a number of consumers, the degree of market power, market share, market concentration, market growth, market profitability and so forth. In this study, it is equivalent to "industry structure".	(Scherer & Ross, 1990) (Christensen & Montgomery, 1981)
Organizational factors		

	Organizational factors are explained as the ways of an organization being defined, such as firm size, firm resources, and capabilities.	(Chan, Finnegan, & Sternquist, 2011)
Related Diversification	Related diversification is a strategy while a firm operates a number of different business units, all of which are in related industries.	(Rowe & Wright, 1997)
Unrelated Diversification	Unrelated diversification is a strategy while a firm diversifies into substantively different areas or industries or sectors that have rare resources shared in common.	(Rowe & Wright, 1997)
Product Diversification	Product diversification is a strategy while a firm operates in more than one industry or product market. For tourism firms, different revenue generated from different industries such as travel agency industry, hotel industry, food and beverage industry, and so forth.	(Anabila, 2013) (Su & Tsang, 2015)
Geographic Diversification	Geographic diversification is a strategy that the operations of a firm in multiple geographic locations and markets.	(Barney & Hesterly, 2008)

1.9 Organization of the study

This thesis is composed of six chapters: introduction, literature review, methodology, results, discussion, and conclusion. The first chapter starts with the research purpose and background information that provides an overview of the Chinese inbound, outbound, and domestic tourism markets and of the Chinese hotel industry; this is followed by a summary of implemented diversification strategies by Chinese tourism firms. The research problem and objectives are also identified in Chapter One. Furthermore, the context of this study and significance of the research are indicated as well. The second chapter provides a comprehensive literature review, including pertinent theoretical and empirical studies. The theoretical literature covers the

baseline theories used in this study. Prior empirical studies on the diversification strategy and tourism firm performance are also included in Chapter Two. Lastly, the hypothesized relationships are indicated at the end of that chapter. Chapter Three presents the research methodology as well as the different measures of variables of this study. The research design, model specification, and data collection are also described in that chapter. Chapter Four presents the results of the study. Then, the major findings of this study and how they are related to the existing studies are discussed and elaborated in Chapter Five. Theoretical and practical implications are also demonstrated in this chapter. The final chapter would be the conclusion of this thesis including the conclusion of major findings, limitations of this study, and recommendations for future research.

1.10 Summary of the chapter

This chapter has delivered detailed information to build up an introduction to this thesis. The chapter starts with the purpose of the study which aims to analyze the effects of geographic diversification, market structure and organizational factor on the relationship between product diversification and Chinese tourism firm performance. This was followed by the background information that briefly introduced the domestic tourism market, the outbound tourism market, the inbound tourism market, the hotel industry in China, and diversification of Chinese tourism firms, which inspired this study.

After the background information, the research problem was clearly identified and followed by research questions and research objectives. Furthermore, the context of this study was defined to focus on Chinese publicly-traded tourism firm. The next section demonstrated the significance of the study which consists of academic

contributions and practical contributions. Additionally, definitions of key concepts that are the most frequently involved in this study were also provided. Lastly, the organization of the entire thesis was outlined. The next chapter illustrates the extensive literature review related to diversification, the different baseline theories, and the developed hypotheses.

CHAPTER 2. LITERATURE REVIEW

2.1 Chapter introduction

This chapter demonstrates a critical review of the relevant literature on definitions of diversification, motives to diversify, and diversification measures. It also provides the theoretical background, the developed hypotheses, and the conceptual framework for this study. Under the theoretical background, the modern portfolio theory, resource-based theory, resource dependence theory, and SCP paradigm are introduced.

Afterward, the developed hypotheses are provided, which are aligned with the research objectives of this study. The critical review of empirical studies about the relationship between product diversification and firm performance as well as the effect of geographic diversification on the relationship between product diversification and firm performance is demonstrated. Furthermore, the effects of three selected organizational factors on the relationship between production diversification and firm performance are also included. Lastly, the effect of market structure on the relationship between product diversification and firm performance is hypothesized based on the nexus of a market environment influencing the relationship between a strategy and firm performance.

In the last section of this chapter, a conceptual framework of this study is developed to address the research problem and research objectives. Finally, a summary is provided at end of this chapter.

2.2 Diversification definition

The word “diversification” is derived from the terms diverse and diversify (Kwang, 2010). In this study, it denotes “diversification strategy” that means a corporation

operates their businesses in suitable markets and industries. The concept of diversification has several definitions, and a clear consensus about its definition is hardly agreed among researchers (Raghunathan, 1995). Ramanujam and Varadarajan (1989, p.524) defined diversity as "the extent to which firms are simultaneously active in many different businesses". Pils (2009) stated that diversification describes the scope of business activities. Furthermore, diversification is also considered as groundwork for corporate strategy (Markides & Williamson, 1994; Porter, 1981).

A pioneering study from Ansoff (1957) explained the concept of diversification as one of the strategies for growing businesses by increasing the number of product lines or targeted markets. Therefore, the four product-market strategies for business growth developed by Ansoff (1957) are the market penetration, market development, product development, and diversification, as shown in Table 2.1. Booz, Allen, and Hamilton (1985) regarded diversification as a means of expanding a business base. A firm can enlarge the business base by increasing the number of segments in which the business operates and by continuing the distribution of existing businesses within an existing number of segments (Raghunathan, 1995). Therefore, managers can affect the diversification level as they make decisions on the number of segments and on the distribution of resources within those segments (Raghunathan, 1995).

Table *2*.1 Product-market strategies for business growth

Markets / Products	M_0	M_1 M_2 M_3 …… M_n
P_0	Market Penetration	Market Development
P_1 P_2 P_3 ⋮ P_n	Product Development	Diversification

Source: Adapted from Ansoff (1957)
Notes: "P" represents a product line; "P_0" stands for existing products; "M" denotes markets for selling products; "M_0" refers to existing markets, and a pair of P and M is one type of product-market strategy.

Ansoff (1957) pioneered the definition of diversification, and Table 2.1 clearly demonstrates how a corporation grows its businesses by entering new markets with new products. Jacquemin and Berry (1979) defined product diversification in association with the degree of relatedness within all the product segments. This relatedness refers to the extent to which businesses and products share similar firm resources and skills as well as customers and technologies (Davis, Robinson, Pearce, & Park, 1992; Tanriverdi & Venkatraman, 2005). The type of diversification depends on the resources including the specificity of a firm toward a particular industry (Chatterjee & Wernerfelt, 1991; Gort, Grabowski, & McGuckin, 1985; Montgomery & Wernerfelt, 1988). Product diversification can generally be identified as two modes, namely, related and unrelated product diversification. The key distinction between related and unrelated product diversification is determined by whether a firm is diversified within or across industries through the offer of different products (Rumelt, 1974; Wrigley, 1970). Pils (2009) argued that the definition of product-market diversification is more understandable and reasonable because it can be adopted by entering new markets with new or existing products. Similarly, Iacobucci and Rosa

(2005) defined diversification as a novel entry into a new sector in which a corporation operates various businesses. Denis et al. (1997) defined diversification as the entry of a firm into a number of segments, such as single-segment and multiple segments firms. Montgomery (1994) stated that a diversified firm is visible from its businesses. To step into different industries, diversification is defined based on the number of industries in which a firm operates its businesses (Geringer, Tallman, & Olsen, 2000; Jacquemin & Berry, 1979). Therefore, the concept of diversification can be understood as a firm expanding its businesses across products, markets, industries, and segments.

2.3 Motives to diversify

Extant studies have explored the factors that drive a firm to diversify. Montgomery (1994) articulated three comprehensive perspectives to explain the motives for a firm to diversify businesses, through the lens of the market-power, resource-based, and agency views.

From the market power perspective, the consequence of diversification, rather than its causes, is often addressed by researchers. Most researchers emphasized whether diversification works efficiently or not, and less attention was paid to investigate the motives that a firm wants to diversify its businesses (Montgomery, 1994). Montgomery (1985) argued that from the market power view, diversified firms can create a collusive power in entering a new market. The major view is emphasized in this perspective because a firm strives to achieve a monopoly in the market through its strong market power to maximize profit (Cho, 2007). Gribbin (1976) mentioned that the sum of the market power in individual markets is known as conglomerate power and that diversified firms cannot behave in an anti-competitive manner if they

fail to capture the market power. Hill (1985) suggested that the greater the number of markets in which a diversified firm operates its business in a dominant position, the more opportunities for the firm to use its dominant position to set and raise products/services prices and to earn monopolistic profits. Therefore, Hill (1985) argued that diversified firms may gain more competitive advantages than non-diversified firms because the former can access a conglomerate power in different markets.

The conglomerate power was initially mentioned by Edwards (1955) who emphasized the conglomerate scale of a firm as the key source of market power. Conglomerates often create market power through different anti-competitive actions (Montgomery, 1994). In fact, these actions are often closely related to the motives for diversification (Lindström, 2005). Firms utilize the profits they gained from one market to underpin predatory pricing strategies in other markets, which is traditionally called the cross-subsidization or also known as “deep pockets” (Schleifer & Vishny, 1989). In addition, another two common anti-competitive actions that can generate the market power for firms are named mutual forbearance and reciprocal buying (Santos & Eisenhardt, 2005). Mutual forbearance explains that a firm confronts its competitors in multiple markets to recognize interdependences and to lessen the vigor of competition. For example, McDonald and KFC, their restaurants are often close to each other, particularly in China. Reciprocal buying is defined as a set of giant firms foreclosing markets to small competitors because of the interrelationships among large diversified and giant firms (Grant, 1991). These practices increase industry concentration and reduce industry competition (Montgomery, 1994). Diversification also increases market power and profit (Caves, 1981; Miller, 1973). In short, from the

market power view, the fundamental motive of a firm to diversify its businesses into different markets is to gain market power, which in turn increases profitability.

From the resource-based view (RBV), Penrose (1959) mentioned that the remarkable resources can be used to build competitive advantages for a firm. A firm can leverage some unused capacities by implementing diversification strategies. The efficient use of unused resources, which are featured in different specificity from a firm, can lead to a greater profitability (Montgomery, 1994). Ansoff (1965) stated that the core of diversification concept is to integrate firm resources and capabilities to build up strengths across businesses for a diversified firm. Li and Wong (2003) emphasized that related diversification can facilitate a firm to create a synergy among multiple businesses by sharing resources and competencies. From the perspective of internal capital market, labor market, and product market, related diversification particularly highlights that corporate resources and supports are shared in collaborated businesses.

From the perspective of characteristics of shared resources, Montgomery and Wernerfelt (1988) indicated that firm resources differ in salient features. If a firm obtains more specific resources, such as special productive skills and knowledge, to operate businesses in a particular industry, the higher marginal returns can be achieved by fully utilizing such specific resources. On the contrary, a firm has more standardized specificity in their resources, such as standard production lines for manufacturing, which provides a strong basis to diversify its businesses in other manufacturing industries. Montgomery (1994) mentioned that from the resource-based view (RBV), firms can be distinguished from each other in accordance with the differences of acquired resources. Firms may have different degrees of diversification as the degree of specificity in shared resources also varies. In short, a firm that consists

fewer specific resources may maximize profits by reaching a relatively high level of diversification. In contrast, a firm that obtains more specific resources may gain profit by maintaining a relatively low level of diversification (Montgomery, 1994).

Rajan, Servaes, and Zingales (2000) developed a model on diversification discount and inefficient investment by linking the resources and opportunities to the context of capital investment. The model evaluates the level of efficiency of fund distribution at different levels of resources and opportunities. The highest level of efficiency regarding fund transfer can be reached when similar levels of resources and opportunities are given. The internal fund usually flows from units with poor investment opportunities to those with good investment opportunities. In contrast, the poor efficiency of fund distribution is obtained as the diversity of resources and opportunities increases. Resources can be easily distributed to the most inefficient division, resulting in more inefficient investments and lower firm value (Rajan et al., 2000). In other words, the resource-based view theoretically supports that diversification enables firms to maximize profits.

Another key motive for business diversification is based on the principle of modern portfolio theory which leads to a famous saying that "one should not put all eggs in one basket" (Markowitz, 1991; Tobin, 1981). Markowitz (1952) invented the mean-variance analysis method for decision-making in selecting the portfolio. The risk to achieve an expected rate of return can be measured by a given variance. Amit and Livnat (1988) found that if cash flows from individual operations within a firm are not perfectly correlated, it means that the risk can be reduced by increasing diversified operations. The Capital Asset Pricing Model (CAPM) considers an asset's sensitivity to market risk (normally known as systematic risk), which is often represented by the value of covariance of the asset to market, named as beta (Sharpe,

1964). Two types of risks can be classified for all security investments, systematic and unsystematic risks (Sharpe, 1964). Systematic risk known as undiversifiable risk refers to the risk from a specific market that affects all firms within that market, which is also regarded as the market risk (Bali, Brown, & Caglayan, 2012). Unsystematic risk refers to the risk that specifically affects an individual firm or the expected rate of investment return that is varied by the fluctuation caused by firm-specific factors, such as management decision making, strategies setting, and new competition (Moyer, McGuigan, & Kretlow, 1981). However, a well-diversified portfolio of securities leads to the elimination of unsystematic risk based on CAPM (Hsu & Jang, 2008).

Montgomery (1994) found that many financial economists prefer to investigate corporate control changes through the lens of agency theory. Berle and Means (1932) are among the first to propose that the separation of ownership and control in a firm may cause its management team to pursue their own benefits rather than the firm owner's. Jensen and Meckling (1976) also indicated the conflict between owners (principals) and managers (agents) of a firm. When a manager implements diversification strategy, it may lead to the increased firm resources under his or her managing scope (Li & Rwegasira, 2008). Jensen (1986) provided an example that managers can utilize free cash flows from different diversified operations to either pay dividend or reinvest into promising investment. Ahmad, Ishak, and Manaf (2003) pointed out that a firm's diversification is often driven by managers who eager to reduce their employment risks, enhance power and prestige, and maintain high compensation. By contrast, shareholders may not prefer a firm that they are investing in to be on a large scale of diversification, because they can diversify their investment portfolio easily at low cost to balance the risk and return. However, given the differences of various corporate structures, shareholders sometimes have to follow

corporate diversification strategies even though the strategies do not match their expectation of risk and return (Fox & Hamilton, 1994).

Li and Rwegasira (2008) stated that managerial self-interest explicates the motivations of diversification from an agency perspective. Montgomery (1994) highlighted two incentives for managers to expand a firm's business further. First, a manager may lead a firm in the direction of diversification to increase the need of his or her own particular skills. Second, from the perspective of shareholders, managers often pursue diversified expansion as an approach to reduce overall business risk in order to enhance their personal position in the firm. Li and Rwagasira (2008) explained this rationale that shareholders can easily diversify their investment portfolios whenever necessary, whereas managers cannot diversify away from their employment risk. Accordingly, managers may maximize self-interests through diversification strategies to enlarge the business scope and to enhance power to a certain extent at the expense of the shareholder. Shleifer and Robert (1989) claimed that managers invest beyond the purpose of maximizing value for shareholders from the agency theory perspective. To sum up, the motives that firms diversify their businesses are different. If an assumption can be built that all firms should be value-driven, from the agency view, managers may take value-reducing actions to pursue their own interest in the firms.

2.4 Measurement of diversification

The three common approaches of the measurement of diversification based on business or product count are the Standard Industrial Classification (SIC) based method, Herfindahl-Hirschman Index (HHI) (McConnell, Brue, & Flynn, 2009; McVey, 1972), and Entropy index (Chen & Yu, 2012; Jacquemin & Berry 1979; Park

& Jang 2012). In fact, there is no consensus on which should be the best method for the measurement diversification (Shackman, 2007). The SIC system, a numerical system developed to classify all types of economic activities within the U.S. economy, is constructed based on product-count measures of diversification (Bass, Cattin, & Wittink, 1978; Gort, 1962; Montgomery, 1982; Rhoades, 1973). The system contains all establishment classifications, and the establishments are classified based on their primary activities. The Office of Management and Budget (1992), the largest office of Executive Office of President of the United States, released the standard industrial classification manual which maintains the system and stresses classifications that fit the actual industry structure in the American economy. In China, SIC was issued in 1999, which contains "section", "division", "group", and "class" into 1, 2, 3, and 4 digits as industry and sub-industry codes which are applicable to China 's economy (Wang, Liu, & Peng, 2009). The SIC codes are a good means of classifying businesses based on firm activity, which is a relatively easy approach to identify diversification (Doaei, Anuar, & Hamid, 2012). Martin and Sayrak (2003) pointed out a drawback of using SIC codes in determining the level of diversification is that this system cannot sufficiently identify which industry is more important if a firm operates its businesses across several industries.

Therefore, McConnell, Brue, and Flynn (2009) suggested that the HHI can overcome the disadvantage of SIC as it measures diversification. Berry (1971) developed the Berry-Herfindahl Index to measure diversification, and it was based on the HHI (HHI = $\sum_{i=1}^{N} S_i^2$; where *S* stands for a market share of an industry player) that generally measures the level of market concentration, which is calculated as one subtracts the result that sum up the square shares of products in a firm, shown as the following equation:

$$\text{Berry\_Herfindahl Index } = 1 - \sum_{i=1}^{N} P_i^2; o < H \leq 1$$

Where, P_i is the share of product i in the firm presented in percentage, and n is the number of product units that the firm has. The spectrum ranges from zero to one, wherein the bigger value denotes a greater diversified firm. The HHI-based index has been widely used. P_i usually stands for a percentage from SIC 2, 3, and 4 digits of sales or asset share out of the total sales or assets of a firm (Doaei et al., 2012). Furthermore, Wang et al. (2009) mentioned that Berry-Herfindahl Index also has its disadvantages in measuring diversification. For instance, the relatedness of businesses for a firm measuring diversification based on SIC 2 digits may be totally different from the use of SIC 4 digits, which cannot precisely reflect the real situation of firms' diversification sometimes. Given that the measurement is product-count based, for special cases, the degree of product diversification for a firm based on SIC 2 digits may not have to be smaller than the degree of product diversification based on SIC 4 digits. The differences of using different SIC digits were noticed by Wang et al. (2009), which is one disadvantage of using HHI-based diversification measurement.

Jacquemin and Berry's pioneering study (1979) applied the entropy measure from physics in measuring the degree of diversification. The entropy measurement contains three different dispensable elements, such as the number of industries in which a firm operates, the number of total sales or assets in each industry, and the degree of unrelated and related diversification of a firm (Amit & Livnat, 1988; Baysinger & Hoskisson, 1989). Park and Jang (2012) reported that entropy measurement is more objective and decomposable. Chatterjee and Blocher (1992) suggested that compared to other diversification measurements, entropy is more

suitable for measuring diversification. The entropy index is widely used for measuring diversification (Doaei et al., 2012).

Entropy index of total diversification (DT) equals to $\sum_{i=1}^{n} P_i \ln(1/P_i)$; Total diversification also equals to the sum of related diversification (RD) and unrelated diversification (DU).

Where, P_i is the share of sales of segment i in total sales of a firm and n is the number of firm segments. The entropy index can be utilized to determine the degree of unrelated and related firm diversification (Jacquemin & Berry, 1979). The value range of the entropy index is $0 \leq E \leq \ln n$. DT refers to a measure of the total degree of diversification that contains related and unrelated diversification (Jacquemin & Berry, 1979; Palepu, 1985; Park & Jang, 2012). Park and Jang (2012) used the above equation to measure the total degree of diversification. However, the total degree of diversification comprises the degree of related diversification (DR) and unrelated diversification (DU). The contribution of the entropy measurement is the measurement of a firm's DR and DU, as shown in the following equations:

$$DU = \sum_{j=1}^{M} P_j \ln(\frac{1}{P_j})$$

Where, M is the number of industry group; P_j is the percentage of firm's total sales with j_{th} industry group; and DU is the degree of unrelated diversification entropy.

$$DR = \sum_{j=1}^{M} DR_j P_j$$

Where, DR_j is the diversification within industry groups among the related businesses of a firm; M is the number of industry groups ($n \geq M$); and P_j is the sales percentage of segment j_{th} group out of the total sales of a firm. Park and Jang (2012)

suggested that a larger DR value stands for a firm being more diversified into related businesses. For example, the case is assumed that a hotel firm generates $100 million dollars from its core business. One business that is related to the core business makes $50 million dollars, while another business that is unrelated to the core business makes $25 million dollars. The related diversification of entropy (DR) and unrelated diversification (DU) of entropy can be calculated as follows:

$$DR = \left(\frac{50}{50+100} * LN\left(\frac{1}{\frac{50}{50+100}}\right) + \frac{100}{50+100} * LN\left(\frac{1}{\frac{100}{100+50}}\right)\right) * \frac{50+100}{50+100+25} + \left(\frac{25}{25} * LN\left(\frac{1}{\frac{25}{25}}\right)\right) * \frac{25}{50+100+25} = 0.546;\ DU = \frac{50+100}{50+100+25} * LN\left(\frac{1}{\frac{50+100}{50+100+25}}\right) + \frac{25}{50+100+25} * LN\left(\frac{1}{\frac{25}{50+100+25}}\right) = 0.409\ ;$$

The total degree of diversification sums DR and DU up, which can be also calculated as:

$$DT = \frac{50}{50+100+25} * LN\left(\frac{1}{\frac{50}{50+100+25}}\right) + \frac{25}{50+100+25} * LN\left(\frac{1}{\frac{25}{50+100+25}}\right) + \frac{100}{50+100+25} * LN\left(\frac{1}{\frac{100}{50+100+25}}\right) = 0.955$$

Montgomery (1982) expressed an objection of using product-count in measuring diversification on the basis of SIC system. The rationale for his objection is that SIC system sometimes does not categorize industries in accordance with different products. For example, from manufacturing firms that distinguished between SIC groups 2 and 3 digits based on manufacturing process rather than products. Furthermore, the numbers in SIC system hardly reflects and interprets the relation among industries. For instance, a group of sub-industries of SIC 4 digits categories is

within broader SIC 2 digits categories, which can be totally different from another group of sub-industries of SIC 4 digits categories under different broader SIC 2 digits categories (Martin & Sayrak, 2003; Montgomery, 1982). The weakness inherent in SIC system can be overcomed by the two systems of categorical measurement developed by Rumelt (1974) and Wrigley (1970).

From a management perspective, the essence of diversification for a firm is to extend skills and knowledge into more different operations. The key benefits of diversification for a firm include its involvement in different activities built upon different skills and new activities related to old activities (Grant & Jammine, 1988). Wrigley (1970) and Rumelt (1974) developed two classification systems for different types of diversification based on the proportions of sales generated from related and unrelated industries to the focal industry. The two dimensions of the key features of diversification are measured by the "Specialization Ratio" and "Related Ratio".

Table 2.2 Wrigley and Rumelt classification of diversification strategies

Wrigley's Classification	
Single business	Specialization ratio (SR) > 95%;
Dominant business	95% > SR > 70%;
Related business	SR < 70%, related ratio (RR) > 70%;
Unrelated business	SR < 70%, RR < 70%.
Rumelt's Classification	
Single business	Specialization ratio (SR) > 95%;
Dominant vertical	Vertically related sales > 70%;
Dominant constrained	95% > SR > 70%, the majority of other businesses related to one another through core skill or asset;
Dominant-linked	95% > SR > 70%, the majority of other businesses related to at least one other business within the firm;

Dominant-unrelated	95% > SR > 70%, majority of other businesses unrelated;
Related-constrained	SR < 70%, over 70% of businesses related to one another;
Related-linked business	SR < 70%, RR > 70%, majority of businesses related to at least one other business within the firm;
Unrelated business	SR < 70%, RR < 70%.

Notes: The specialization ratio: the firm's sales within its major activity as a proportion of its total sales; and the related ratio: the proportion of the firm's total sales which are related to one another. (Grant & Jammine, 1988, p.333)

Table 2.2 shows that the specialization ratio is used to classify firms into one of four major classifications. Every firm can fit into a category based on relationships among business units (Rumelt, 1974). Rumelt (1982) reorganized the categorical measurement scheme into four categories, namely: single/dominant, related-constrained, related-linked, and unrelated businesses. Unrelated business is defined as the firm which operates its businesses/productions/ inputs to be fully independent of other businesses. The related-linked business stands for the type of a firm that has business units related to at least one of the other business units within the firm. The related-constrained business stands for the type of firms whose business units have a one-to-one relationship with the other businesses. The single/dominant business means that a firm has a single business area or dominant position in a particular business (Srivasta, Nargundkar, & Green, 1994). Categorical measurement can capture the extent of firm diversification and demonstrate the relationships among businesses within a firm.

The categorical measures from Rumelt (1974) and Wrigley (1970) for diversification are disadvantageous due to the difficulty in calculating the ratios. Many diversified firms may be characterized into both related-linked and constrained types, failing to fit in one category (Srivasta et al., 1994). To compare with the

categorical measurements, the entropy can be successfully used for measuring diversification with the logarithms of the inverse of business units' sales to create the weights (Amit & Livnat, 1988; Baysinger & Hoskisson, 1989; Palepu, 1985; Park & Jang, 2012; Varadaragan & Clark, 1994). Palepu (1985) achieved equivalent results after applying both Rumelt (1974)'s categorical measurement and entropy measurement in one study. Palepu (1985) also argued that entropy measure is superior in classifying related and unrelated diversification. Therefore, the entropy is used to measure diversification in this study.

2.5 Diversification in the hospitality industry

Table 2.3 presents the summary of empirical studies that examined the relationship between diversification and performance in the hospitality industry, which includes restaurants and casino firms.

Table 2.3 Relevant literature on diversification in the hospitality industry

Study /Reference	Sample	Period	Diversification Measure	Performance Measure	Major Findings
Lee and Jang, (2007)	36 commercial hotels in the U.S.	1997−2001	85% specialization ratio as a cutoff point for diversified or undiversified identification	ROA ROE Net profit margin (NPM)	Diversification partly enhances the stability of performance.
Kang et al. (2011)	15 casino firms in the U.S.	2004−2007	HHI used for measuring product diversification	Tobin's Q ROA The growth rate of ROA (GROA)	Inverse U-sharp relationship supported between product diversification and performance
Giannotti, Mattarocci, and Spinelli, (2011)	256 hotels in Italy	2004−2008	The efficient frontier (Markowitz, 1952)	Gross operating profit per available room (GOPPAR)	Positive relationship supported between geographic diversification and hotel investment

Lee et al., (2011)	7 public traded hotels in U.S. with 58 observations	1994−2009	HHI	Sharp ratio; Stock return; Sales; Segment diversification in room section; Risk; Leverage ratio.	Inverse U-sharp relationship supported between segment diversification and performance
Park and Jang (2012)	308 firms in the restaurant industry (SIC 5812) in the U.S.	1980−2008	Related Diversification Entropy & Unrelated Diversification Entropy	ROA Return on Sales (ROS)	Non-linear relationship supported between diversification strategies and firm performance
Chen and Chang (2012)	25 International tourist hotels in Taiwan	1996−2008	HHI Divided into two groups (rooms sales & food and beverage (F&B) sales)	Profit growth Profit instability	Hotel groups emphasize F&B sales gaining high-profit growth albeit unstable
Yeh, Chen, & Hu, (2012)	72 international tourist hotels in Taiwan	1997−2008	HHI	Operating margin before tax	Positive relationship supported between diversified business in F&B and profitability
Park and Jang, (2012)	288 firms in the restaurant industry (SIC 5812) in the U.S.	1980−2008	Related Diversification Entropy & Unrelated Diversification Entropy	ROA Ln(sales)	Positive relationship supported between related diversification and firm profitability
Park and Jang (2013 b)	308 firms in the restaurant industry (SIC 5812) in the U.S.	1995−2008	Related Diversification Entropy & Unrelated Diversification Entropy	Tobin's Q Free cash flow Debt leverage	Negative relationship supported between unrelated diversification and firm performance
Kang and Lee (2014)	North American Industry Classification System (NAICS) 721110 (hotels	1993−2010	HHI	ROA Tobin's Q	Positive relationship supported between geographic diversification and firm performance.

	except casino hotels and motels) 176 firm-year observations in the U.S.				Brand diversification positively moderates the relationship between geographic diversification and firm performance.
Ooi, Hooy, & Mat Som, (2014)	42 hotels within 4 Asian economies	2001−2012	Entropy diversification measurement	ROA	Unrelated international diversification has a negative effect on firm performance.
Kang and Lee (2015)	132 restaurant firms in the U.S.	1993−2010	HHI used for geographical diversification and brand diversification measurement	Tobin's Q	No relationship between geographic diversification and firm performance Negative relationship supported between brand diversification and firm performance are found. Brand diversification has a negative moderating effect on the relationship between the geographic diversification and firm performance.
Wang and Chung (2015)	17 commercial and casino hotels in U.S.	2014	Brand Portfolio scope; Intra-portfolio competition; Brand portfolio location; Brand portfolio element.	ROA Market Share Profit margin Cash flow per sales Market to book	Four dimensions are identified for measuring hotel portfolio strategy; Hotel performance is tightly related to portfolio strategy.

Yang, Cao, and Yang. (2017)	377 urban hotels in Beijing	1994-2005	HHI	Value-added (the difference between sales revenue and cost)	The positive relationship between product diversification and hotel performance was supported; Additionally, hotel location, diversification expansion rate, and foreign ownership play as moderating factors determining the effect of product diversification.

Table 2.3 displays whether the relationships between different diversification strategies and firm performance are empirically supported based on previous studies. The form of diversification in the hotel industry was largely discussed in prior studies. The types of brand, segment, and international diversification, as well as hotel portfolio regarding brand and segment, product, geographic, and related/unrelated diversification, are the key topics of diversification in the literature. There is no consensus on the relationship between diversification and firm performance, neither on which among these diversification strategies better influences firm performance, suggesting that a closer examination of the relationship between diversification and performance is needed in the context of tourism and hospitality industry.

2.6 Theoretical background

2.6.1 *Modern portfolio theory*

Diversification is a key to managing an investment portfolio in the finance and investment fields. The essence of modern portfolio theory (MPT) is that diversification can lower the risk of a portfolio without disadvantageously influencing

its aggregate expected return (Chan & Leung, 1990). According to MPT, the biggest motive of being diversified in an investment portfolio is to reduce unsystematic risks. Petersen, Singh, and Sheel (2003) specified some factors that particularly affect unsystematic risk in real estate investment (including hotel properties), such as the leasing terms, operating and financial leverage, location, demand and supply, and buyers mix. In turn, those above-mentioned factors are often driven by business cycles, the cost of capital, inflation, and demographic trends (Viezer, 2000). To manage a portfolio is based on the rationale that the expected returns of portfolios are maximized with a given level of risk or the expected return that portfolios seek with a minimum level of variance (Markowitz, 1952, 1959).

MPT has been applied in previous studies and it is not new to tourism and hospitality research. Board, Sinclair, and Sutcliffe (1987) and Board and Sutcliffe (1991) used MPT to optimize regional tourism and Jang (2004) applied it to mitigate tourism seasonality. Furthermore, Jang, Morrison, and O'Leary (2004) asserted that the volatile feature of risk and return in the finance field is similar to that of in the tourism area, where tourist arrivals and tourism demand to a destination can be highly volatile. Afterward, Jang and Chen (2008) applied MPT to the tourism context in determining the optimal market mixes for Taiwan as a tourism destination. Jang and Chen (2008) conducted a portfolio analysis based on the number of tourists from various sources of countries to Taiwan in order to determine the optimal tourist market mixes by minimizing the variance in tourism demand. Lee and Jang (2013) developed a theoretical framework based on the MPT to understand how lodging firms regard their investment options as a portfolio asset.

Taking the MPT as theoretical foundation, Petersen et al. (2003) conducted a research investigating the performance of real estate investment portfolio with five

types of assets (i.e., office, retail, industrial, apartment, and hotel). Petersen et al. (2003)'s study focused on investment diversification in different types of real estate assets with various means of asset allocation and indicated that the hotel asset outperformed all the others in terms of total returns. Petersen et al. (2003) stated that adding hotels in real estate investment portfolios significantly influenced the efficiency, which means that each real estate investment portfolio contains hotels has a higher rate of return at the same level of risk than the investment portfolio without hotels, which is also known as portfolio frontier of real estate investment. Among the different means of diversifying a real estate investment portfolio, Hartzell, Hekman, and Miles (1986) suggested that the type of property diversification is more effective than regional diversification in terms of aggregate expected rate of return of a portfolio. Grissom, Kuhle, and Walther (1987) found that within a portfolio, the diversification in both geographic location and types of property can work better than diversification merely in geographical location or property type in terms of reducing unsystematic risk. Firstenberg, Ross, and Zisler (1988) investigated the role of hotels in a real estate investment portfolio and found efficient frontier portfolios indicating the best combination of the type of real estate property, hotels, and offices with the highest return and an affordable level of risk.

Youn and Gu (2010) suggested that U.S. hotel firms may diversify their businesses overseas and create a portfolio of hotels in different regions and countries so that the downturns of businesses caused by the regional economic recession can be compensated through diversification. Youn and Gu (2009) pointed out that customers are more sensitive to price during the economic downturn because of a decrease in disposable income. Therefore, the low-end hotels may have less influence from the economic recession due to the increase of the level of price sensitivity during a

financial downturn (Youn & Gu, 2010). As such, constructing a well-diversified portfolio of hotels can serve as a risk aversion tool under the financial downturn to maintain the aggregate return for investors. Hotel firms can build a well-diversified portfolio across countries and regions and market segments and make them more robust to changes of market condition in the future recessions (Youn & Gu, 2010).

2.6.2 Resource-based theory (RBT)

Penrose (1959)'s pioneer study explored the relationship between firm resources and firm growth in a book named "*The Theory of the Growth of the Firm*" that has been widely cited as the foundation of the resource-based theory (RBT). Penrose (1959) advocated that a firm should consist of a bundle of resources. If any of the resources have not been substantially utilized in the firm's current operations, there is a potential economic incentive to utilize them fully. That is, the growth of a firm depends on whether the resources can be substantially utilized in the firm. Penrose (1959) provided a solid theoretical foundation for the subsequent development of RBT and a theoretical support for investigating the association between firm growth and the implementation of corporate diversification (Wan, Hoskisson, Short, & Yiu, 2010).

RBT then has widely influenced the field of strategic management as well as other disciplines (Barney, 1991; Wernerfelt, 1984). This theory primarily claims that the possession of resources of a firm enables the firm to develop its competitive advantage, which in turn, increases great profits with the application of the competitive advantages (Barney, 1991). The two basic assumptions of RBT are, first, some firms outperform others in certain activities based on the unique in resources and capabilities (Barney, 1991; Dierickx & Cool, 1989). Second, the differences among firms' resources can be robust because of the rarity of certain resources and

the levels of difficulty to be substituted and imitated in those resources and capabilities (Reed & DeFillippi, 1990).

2.6.3 Corporate diversification and RBT

Corporate diversification was initially studied from the view of industrial organization economics (e.g., Arnould, 1969; Berry, 1971; Gort, 1962), and then from the perspective of organizational economics (e.g., Wang & Barney, 2006). A rise of the application of RBT in the diversification literature commenced in the 1980s and the 1990s, along with some related concepts such as distinctive competence (e.g., Hitt & Ireland, 1985), dominant logic (e.g., Prahalad & Bettis, 1986), and core competence (e.g., Harmel & Prahalad, 1990), which provided a unified theoretical foundation for investigating corporate diversification from the perspective of emphasizing firm resources (Wan et al., 2010). In the subsequent development of diversification research (e.g., Teece, 1982; Wernerfelt, 1984), The RBT has emerged and complemented the literature on diversification in strategic management. It provides a fresh theoretical lens to study corporate diversification from the perspective of relatedness of resources in firms. Rumelt (1974)'s study focused on the importance of relatedness and firm performance and indicated that related diversification outperformed than unrelated diversification. Emphasizing the relatedness in corporate diversification is uniquely seen in the strategic management field (Wan et al., 2010).

Wang and Barney (2006) demonstrated that based on the resource-based view, a diversification strategy can reduce the risk associated with the value of a firm's core resources, which increases employee's incentives to decide on specific investment. Wang and Barney (2006) suggested that managers should take the effect of resource-based diversification strategy on employee's incentives into consideration because

such a consideration may lead to a different consequence of resource-based diversification strategy on firm risk reduction. Furthermore, Wan and Hoskisson (2003) investigated the relationship between corporate diversification strategy and firm performance based on a sample of firms from six western European countries and found that the institutional environment is a key factor affecting the corporate diversification-firm performance relationship. Wan and Hoskisson (2003)'s study indicated that product diversification positively influenced firm performance in more munificent environments, however, a negative relationship was supported in the less munificent environment.

From the perspective of RBT, a related diversification strategy is more efficient to enhance firm performance compared to a focused strategy, because a firm can seize additional and potential opportunities to fully utilize their resources for additional return (Wan et al., 2010). Barney (1991) suggested that a firm with related diversification enables the sharing of critical resources among its business units. Related diversification is commonly considered as a better strategy than unrelated diversification due to the synergy of resources sharing in a firm. The RBT specifically explains why related diversification can derive better performance than unrelated diversification does. Rumelt (1974) noted that related diversification can be successfully applied to firm-level capabilities, such as in operational economies of scope and shared resources in production. Furthermore, Wernerfelt (1984) addressed the issue of firm growth and diversification, particularly which type of diversification should be relied on to substantially utilize firm resources and whether firm resources should be developed through diversification. Jones and Hill (1988) also realized a challenge for top management wherein an increasing diversity in business units for a firm creates difficulties to accumulate all resources which can be fully utilized across

all business units. Therefore, to some extent, there is a contingency in the ability to share resources in implementing diversification strategy (Grant & Jammine, 1988). In addition, Palich, Cardinal, and Miller (2000) suggested the inverted U-shaped relationship between diversification and firm performance from the RBT perspective. Essentially, diversification from the RBT view interprets the strategic interrelationships based on the relatedness of resources shared within firm business units, subsequently, achieving superior firm performance and increasing firm value (Wan et al., 2010).

A conceptual framework (see Figure 2.1) of the combination of diversification and the RBT was demonstrated by Wan et al. (2010) with the traded antecedents, consequences, and moderators. Different resource types can be linked to various diversification modes. Chatterjee (1990) set a group of factors that help managers decide which diversification mode can optimize firm efficiency in using excess resources in a new market. Chatterjee (1990) found that different entry modes affect the cost of utilizing excess resources differently in the new market. Chatterjee and Wernerfelt (1991) reported that physical, knowledge-based, and external financial resources were highly associated with related diversification, whereas internal financial resources are linked with unrelated diversification.

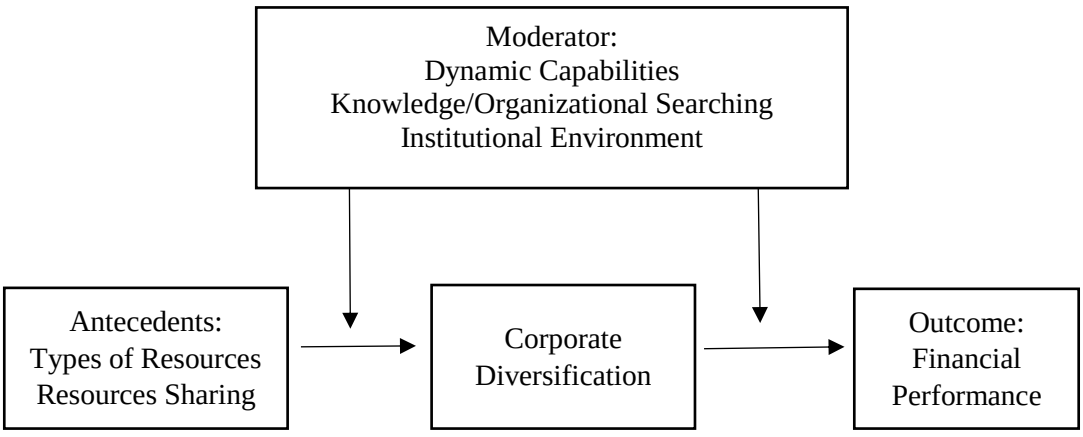

Figure 2.1 Conceptual framework of RBT and diversification
Source: Adopted from Wan, Hoskisson, Short & Yiu (2010, p.1348)

From the perspective of being diversified across firm business units, to share resources is the key motivation to diversify and to reap synergy in operational efficiency and profit (Wan et al., 2010). Farjoun (1994) found that a firm that is more efficient in using their resources can diversify within related groups of industries especially in the facet of human capital. Subsequently, skill and expertise can be shared across similar products and businesses. The ability to share resource is important in determining the types of diversification. Different levels of resources sharing in a firm strongly influence the effectiveness of the firm's business strategy (Govindarajan & Fisher, 1990).

The introduction of the concept of dynamic capability in the 1990s and the 2000s provides numerous significant implications for diversification research (Wan et al., 2010). Helfat and Eisenhardt (2004) determined that the economies of scope can help a firm diversify into related businesses because of the redeployment of resources and capabilities within related businesses considering that the firm may exit some markets that others enter. Døving and Gooderham (2008) noted that a dynamic capability significantly influences the scope of services. Furthermore, another term that is related to dynamic capability is called corporate coherence. Piscitello (2004) claimed the corporate coherence, such as a dynamic interconnectedness between firm technological competencies and its business activities, positively affects firm performance.

Miller (2006) explored the relationships among technological diversity, related diversification, and firm performance and found a positive relationship between diversification in technological diversity and firm performance, which

enhances the understanding of a firm's knowledge-based activity across businesses. Pennings, Barkema, and Douma, (1994) found that a firm that diversifies into related businesses and industries is more persistent in its diversification experience because the core skills can be closely connected as the firm is proactive in organizational learning and search. Similarly, Chang (1996) suggested from a knowledge-based perspective that a firm proactively enhancing its search and selection activities can enlarge its knowledge base, thereby, improving its performance. The knowledge-based view for a firm is helpful in predicting which business or market should be entered or exited. More importantly, Mosakowski (1997) provided an empirical study that diversification can be viewed as a process in which firm figures out a way to best use its resources across different market segments or industries.

Institutional management is another important factor emerged and integrated with RBT in the 2000s in diversification research (Greif, 2006; Hoskisson, Eden, Lau, & Wright, 2000; Wan & Hoskisson, 2003); this has been a key element in studying emerging economies. Wan and Hoskisson (2003) studied the relationship between corporate diversification strategy and firm performance and suggested to consider home country environment as one of the key related factors. Wan (2005) proposed a theoretical nexus wherein resources and institutions influence the growth and scope of a firm in a transition economy. Li and Wong (2003) conducted an empirical study based on 160 Chinese firms and found that resources and their utilization can be enhanced via related diversification, whereas institutional environment management can be better applied to unrelated diversification; these serve as the key implications to firm performances in emerging economies. In addition, Chang, Chung, and Mahmood (2006) compared firms in Korea and Taiwan and found that the business

group affiliates in Korea performed better than firms in Taiwan, to the extent that institutional environments explained the caused differences.

The financial performance of a firm commonly measures diversification consequences. Hoskisson, Hitt, Johnson, and Moesel (1993) explored different diversification measures that influence both accounting-based and market-based measures of firm performance for firms. Accounting-based measures are commonly used in measuring performance in the field of strategic management. Markides and Williamson (1994) conducted an empirical study on the relationship between diversification and firm performance and determined that related diversification can optimize performance when a firm allows access to strategic assets that can be used to build competitive advantage for the firm. The competitive advantage is conditional on the organizational structures that a firm can well distribute and share existing strategic assets to build competence in a new market. The RBT provides a crucial framework to explicate the essence of a firm's competitive advantage and predict the firm performance (Barney, Ketchen, & Wright, 2011; Vorhies & Morgan 2005).

2.6.4 Knowledge-based theory

Although the resource-based theory of the firm well explains the important roles of firms' strategic resources and knowledge that help firms achieve competitive advantages, advocates (e.g., Barney, 1991;Wernerfelt, 1984) of the knowledge-based theory argued that the resource-based theory does not go far enough because the resource-based theory views knowledge as a generic resource, rather than special characteristics (Arend, Patel, & Park, 2014). The resource-based theory has constraints to distinguish different types of knowledge-based capabilities of the firms, for instance, information technologies of firms can act an essential role from the

knowledge-based view in the firms' information systems that assist the firms to synthesize and enhance their knowledge management (Alavi & Leidner, 2001).The knowledge-based theory of the firm views knowledge as the most essential resource for a firm and advocates that knowledge-based resources are unique and socially complex and the accumulation of heterogenous knowledge and capabilities of the firms are the primary sources of sustainable competitive advantage (Alavi & Leidner, 2001). Human capital of a firm typically contains a bundle of knowledge-based resources such as technology skills and knowledge which are integrated with the firm's facilities to create value for the firm.

2.6.5 Resource dependence theory

The Resource Dependence Theory (RDT) draws increasing interests from researchers in organizational theory and strategic management (Hillman, Withers, & Collins, 2009). The basic assumption of the RDT is that firms succeed by obtaining, enhancing, and maintaining resources from their environment and fail if the firms cannot acquire a bundle of proper resources (Ehreth, 1993; Pfeffer & Salancik, 1978; Sheppard, 1995). Pfeffer and Salancik (1978) claimed that the RDT influences a corporation similar to an open system which is dependent on contingencies in an external environment. Furthermore, to understand an organization's behavior requires understanding the context of behavior (Pfeffer & Salancik, 1978). The RDT explains that external factors may drive organizational behavior and implicates that a manager can serve to reduce the uncertainties and dependencies caused by external factors in a constrained context (Hillman et al., 2009).

Sheppard (1995) suggested that a firm can manage the effects of external dependencies in various means: first, by entering more profitable and controllable

domains for doing business, a firm may gain a strong surviving ability (Pfeffer & Salancik, 1978); second, to avoid the effects of dependence on the environment, diversification or merging are implemented for survival (Thompson, 2003); last, exchange relationships in business can be manipulated by building external linkages, such as an interlocked board of directors, which is a common business practice wherein a firm's board director also serves as a manager of another firm (Heemskerk, 2013).

2.6.6 Environmental influences on organizations

The domains where a firm operates its businesses can be critical to the firm's success (Sheppard, 1995). Schemalensee (1985) found that industry effects existed based on a sample of 3,816 firms from 16 industries and that the effects accounted for at least 75% of the variance in average rate of return. Moulton and Thomas (1988) also argued that a fit between environment and firm resources is vital to the success of an enterprise. For instance, Hambrick and D' Aveni (1988) found that a failing firm usually intends to change the industries where they operate businesses with fierce competitions before a failure.

Pfeffer and Salancik (1978) introduced a fundamental concept for describing the condition of an environment called *resource scarcity*, wherein inter-organizational fields and organizations are in conflict to the access to environmental resources; is the extent to resource scarcity can be measured by two indicators, namely, industry profitability and growth. Industry profitability indicates the level of resources that a firm could potentially generate, such as revenues. Lieberson and O'Conner (1972) suggested that a firm in which an industry has a high level of profitability is expected to be more profitable than in the one with a low level of profitability. On one hand,

firms encounter competitions with other organizations in accessing environment resources because of the scarcity of the resources (Pfeffer & Salancik, 1978). On another hand, a firm can also have fewer conflicts with other organizations to obtain resources that can generate benefits. For instance, Sheppard (1995) found an effect of the industry profitability on the level of conflict to obtain resources from the environment and concluded that firms where an industry has a higher level of profitability, are more profitable and easier to acquire capital investments than those in an industry with a lower level of profitability. However, an industry with a high profitability often attracts more competitors to enter, which will then result in the decrease of profitability. According to Bain's (1951) study, the profitability of an industry is affected by the barriers for entering the industry. If an industry has scores of barriers to entry, the industry profitability can be sustained and the existing firms within the industry enable to obtain sustainable profits; the conflicts to access environmental resources among organizations can be lessened. Furthermore, the common measure of industry profitability is the return on equity (ROE) of each industry in which firms operate businesses (Dess & Beard, 1984; Montgomery, 1982), calculated as a weighted average (by revenues) of all the firm businesses based on the 4-digit SIC code.

Furthermore, Sheppard (1995) mentioned that industry growth rate indicates the degree to which resources are available to firms. Mcdougall et al. (1994) gathered a sample of 134 ventures to explore the effects of industry growth and strategic breadth in influencing performance. They found that a high growth industry can offer a more favorable environment for new ventures to gain growth in sales than a low growth industry, and new ventures that choose to enter high growth industries are more aggressive in expanding scale and in emphasizing product development more

than those in low growth industries. Porter (1981) argued that firms in a high growth industry can increase their sales without stealing market shares from others. Sheppard (1995) similarly claimed that a firm can easily increase its revenue without conflicts in resource access with other organizations in a high growth industry and hypothesized that a firm in a faster growth industry may be more likely to survive than in a lower growth industry. Furthermore, industry growth rate is measured with the weighted average sales growth rate over 5 years for each industry in which the firm operates businesses based on 4-digit SIC code (Sheppard, 1995).

Industry instability is another crucial factor of environment condition influencing a firm operating its business which indicates the degree to which a firm may confront problems to gain environmental resources (Sheppard, 1995). A firm in a stable industry easily cooperates with others than firms in a less stable industry because of the predicable product demand and actions from competitors and suppliers (Pfeffer & Salancik, 1978). Sheppard (1995) measured industry instability by the standard deviation of the industry value of shipments from the last three industry censuses of manufacturing-related industries, while Gabe (2005) evaluated industry instability by measuring fluctuations in industry employment. In the context of hospitality, Chen, Chang, & George (2014) measured demand uncertainty as a critical market factor by calculating the differences between actual room revenue and predicting room revenue.

The effects of environment changes on a specific industry can be weakened if a firm diversifies itself into more domains (Kotter, 1979). Diversification strategy can serve as a buffer to self-protect from adverse changes in markets, which enables a firm to reduce the dependence on a single market and to avoid interdependence among organizations as well (Pfeffer & Salancik, 1978). Based on the RDT, diversification

leads to a buffering effect wherein a firm reduces the risk of reliance on merely one domain, which in turn reduces the risk of a downturn in the domain. Diversification may eventually be closely associated with firm survival in a changing environment (Sheppard, 1995).

2.6.7 Structure-conduct-performance paradigm

The Structure Conduct Performance (SCP) paradigm was proposed by Bain (1951), and it deals with the relationships among industry structure, firm behavior, and the influences of these behaviors on market performance. SCP is one of the paradigms in the traditional industrial organization economics, which has been applied and transferred into the strategic management discipline for decades. In fact, the emphasis of SCP in the industry structure may be costly and challenging to strategy-oriented practitioners and researchers because of the highlighted limitations which include wrong levels of analysis, as well as the use of static analysis and barriers of entry to determine profitability (McWilliams & Smart, 1993). The SCP paradigm advocates that an economic performance of an industry is determined by the conduct of buyers and sellers, which in turn depend on the structure of the industry. In general, performance is understood from the economic and financial perspectives of a firm in an industry and by a set of measurements on profitability and resources employed versus the yield of the highest output value. This can be measured in the form of variables such as price, efficiency in production, equity, a progress of technology, quality of products, and most commonly used profits.

In empirical studies, economic performance is generally measured by profitability and profit margin (Matyjas, 2013). The conduct presents the activities of the buyers and sellers in the industry. The sellers' activities include the installation

and utilization of capacity, promotional and pricing strategies, research and development, and competition or cooperation among firms. Matyjas (2014) explained that conduct is a series of strategic activities undertaken by a firm in an industry. Contemporarily it can be understood as firm strategies that normally consist of legal tactics, product mix, tacit collusions, plant investment, mergers, and contracts. When it comes to industry structure, it covers elements such as industry maturity, size of buyers and sellers, barriers of entry, cost structure, diversification and economies of scale, and concentration levels of market structure (Bain, 1959). Matovic (2002) mentioned a series of variables that evaluate the market structure of an industry, which consists of barriers to entry, competition, growth, and market share. The SCP framework (Figure 2.2) indicates that market structure affetcs the behavior of firms in the market, which determines market performance (Barakat, 2000). In the field of strategic management, SCP becomes one of the major research paradigms which can be generally found in the research on generic strategies, diversification, strategic planning, business typologies, and mergers and acquisitions (McWilliams & Smart, 1993).

The SCP model was upgraded by scholars (Lee, 2007; Porter, 1981) who indicated that firms can influence and determine the entries into their industries successfully by selecting proper strategies carefully. In fact, the SCP model is used to focus on not only the influences of the market structure and strategic choices on economic performance, but also on the feedback effects of economic performance and firm strategies on market structure (Porter, 1981). Lee (2007) supported Porter (1981)'s revised version of the SCP paradigm and pointed out that the theory of strategic groups has an impact on the SCP paradigm. Under the assumption of the theory of strategic groups that firms have similar business models or strategy

combinations within a somewhat homogeneous industry environment, the performance variations are lessened (Leask & Parnell, 2005). In terms of the relationship between structure and conduct in the model, industry structure leads to the determination of choices of the strategies of a firm, conversely, and the strategies taken by firms in the industry can affect industry structure (Matyjas, 2014).

Lipczynski, Wilson, and Goddard (2013) demonstrated the latest version as shown in Figure 2.2. Government policy has an impact on variables of structure, conduct, and performance (Lipczynski et al., 2013; Matyjas, 2014). In reality, a governmental policy can significantly affect the condition of the industry, such as the barrier of entry and the level of market concentration. Lipczynski et al. (2013) argued that a regulator might impose price controls and prevent the market power of some firms such as setting a monopoly price. Furthermore, a set of regulation policies, such as fiscal policy, employment policy, the antitrust acts, investment incentives, and macroeconomic policy, provide important implications for firm that performance can be measured by profitability, growth, and production efficiency (Lipczynski et al., 2013). Another assumption of the SCP paradigm is that the market condition can be affected by customer demand and the condition of supply (Lipczynski et al., 2013; Matyjas, 2014). The important areas in the field of customer demand are elasticity of demand, substitutes, seasonality, and method of purchase, while in regard to the supply condition, technology, raw materials, product durability, location, cost structure, and economies of scale are the key aspects (Matyjas, 2014).

The empirical studies on the structure-conduct-performance (SCP) paradigm mainly focused on the validity test of the original assumptions of the SCP paradigm until the 1970s (Ghemawat, 2002). The mechanism of testing the validity of the basic assumptions of the SCP paradigm focuses on rigorous industrial research (individual)

and cross-industrial comparisons as the mainstream of traditional industrial organization economics (Matyjas, 2014). In addition, some primary variables in measuring performance under the SCP paradigm to facilitate subsequent empirical research were developed. The measurement of performance has been commonly used includes profitability ratios, ROA and ROE (Ramanujam & Venkatraman, 1984). Furthermore, Lerner index (Lee, 2007) measures the strength of the firm's market power by calculating the market price of a firm minus marginal cost over market price. Another measure is Tobin's Q ratio, which calculates the total of firm's stock market value, a replacement cost of capital, a value of preferred shares, and an outstanding loan capital over the replacement cost of total assets.

Several indicators are necessary to measure the concentration level of market structure: the degree of concentration in industry that measures the total market share of certain numbers of firms with the largest market share in the industry, commonly CR4 (calculation based on the market share of the top four leading firms in an industry); CR8 (calculation based on the market share of the top eight leading firms in an industry); and Herfindahl-Hirschman Index (HHI) that measures the concentration level of the market structure based on the total players of the industry which ranges from 0 (perfect competition) to 1 (monopoly). The SCP paradigm has a wide-range of implications on the mechanism of understanding the industries economically. The assumptions of industrial organization economics based on the SCP paradigm particularly offer increasing knowledge of strategists on the determinants associated with competition in any industry. Therefore, recognizing the relationships amongst variables under the SCP paradigm helps both decision-makers in strategic setting and industry policy making (Matyjas, 2014).

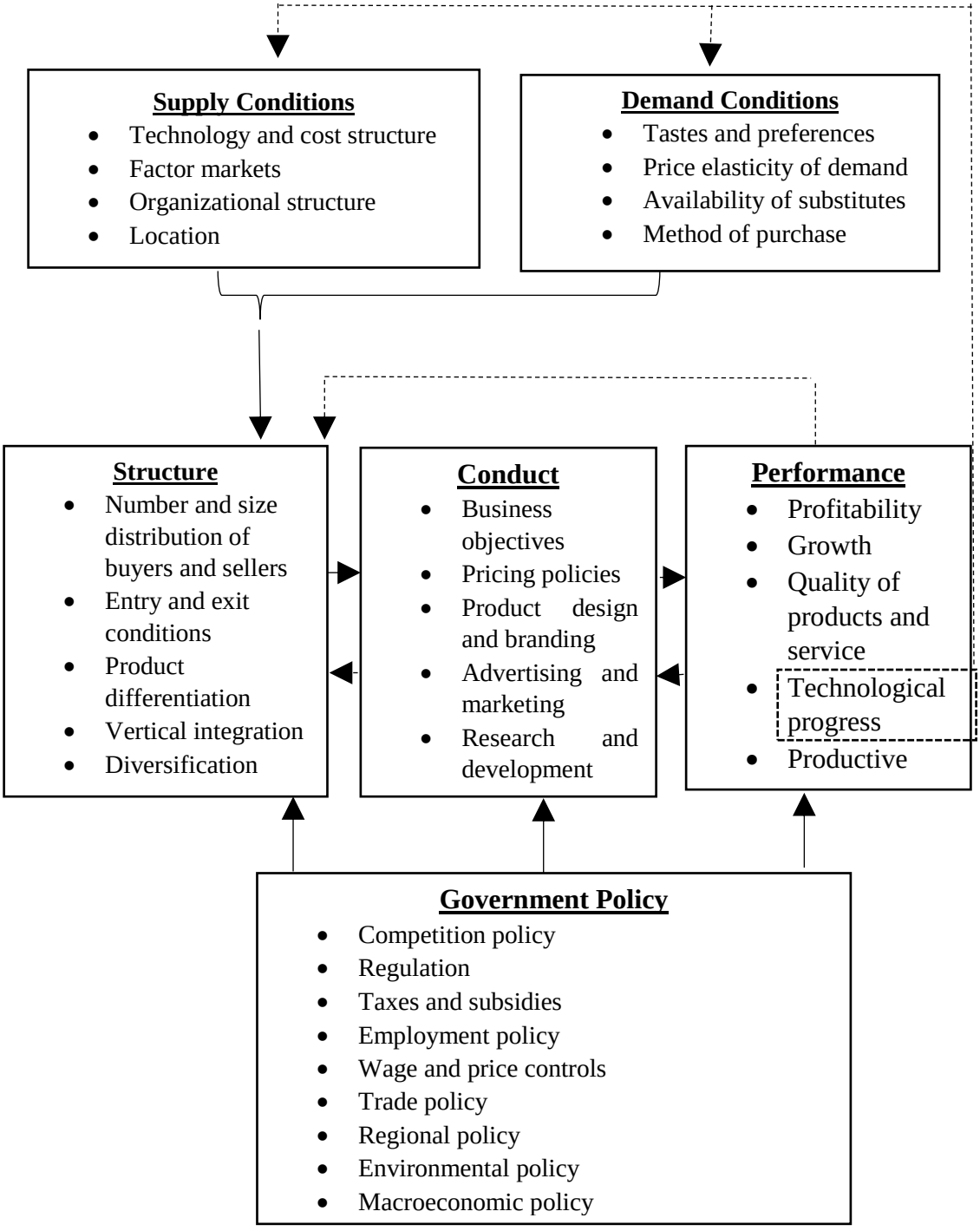

Figure 2.2 SCP Paradigm
Source: Adopted from Lipczynski et al., (2013, p.7)

2.6.7.1 Market structure

Market structure, as one of the key components in SCP paradigm, leads to the market behaviors of a firm. Many economists commonly distinguish one type of market from

another based on market characteristics which are generally depicted by the term of market structure (Bain, 1956; Lipczynski et al., 2013; Scherer & Ross, 1990). By reviewing microeconomic theory known as the neoclassic theory of the firm, four typologies of market structures can be found; they are perfect competition, monopolistic competition, oligopoly, and monopoly. The three most important characteristics of a market to reflect the market structure are the number of firms, the degree of barriers to entry, and the degree of product differentiation (Bain, 1956; Lipczynski et al., 2013; Scherer & Ross, 1990). The details of the typologies are demonstrated in Table 2.4.

Table 2.4 Neoclassical theory of the firm: a typology of market structures

	No. of firms	Entry conditions	Product differentiation
Perfect competition	Many	Free entry	Identical products
Monopolistic competition	Many	Free entry	Some differentiation
Oligopoly	Few	Barrier to entry	Some differentiation
Monopoly	One	No entry	Complete differentiation

Source: Adapted from Lipczynski et al., (2013, p. 65)

These four models of market structure can be treated as a continuum from the most competitive to the least competitive market, which corresponds to the perfect competition to monopoly. The monopolistic competition and oligopoly as the intermediary markets indicate a medium level of competition in between the perfect competition and the monopoly, whereas monopoly is the least competitive type of market (Mohammed, 2016).

Bain (1951) and Weiss (1974) pointed out the essence of market structure measurement is the concentration ratio. Concentration degree can be high, moderate, and low for an industry to reflect a market structure that can be characterized as one of the four market structures. A higher degree of market concentration corresponds to a less competitive market and a greater inclination toward monopoly (Bain, 1951; Gale, 1972).

Martel (1974) measured the market structure of the U.S. lodging industry and indicated that the concentration ratio based on the largest four firms in the industry increased from 16.7% to 36.9% from 1965 to 1972, respectively. The concentration level reflected that the U.S. lodging industry was characterized as monopolistic competition based on Bain (1956)'s concentration ratio measurement. Matovic (2002) found that the concentration ratio based on the largest four firms in the U.S. lodging industry dropped to 17.6 % in 1999, which meant that the U.S lodging industry became less concentrated at that time. Baum and Mudambi (1994) conducted a research based on the UK package tour industry and concluded that the industry can be characterized as an oligopolistic market structure. Hotel and tourism-related industries are neither a perfect competition nor a monopoly, and they are evidently either a monopolistic competition or an oligopoly.

2.6.7.2 Criticisms of SCP paradigm

The SCP paradigm is developed based on the neoclassical microeconomic theory that emphasizes how the efficacy and utilization of products perceived by consumer influences supply and demand (Bain, 1956). The SCP particularly compares the structure of perfect competition and monopoly. However, the form of oligopoly fails to provide a clear-cut conclusion on the relationships among market structure, conduct,

and performance (Lipczynski et al., 2013). For instance, it is ambiguous whether a less concentrated oligopolistic structure would lead to better market performance or not.

The difficulty of determining which variables belong to structure, conduct, and performance is argued by Lipczynski et al. (2013). For instance, product differentiation, vertical integration, and diversification are also conducted by firms, which are commonly treated as structure variables. However, Lipczynski et al. (2013) argued that these are also common strategies as firms make their own choices, such as diversification and vertical integration. Therefore, from a long-run point of view, these can also be variables of conduct.

Sawyer (1985) argued that the SCP paradigm is a static model for only short-run equilibrium. SCP lacks the evolution of structure variables, the influences on conduct variables, and performance in future structure. For example, the model is only a snapshot of an industry structure and conduct (firms' behavior) at a particular moment. The structure changes of industry cannot be tracked, and they might result in unexpected forms of implementation and performance.

As shown in Figure 2.2, SCP perceived diversification as one of the variables of the structure. Based on Brotherton (1999)'s study, diversification can also be perceived as a variable of conduct because of its effect on firm performance, which is a strategic choice in a long run. Second, a large scale of diversified services and products can be commonly seen in the hospitality and tourism industries, which means that diversification can be treated as a variable of conduct in SCP paradigm.

2.6.7.3 SCP paradigm applied into tourism context

Davies (1999) stated that applying SCP in tourism and hospitality industries is difficult for two reasons: the challenge to set the boundaries of the industries and the lack of readily available data. Table 2.5 summarizes the tourism and hospitality studies that took SCP as the theoretical foundation. Davies' (1996) study pioneered the application of the SCP paradigm in the hotel industry in the UK and demonstrated the significant connection of SCP variables. He also pointed out that firm-level factors influence hotel profitability. Davies (1999) found that the UK hotel industry is oligopolistic, and that market concentration and hotel profitability has a negative relationship. Pan (2005) critiqued this study because hotel sales consist of many other services sales, such that, using the total sales could have influenced relationship testing. Pan (2005) used room sales only to calculate market concentration and provided a contradictory view that concentration is positively related to hotel profitability.

Baum and Mudambi (1994) asserted that the package tour industry is oligopolistic. Davies and Downward (1998) examined the market contestability and competition based on the UK package tour industry based on the application of SCP paradigm. Most studies (e.g, Baum & Mudambi, 1994; Sheldon, 1986) that applied SCP into the package tour industry evaluated the competition and contestability of the industry.

Table 2.5 Traded studies that applied the SCP paradigm in the hospitality and tourism industries

Study	Sample	Dependent Variables	Independent Variables	Major Findings
Sheldon (1986)	U.S. package tour industry in	Function and structure of the industry	Tourists characteristics	The pattern in the market is that larger companies implement a

	1978, 1982, and 1985		Vacation mode	vertical integration to reduce costs.
Baum and Mudambi (1994)	UK package tour industry	Industry price	Market concentration Market demand	Market characteristics influence the competitiveness of the industry based on SCP.
Davies and Downward (1996)	65 hotels during 1989−1993 in the UK	Turnover	Market share; Market concentration; Unemployment rate; Firm-specific dummy variables	SCP variables are significantly related to each other. The profitability of hotels is also affected by firm-level factors.
Davies and Downward (1998)	U.K. package tour industry	Return on Sales (ROS)	Market share; Market concentration; Unemployment rate	The competition and contestability in the UK package tour industry are explored. The results hardly supported the contestability hypothesis.
Davies (1999)	36 hotel firms during 1989−1994 in the UK	ROS	Market share; Market concentration; Unemployment rate; Firm-specific dummy variables	Market share is suggested as a key strategic variable for a firm, and market concentration has a negative relationship with firm profitability. The UK hotel industry is oligopolistic.
Matovic (2002)	67 hotel brands in the US from 1996−1999.	EBITDA (Earnings Before Interests, Tax, Depreciation, and Amortization)	Market share; Barrier to entry; firm growth rate; competition (number of competitors)	Market share, firm growth rate, and entry barrier positively affect firm performance, whereas competition has a negative relationship with firm performance.
Pan (2005)	International hotels in areas of Taipei, Taichung, and Kaohsiung of Taiwan, from 1989 to 2000	before tax ratio of accounting profits	Market concentration in room market and food and beverage market; Location	Market concentration in rooms affects hotels profitability positively, and location can also affect hotels profitability.

Zhao (2007)	10 Chinese economical types of hotel chains from 2004−2005	Return on Investment	Market concentration; Barrier of entry	The market structure trend is predicted as concentrated-separated-concentrated. Market structure changes led to the differentiation of products and increased barriers to entry in the Chinese hotel market.
Tung et al. (2010)	360 Taiwanese international hotels from 1995−2006	Profitability Sales growth rate	Market share; Advertising intensity; Occupancy; Location; Market concentration; Capital intensity; Labor intensity; Total operating costs	Two-way effects occur between market structure and strategic behavior. Market share positively influences firm profitability.
Sheel (2016)	64 restaurant corporations in the US	ROA ROE Economic profit (EP) Total Market Value (TMV)	Firm effects (Size and Beta); Industry effects (Using petroleum and natural gas industry as a control group)	A direct relevance of SCP is found; industry factors affect firm performance; a distinct dominance of industry-effect over firm-effect is observed in both accounting and value-based performance measures.
Mohammed (2016)	126 hotels in Hong Kong	Dynamic price pattern	Demand (aggregated room sold); Occupancy; Seller density; Size; Star rating; Class; Location	The demand, star rating, class, and price change frequency positively influence price dispersion.

Source: Adapted from (Mohammed, 2016, p.63)

2.7 Hypotheses development

2.7.1 Product diversification and firm performance

Hilman (2015) indicated that theories and perspectives (e.g., the views of the resource-based and market power) support product diversification as a useful corporate strategy.

According to the RBT, product diversification generates a synergy and economies of scope through internalization in which core resources for building competitive advantage can be well allocated, thereby increasing firm performance (Li & Greenwood, 2004). According to Amit and Livnat (1988), product diversification creates a synergy among different operations and reduces the probability of bankruptcy. For instance, a synergy can be built via sharing firm's tangible resources, common managerial and technological knowledge, and its distinctive competitive advantages among business units and leveraging them in new product areas (Chatterjee & Wernerfelt, 1991; Penrose, 1959; Tanriverdi & Venkatraman, 2005). Muzyrya (2010) found that costs of a firm can be reduced when the firm diversifies into new product markets because some of its transactions are internalized. Furthermore, many large firms increase the degree of product diversification as one of their sources of competitive advantage (Hoskisson & Hitt, 1990). Product diversification is also implemented as a strategy to escape from the industries with a poor profitability (Christensen & Montgomery, 1981). From the perspective of market power, diversified firms gain a competitive advantage over focused firms, and George (2007) proposed that the advantage can be gained through anticompetitive practices such as predatory pricing, mutual forbearance, and reciprocity.

There are some empirical supports. Rumelt (1982) found that 86% of Fortune 500 Firms diversified their operations into more than one business in 1974. The positive linear relationship between product diversification and firm performance has been supported by abundant studies (Bodnar et al., 1997; Han et al., 1998; Kuppuswamy & Villalonga, 2015; Morck & Yeung, 2003). Rumelt (1974) confirmed that product diversification can be a prospect to maximize the profitability of firms in competitive and slow-growth industries because of increased market power. Chiao,

Yu, Li, and Chen (2008) explored the emerging economy of Taiwan and found that the degree of product diversification positively affected firm performance in a sample of multinational firms from Taiwan.

In the hotel industry, product diversification is commonly implemented as a strategy to absorb demand externalities, share resources, and intra-firm knowledge, and reduce operational costs (Lin & Liu, 2000). Yang et al. (2017) suggested that product diversification provides competitive advantages to hotel firms by leveraging their loyal guests who keep loyal with new products or services that are offered by same hotel firms. Gan and Hernandez (2012) stated that hotel firms with a high degree of product diversification have the capability to charge a price premium and set a collusive pricing strategy to boost their room rates. Additionally, from the perspective of RBT, as hotel firms offer service-related products mainly, employees can easily utilize their skills and knowledge gained from previous training for one service-related product to new service-related product along with product diversification increased (Yang et al., 2017). Therefore, the positive relationship between product diversification and firm performance is hypothesized.

In the meanwhile, some scholars proposed that the relationship between product diversification and firm performance is non-linear (i.e. Park & Jang, 2012; Park & Jang, 2013b; Tallman & Li, 1996). From the perspective of transaction cost theory, Williamson (1981) asserted that transaction costs increase while a product or service is being transferred from one stage to another, in particular, new technological capabilities are required to produce new products or services. Jone and Hill (1988) hypothesized that product diversification may increase internal bureaucratic costs to a certain degree, which can lead to a gradual decrease of the firm performance. In fact, to combine the perspectives of the resource-based theory and transaction cost theory,

firm performance varies with product diversification in a nonlinear relationship. Tallman and Li (1996) mentioned that while a firm expands its strategic resources, a failure appears once product scope exceeds the resources and management scope and management capabilities. Grant, Jammine, and Thomas (1988) mentioned that the strain is growing on top management because they try to manage an increasingly disparate and less familiar portfolio of businesses. Markides (1995) identified a series of costs may appear once increasing the scope of product and operations, such as control and efforts losses, coordination costs, costs related to diseconomies, inefficiencies from conflicts across businesses, and internal capital market inefficiencies. Therefore, the non-linear relationship between product diversification and firm performance is proposed as the degree of product diversification is increased to a certain point, the benefits to firm performance reaching to a maximum, and then the benefits decreasing as costs are increased (Nachum, 2004). Based on the preceding arguments, we proposed the following hypothesis:

Hypothesis 1a: Product diversification positively influences firm performance.

Hypothesis 1b: The quadric product diversification negatively influences firm performance.

2.7.2 Moderating effect of geographic diversification

The definition of geographic diversification is that a firm operates its businesses in multiple geographic markets (Kang & Lee, 2014). Bartlett and Ghoshal (1999) proved that multinational enterprises (MNEs) are capable of arbitraging in different markets. Additionally, according to Delios and Beamish (1999)'s study, a positive relationship between geographic scope and firm performance had been proven by multinational

enterprises that obtained a greater return on its proprietary assets, such as brand equity, patents, or some unique processes of productions, in different markets.

In the hotel industry, Kang and Lee (2014) suggested that the geographic diversification helps hotel firms' access to different markets. From the view of market power generation, geographic diversification creates a conglomerate power across multiple markets and increases bargaining power, which in turn increases profit (Montgomery, 1994). Barney and Hesterly (2008) found that hotel firms with the high degree of geographic diversification can build a strong bargaining power and dominant position in a market. Furthermore, as the nature of the hotel industry is highly affected by the seasonality and the sensitiveness of environment changes and local regulations (Barney & Hesterly, 2008; Schmidgall, 2006), a great portfolio effect from geographic diversification can be gained by hotel firms than firms in other industries (Kang & Lee, 2014). Hence, the geographic diversification strategy is critical in mitigating the variance of return or risk by hotel firms which are highly affected by seasonality and local contingency factors.

Nevertheless, as product diversification creates a synergy among business units in a firm (Amit & Livnat, 1988), geographic diversification provides a great opportunity for the firm to achieve the synergy in different geographic locations (Kang & Lee, 2014). As product diversification serves as a strategy for firms to escape from an industry with a poor profitability (Christensen & Montgomery, 1981), a geographic diversification may assist the firms to enter a profitable industry at specific regions. In addition, from a marketing perspective, a firm can sell a hurdle of products to customers who are from different geographic locations along with a degree of geographic diversification increased (Varadarajan, DeFanti, & Busch, 2006). In other words, geographic diversification benefits a firm because a large diversity of products

can satisfy heterogeneous customers' needs in different geographic regions with more options for marketing strategies (Kekre & Srinivasan, 1990). The learning experiences a firm gained from different geographic markets assists the firm to develop better products for targeting markets and then to increase profitability (Kekre & Srinivasan, 1990; Varadarajan et al., 2006). Moreover, Chang and Wang (2007) indicated that a firm can gain a great profit stability and increased economies of scale and scope by a substantial number of shared resources and interdependencies among its various businesses from an integration of product and geographic diversification. In short, a firm with geographic diversification has a better opportunity to create a synergy in different geographical locations and leads to a greater effect of product diversification on the firm performance than a firm without geographic diversification. That is, a firm with a higher degree of geographic diversification has a better understanding of different geographic markets to develop better products for targeting markets and leads to a greater effect of product diversification on the firm performance than a firm with a lower degree of geographic diversification. Accordingly, Hypothesis 2 is proposed as follows:

Hypothesis 2: Geographic diversification positively moderates the relationship between product diversification and firm performance.

2.7.3 Moderating effect of product relatedness

Wrigley (1970) defined business relatedness as the logic and extent to which different business units are related. Rumelt (1982) defined it as the similarities among organizational units which are reflected from central dimensions such as markets, products, and key resources. Palich, Cardinal, and Miller (2000) suggested that the degree of relatedness among business units determines the outcome of diversification

strategy. Tanriverdi and Venkatraman (2005) pointed out the meaning of relatedness in diversification and synergy potential, as well as the relatedness of each business unit with a core business unit. Scholars have established different types of relatedness, including technology (Pehrsson, 2006), resource (Szeless, Wiersema, & Müller-Stewens, 2003), and product relatedness (Luo, 2002). Pehrsson (2010) argued that core resources are hard to employ and less advantageous to local exploit core competencies without the relatedness. According to the Pehrsson (2010)'s study, the relatedness in business was proven significant between a core business unit of a parent firm and its subsidiaries located in foreign markets.

Product relatedness was defined as "*the extent to which a firm's different lines of business or industries are linked"* (Luo, 2002, p1). Relatedness in the product is beneficial because core competence can facilitate a set of expansion activities (Markides & Williamson, 1994). For instance, a certain product technology can be leveraged by firms' human capital via inter-organizational relations to exploit similar technologies for different products. Additionally, Hansen and Løvås (2004) highlighted that the relatedness brings competitive advantage for a firm in a foreign market because local competitors can hardly imitate core competence exploitation.

Jiménez, Benito-Osorio, and Palmero-Cámara (2015) argued that the higher the degree of relatedness in product diversification, the greater the incentives that a firm entering different markets with a high potential return. According to the study of Kumar (2009), the higher degree of relatedness in the product can lower the costs of acquiring knowledge and adapting new environments when the needs and activities of business units of a firm are similar. By contrast, when a firm has a lower relatedness in the product, therefore, its products portfolio is less related to each other and have

more different requirements for different products, experience gained from developing other products is less useful among business units (Jiménez et al., 2015).

Furthermore, according to Penrose's (1959) growth theory, unused resources can be substantially utilized by implementing a diversification strategy to grow a firm. From a practical perspective, a firm can accumulate skills, knowledge, and experience in specific areas so that the firm may keep investing in related areas as a growth strategy (Zollo & Winter, 2002). The higher degree of relatedness in the product helps a firm to facilitate the sharing of facilities, raw materials, marketing network, experience, skills, and other firm-specific resources among all business units or products (Jiang, Chen, & Chan, 2005). Therefore, the higher the degree of product relatedness, the better resources sharing among business units. This strengthens the relationship between product diversification and firm performance. The lower the degree of product relatedness, the less the products portfolio is related to each other within a firm, which can lead to additional costs for gaining new knowledge and adapting to the new environment and weaken the result of product diversification on firm performance. Ultimately, it is logical to expect that the degree of product relatedness positively affects the relationship between product diversification and firm performance. As such, we put forth the following hypothesis:

Hypothesis 3: Product relatedness positively moderates the relationship between product diversification and firm performance.

2.7.4 Moderating effect of human capital

Markides and Williamson (1994) argued that a diversification strategy built upon distinctive and inimitable resources and capabilities can lead to sustainable competitive advantages. Montgomery and Wernerfelt (1988) indicated that firm-

specific resources can generate competitive advantages in a single industry or in a few related industries. Tecc (1982) argued that firm-specific resources (such as human resources) are more important than non-specific resources (generic resources) in implementing a diversification strategy because synergetic benefits can be created by enlarging economies of scope.

Human capital is a core element of intellectual capital (IC) for most contemporary organizations (Nonaka & Kakeuchi, 1995). Human capital is a key resource for most firms with attributes such as education, experience, knowledge, and skills. A firm that leverages inimitable humane capital sustains competitive advantage in a long-term, which can be regarded as one of the major sources of organizational success (Bontis & Serenko, 2007). Bontis (2004) emphasized that human capital is also the source of firm innovation and strategic renewal. According to Pennings, Lee, and Van Witteloostuijn (1998)'s study, the features of a firm's top management team can impinge the firm performance, such as the educational level and industry experience of CEO.

Special knowledge and skills from human capital as firm-specific intangible resources primarily add value to firm products (Bharadwaj, 2000). Intangible resources may be more significant than tangible resources in forging a competitive advantage (Hitt, Bierman, Shimizu, & Kochhar, 2001). Therefore, the capabilities of an organization may rest in its human capital. Particularly, in service firms, professionals need to be formally educated or trained to gain knowledge and provide services. D'Aveni (1996) argued that the value of the educational background of professionals benefit their whole career because a top institution normally allows professionals to maintain and develop an elite social network which may serve as one of the sources of customers for firms.

Human capital is a vital resource in implementing a strategy (e.g. Lee & Miller, 1999; Hitt, Hoskisson, & Kim, 1997; Hitt et al., 2001). As a product diversification strategy allows firms to obtain new opportunities to enlarge economies of scale and scope (Nayyar, 1992). Product diversification can provide new opportunities to firms by sharing skills and knowledge of employees across business units. The interactions of new products and existing products may create more businesses than before because of the utilization of inimitable human capital (Hitt et al., 2001). For instance, a tourism firm may attract new clients or serve existing customers by offering a bundle of products and services, such as a one-stop service to plan a trip containing hotels, tickets, and transportation. Such firms can achieve economies of scale from diversification by fully leveraging internal resources, especially human capital because firms need to leverage the intelligence of human capital to learn new markets and gain new customers.

Furthermore, Markides and Williamson (1994) stated that human capital as knowledge-based resources are often deployed to serve customers and these resources are generally integrated with other resources to create value for firms. The new series of products may stimulate the creative use of existing human capital, and potential synergies can be achieved by re-engineering managerial teams (Hitt et al., 2001). For instance, when firms assign different managers for certain new products or services, the quality of the products or services is likely to be improved, which in turn increases profit.

Moreover, Pennings et al. (1998) proposed two indicators to measure the human capital, namely: level of education and industry experience. According to Becker (1964) and Mincer (1974)' studies, professionals who have a higher level of education are more likely to provide consistent and high-quality services. According

to Arrow (1973)'s study, potential customers may select their service providers based on professionals' credentials. In fact, as tourism industry and hotel industry deliver service-related products, people may be hard to maintain a consistency as each employee has a different background. As Hitt et al. (2001) asserted that human capital can facilitate the development of product diversification strategy, based on the RBT, human capital provides valuable intangible resources that a firm can leverage to conduct product diversification. In other words, a quality human capital can provide more valuable intangible resources with which firms can leverage to carry out product diversification strategy, thereby leading to a better effect on firm performance than firms without quality human capital. The high-quality human capital can result in a better outcome of product diversification on firm performance due to the additional value of firms' products.

To the best of our knowledge, the information supporting the moderating effects of human capital on the relationship between diversifications strategy and firm performance remains scarce in the tourism and hospitality fields. The logic is based on the RBT and borrowed from the professional service industries such as law and accounting service industries. Hence, we proposed Hypothesis 4 as follows:

Hypothesis 4: Human capital (measured by an average number of years of employees' education in a firm) positively moderates the relationship between product diversification and firm performance.

2.7.5 Moderating effect of flatness in organizational structure

The flatness of an organizational structure depicts the relative number of management levels within an organization (Huang, Rode, & Schroeder, 2011). The more complex an organization structure is, the greater number of managerial levels the organization

has (Burns & Stalker, 1961). The fewer number of hierarchical levels in an organization, the higher degree of flexibility is in the organization (Damanpour, 1991; Vickery, Dröge, & Germain, 1999). A flat structure provides power decentralization (Daft, 1996). The proper decentralization of power to subsidiaries creates the convenience of operation and renders the degree of freedom for subsidiaries to run local businesses (Stein, 2002). A large scale of operation increases the managerial and monitoring costs for the principal to agents. Decentralization benefits agents who are motivated by the transfer of power and additional incentives from principals, so that principals relieve the burden of cost and reduce the restriction placed on agents (Grossman & Hart, 1986). In short, the flat structure facilitates power decentralization in a firm, which increases the efficiency of local businesses and achieves a great corporate performance.

The flatness of organizational structure affects how employees interact each other and how responsibilities and authorities are assigned within an organization (Huang, Rode, & Schroeder, 2011; Zhang, Zhao, & Qi, 2014). Flynn and Flynn (1999) mentioned that the few layers in the chain of command make hierarchical load reduced and decisions moved to where information occurs, which improve the efficiency of an organization. By contrast, an increase in the number of managerial layers tends to impede organizational efficiency as decisions are often pushed to excessive managerial layers and made by people who seldom have first-hand and precise information (Vickery et al., 1999). Therefore, the flatter structure of a firm can decrease the costs of cross-functional communication and avoid distortions regarding information diffusion (Galbraith, 1977). The shorter process for an approval on a decision makes different parties within a firm easier to participate in information

sharing and communicating, which improves the efficiency of decision making (Zhang et al., 2014).

In a long run, different organizational structures lead to different levels of management efficiency, particularly in the fast-changing environments such as China (Zhu & Jiao, 2013). Usher (1999) pointed out that in a fast-changing environment, a flat structure benefits the adaption of rapid changes from surroundings. Zhu and Jiao (2013) stated that a flat structure is beneficial and efficient to firms' performance in China, an emerging market, where the institutional and market environments are rapidly changing. Carley and Lin (1997) argued that a match of organization structure and environment complexity is advantageous in optimizing firm performance without considering information distortion. Motta (2003) mentioned that a flat structure may be helpful in overcoming the financing restriction and the weak ability to extract information on firm profits for investors. In short, a flat structure suits firms in the China market and the flat structure facilitates the optimization of firm performance.

A flat structure reduces hierarchical load and improves an efficiency of decision making (Nahm, Vonderembse, & Koufteros, 2003; Zheng et al, 2014). If a firm makes a decision of increasing a diversity of products, the efficiency of the decision may be influenced by the degree of flatness in a firm's structure. According to RBT, as resources and capabilities can be shared among all business units, a flatter organization reduces barriers associated with cross-functional communication and facilitates joint decision marking and cooperation (Galbraith, 1977). From an operational perspective, employees in a flatter firm can be easier to share resources and to cooperate with others for operating businesses, and the flat structure of the firm encourages the set of internal activities among business units (Tsai, 2002). Therefore, the efficiency of decision associated with product diversification in a firm is affected

by the flatness of the firm, which in turn influences the effect of product diversification.

Zhu and Jiao (2013) asserted that product diversification as a strategy enables to create an internal managerial market within a flat firm. Motta (2003) indicated that an increase in the number of business units increases job opportunities and competitions for managers. Lado, Boyd, and Hanlon (1997) found that simultaneous cooperation and competition may stimulate a greater degree of knowledge sharing, technological progress, and market expansion. Furthermore, it was indicated by prior research that product diversification enables to generate an internal capital market via a flat organizational structure because the flat structure improves the flexibility of capital allocation in increasing profitable investments and achieving a better performance (Zhu & Jiao, 2013). For instance, an efficient capital allocation transfers resource out of those less profitable investments into more profitable investments with sufficient funds (Stein, 1997).

The flat structure suits in a fast-changing environment and adds values on the implementation of a product diversification strategy such as the decentralization of power, the creation of an internal capital market, the efficiency of capital allocation, the efficiency of resources sharing, and the efficiency of decision making and information dissemination, which in turn improve firm performance (Gittell, 2001, Zheng et al, 2014). On one hand, the effect of product diversification on firm performance can be influenced by the organizational flatness because a flat structure smoothens the information flows and increases the quality and speed of information dissemination, which in turn facilitates the cooperation among all functional departments (Zheng et al, 2014). On the other hand, an improvement of efficiency of capital allocation via a proper decentralization and a creation of synergy of internal

capital and managerial market can be gained in a flat structure as well, which may bring a positive effect on the relationship between product diversification and firm performance (Zheng et al, 2014; Zhu & Jiao, 2013). To sum up, a flat structure reduces the cost of cross-functional communication and avoids information distortions, so that the efficiency of decision making associated with product diversification within a firm can be improved, which in turn influences on firm performance. Additionally, a flatter structure can lead to a better effect of product diversification on firm performance because the flexibility of capital allocation makes investments more efficient and profitable; the power of decentralization can be leveraged by managers for making quick frontline decisions, and efficiency of decision making can be improved because of the smooth information dissemination in a flatter structure. As such, we proposed the following hypothesis regarding the context of China tourism industry:

Hypothesis 5: Flatness in organizational structure positively moderates the relationship between product diversification and firm performance.

2.7.6 Moderating effect of market structure

Prescott (1988) considered market environment as a significant contingency variable for the relationship between firm strategy and performance. In the field of strategic management, scholars conceptualized market environment as one of the important constructs in understanding both organizational behavior and performance (Hofer & Schendel, 1978). Several models have been developed, such as the industry structure model (Porter, 1981), the organizational field model (Dill, 1958), the cognitive model (Weick, 1979), and the ecological and resource dependency model (Aldrich, 1979). Regardless of which models were used to analyze the market environment, Prescott

(1988) found that the characteristics of market environment influence decision-making through the perception of the management and the dimensions of a market structure. Economists applying SCP paradigm have concluded that the characteristics of the market such as growth rate and concentration ratio hugely impact both the strategic behaviors and performance of firms directly or indirectly (Scherer, 1980). Some empirical studies can be found. Ramanujam and Venkatraman (1984) found that market characteristics affect the performance of business units, while Rochart (1979) indicated that market characteristics can help determine certain factors critical to the success of a business strategy. Porter (1980) developed a measure evaluating market environment and found that the market environment influences the relationship between a firm's business strategy and performance. Prescott (1988) pointed out that the characteristics of market structure moderate the strength of the relationship between a set of strategic variables and performance.

The two ways of examining the moderating effects of variables are as follows: 1) including interaction variables in an additive model; 2) estimating parameters of an additive model for the subgroups of a total sample (Arnold, 1982). Hitt, Ireland, and Stadter (1982) examined the moderating effects of strategy and the type of market by using subgroups and found that both the separate strategy and the type of market have significant moderating effects on the relationship between functional areas and performance. Furthermore, McArthur and Nystrom (1991) studied market environment dynamism, complexity, and munificence as moderators of the strategy-performance relationship by assessing the interaction variables. Environmental dynamism explained the degree of market instability over time and turbulence caused by the interconnectedness among organizations; environmental complexity refers to the degree of heterogeneity and dispersion of an organization's activities, and

environmental munificence is described as the extent to which a market environment can support sustained growth (Aldrich, 1979). McArthur and Nystrom (1991) found that environmental dynamism has a stronger impact than complexity on performance and has exhibited both the direct and the moderating effect on performance, whereas environmental complexity only played as a moderator in the researched relationship.

Justin and Litsschert (1994) examined the paradigm of strategy-environment-performance based on the Chinese electronics industry and found that the increased market uncertainty perceived by managers is positively related to a defensive strategy that enhances performance. Nandakumar, Ghobadian, and O'Regan (2010) indicated that market dynamism and hostility moderate the relationship between business-level strategy and a firm's competitive performance. Nandakumar et al. (2010) also suggested managerial implications that a cost-leadership strategy works better under market conditions with low hostility and a differentiation strategy works better under a great hostility market. To sum up, the market conditions and characteristics have significant influences on the effects of strategies on performance because of the impacts of the market dynamics, the level of hostility, and the level of market uncertainty.

The diversification research following SCP paradigm indicated that diversification strategies may be a function of specific types of entry barrier which increased the concentration levels of market and cost structure barrier in relation to unrelated diversification (Singh & Montgomery, 1987). Christensen and Montgomery (1981) investigated the effects of market structure on the relationship between diversification strategy and firm performance and proposed that the market structure variables may moderate or confound the relationship between diversification and performance. The proposed relationships among market structure, firm performance,

and the related–constrained and unrelated-portfolio/business diversification strategies (see Table 2.2) are illustrated in Figure 2.3:

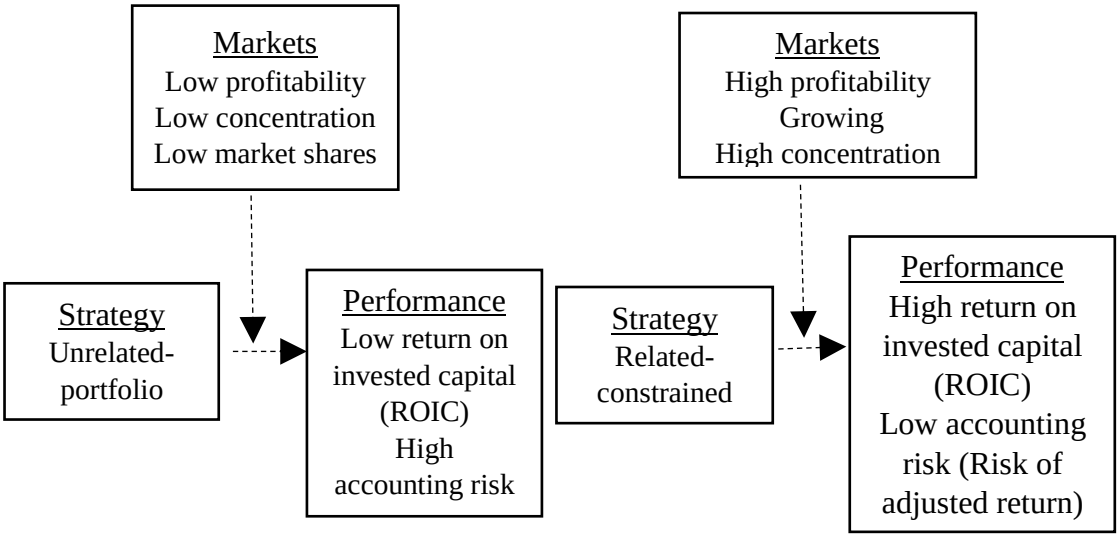

Figure 2.3 The conceptual framework of diversification strategies, market structure, and firm performance
Source: Adapted from Christensen and Montgomery (1981)

As shown in Figure 2.3 according to Christensen and Montgomery (1981)'s study, the related constrained type of diversification (see Table 2.2) in firms tend to obtain high returns because they operate in a highly concentrated and profitable market structure. The unrelated-portfolio type of diversification (see Table 2.2) in firms tend to have a low return because they operate in a highly fragmented and less profitable market structure. Therefore, the moderating effect of market structure is proposed on the relationship between different types of diversification and firm performance.

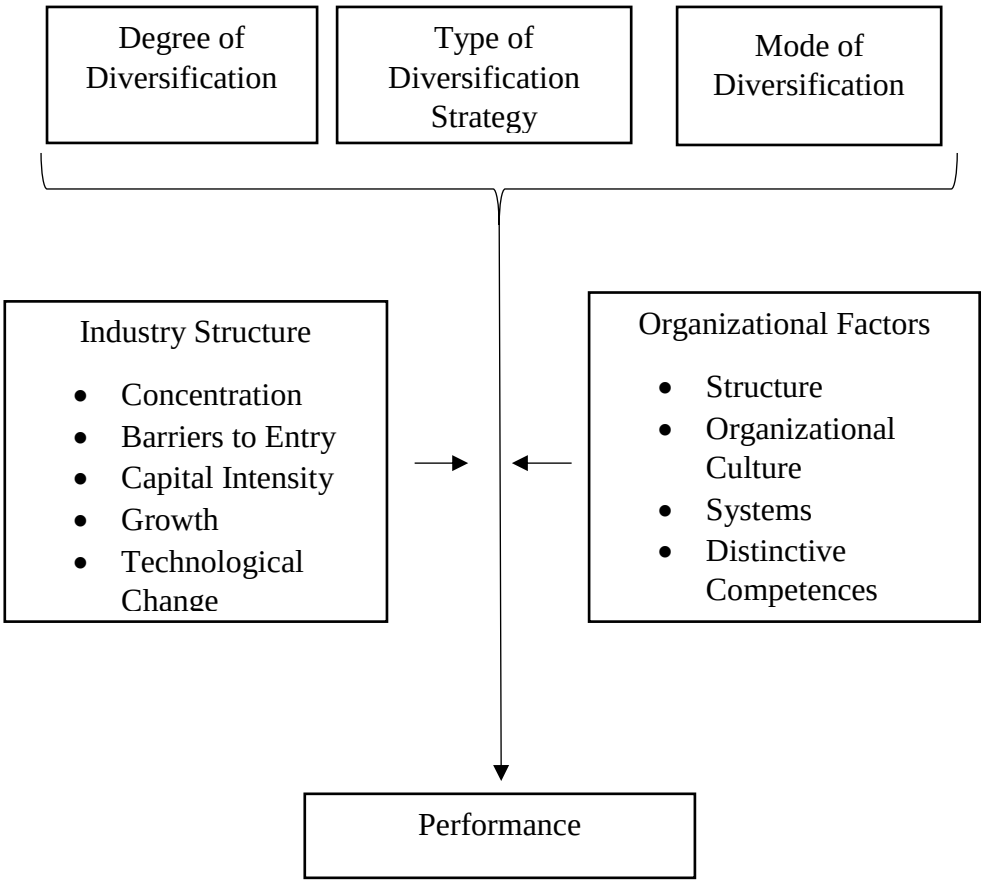

Figure 2.4 Conceptual framework of performance and diversification
Source: Adapted from Datta et al. (1991, p.531)

Datta, Rajagopalan, and Rasheed (1991) used an integrative theoretical framework (Figure 2.4) to review empirical studies on the diversification−performance relationship. Figure 2.4 depicts two types of moderating variables, namely, industry structure and organization factors. The review study argued that such factors serve important roles in influencing strategic setting and determining economic performance. Schemalensee (1985) indicated that industry-effect is more crucial than organization-effect in determining profitability for different firms. In fact, only a few studies have examined the moderating effects of industry conditions on the diversification strategy−performance relationship (Bass et al., 1978; Jones, Laudadio, & Percy, 1977; Miller, 1973). Several researchers argued that performance differences are usually attributed to differences in diversification

strategy that might be a set of artificial outcomes of industry influences (Beettis, 1981; Christensen & Montgomery, 1981; Grant & Jammine, 1988). Datta et al. (1991) pointed out that the consequence of a diversification strategy on performance is not consistent because of market profitability. There are only a few empirical studies. Rumelt (1982) found that firms implementing related diversification strategy outperformed firms implementing unrelated diversification after controlling industry effects. Additionally, according to Bass et al. (1978) and Jones et al. (1977), the concentration of a market influences the relationship between the degree of diversification and firm performance. To sum up, market conditions can affect the relationship between diversification strategy and firm performance because of market profitability and concentration.

When it comes to the effect of market concentration, Bain (1951) argued that firms in a highly concentrated market can earn more positive economic profits. A positive relationship between market concentration and profitability is observed from previous research (Christensen & Montgomery, 1981; Porter, 1981). Most of the inter-industry research conducted since then support the positive relationship between the concentration levels of market structure and profitability. Feeny and Rogers (1999) supported the positive relationship between market concentration and firm profitability. In the hospitality industry, Pan (2005) suggested that market concentration that was calculated based on hotel room revenue positively affects hotel firm profitability.

According to SCP paradigm (Bain, 1951, 1959; Mason, 1939, 1949; Porter, 1981), the high concentration of market structure allows a business environment to facilitate collusive behavior among firms in a market. Under a highly concentrated market, firms are more likely to be collusive to set market entry barriers and products'

prices that impede potential competitors entering the market (Bain, 1981). In fact, a firm often intends to diversify into a favorable industry and enlarges its economies of scope by increasing business lines and products and services to increase the concentration and preserve its profitability (Schilling, Zhang, Hill, Jones, & Wolter, 2009). Therefore, a firm in a highly concentrated market may have a better effect on product diversification because of a high profitability preserved. As product diversification increases market power and internal synergies via sharing resources, the effect of product diversification on firm performance under a highly concentrated market may be better because of the effect of market power and preserved profitability via setting more entry barriers for potential competitors than that under a low concentrated market.

In summary, market environment moderates the relationship between a strategy and firm performance (Beettis, 1981; Grant & Jammine, 1988, Prescott, 1988; Scherer, 1980). Regarding diversification strategy, Christensen and Montgomery (1981) empirically examined that the moderating effect of market characteristics on the relationship between different types of diversification strategies and firm performance. As Datta et al. (1991) reviewed that the significant moderating effect of market structure on the relationship between diversification and firm performance was empirically examined by Bass et al. (1978) and Jones et al. (1977). Lastly, from a perspective of SCP, the more concentrated market encourages firms' collusive behavior to preserve their profitability. Therefore, a firm with a product diversification strategy in a highly concentrated market is hypothesized to lead to a better firm performance than a firm in a low concentrated market. Accordingly, Hypothesis 6 was proposed as follows:

Hypothesis 6: Market structure (measured by the level of market concentration) positively moderates the relationship between product diversification and firm performance.

2.8 Conceptual framework

The conceptual framework in Figure 2.5 demonstrates the moderators of the market structure, geographic diversification, and three organizational factors influencing the relationship between product diversification and performance.

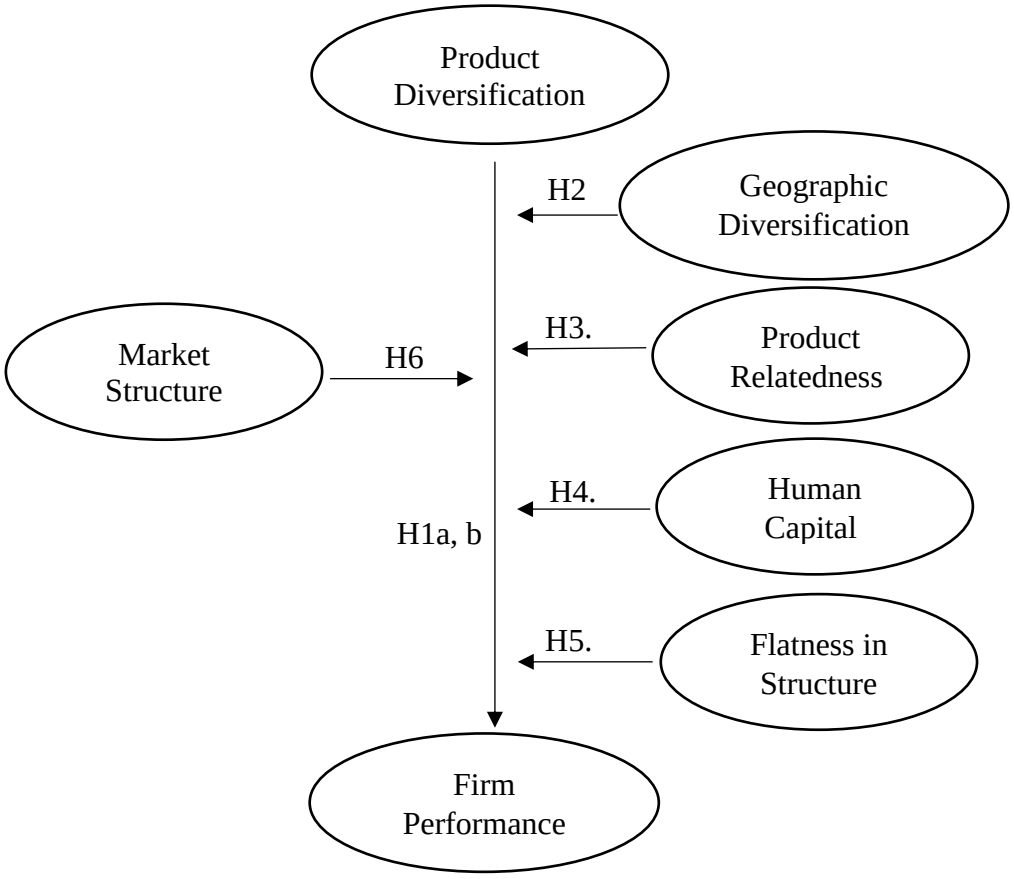

Figure 2.5 Conceptual model of this study

The proposition of the proposed conceptual model is established on the industrial organization economics literature, SCP model. The main three elements, structure, conduct, and performance serve as the foundation of this conceptual

framework. The literature on market structure aids in identifying the characteristics of market structure influencing the relationship between firm behavior and performance. Furthermore, the literature of diversification strategy from the field of strategic management contributes to identifying the effects of product diversification on firm performance as well as the moderating effect of geographic diversification on the relationship between product diversification and firm performance. In addition, the alignment of RBT and RDT with diversification explains the possibilities of intervening factors from both market and organization-self, which contributes to the moderating effects on the relationship between strategy and performance. Measurement details for each variable are presented in chapter three.

2.9 Summary of the chapter

This chapter presented an overall picture of the concept of diversification. The literature review on the motives and measures of diversification catered to a fundamental understanding of the domain of corporate diversification and its measurement. From the view of portfolio theory, the concept of diversification and its effect on the relationship between risk and return is demonstrated. Furthermore, theoretically, it seems that the RBT, RDT and SCP model explained the possible influences from an organization and a market on the relationship between diversification and firm performance. The next chapter further demonstrates the details of employed research methodology to achieve the research objectives of this study.

CHAPTER 3. METHODOLOGY

3.1 Chapter introduction

Following the literature review and conceptual framework in the previous chapter, this chapter demonstrates the methodology of this study, which illustrates the details to achieve the research objectives. This research is conducted by following the positivist research paradigm. This study was conducted in the Chinese tourism industry with the selected 26 traded firms. The study selected a sample of eight-year panel data of Chinese tourism firms traded on the main boards of the Shanghai and Shenzhen stock markets. The use of longitudinal data overcomes the limitation of the cross-sectional type of the study and the possible lag effects of the tourism firm's different diversification strategies on performance are captured (Mohammed, 2016).

The chapter begins with the research design. The study was designed to conduct the descriptive and Pearson's correlations, and panel regression analyses in order to investigate the causal relationships amongst the variables of interests. The sample selection with the details of selection criteria and the summary of the collected data were followed. A set of descriptions of statistical models on testing hypotheses were presented as well. After the presentation of the statistical models, the details of estimation methods for carrying out the statistical models were elaborated. Lastly, the chapter also provided the details of the measures of all relevant variables.

3.2 Research design

The research design is an essential part of every research, guiding researchers to achieve their research objectives (Collis & Hussey, 2013). A well-planned research design should match the research topic and clearly explain the process of conducting the research, providing details regarding sampling method, data collection, data analysis, interpretation, and reporting findings (Sarantakos, 2005). Sarantakos (2005) formulated a research design in five steps with critical questions in each step. The first step, the methodological construction of the research topic, concerns how will the research topic addressed in the study; the second step, sampling procedure, answers where and when will the topic be studied and whom are the subjects; the third step, data collection, addresses where and when will the subjects be found and how to gather data; the fourth is to analyze data and in what way will data be interpreted; The last step is how to communicate the findings to interested parties and the community.

This study followed Sarantakos (2005)'s proposed steps for designing research. In line with the first two steps to achieve the research objectives, this study, a quantitative research, designed to include descriptive and causal analyses. The descriptive analyses containing means, standard deviations, minimum, and maximum were conducted to characterize firms' product diversification and performance, as well as the causal analyses including panel regression estimations, were used to see causal relationships among relevant variables. These steps of designing research have been widely employed in abundant previous studies in the context of hotel, restaurant, and tourism business (Kang et al, 2011; Kang & Lee, 2014, Kang & Lee, 2015; Park & Jang, 2012, Park & Jang, 2013a; Park & Jang, 2013b).

3.3 Sample Selection

According to Wang and Xu (2009), two criteria were applied to select appropriated public-traded tourism firms for conducting this study, namely: first, firms operate products in the hotel industry (code H6110), tourism attraction operation (code N7852), and travel service-related industries (include the industries of code L7271, L7272, and L7279); second, firms gain the largest portion of revenue from the aforementioned industries. Selected firms are considered as tourism firms in this study. Furthermore, the financial data of all the firms used in this study are from the Sina and Sohu Finance websites which provide online financial news and stock trading information and collect annual reports from all traded firms in China. Up to the 1st of January 2018, a total of 35 tourism firms has traded in the main boards of Shanghai Stock Exchange (SHEX) and Shenzhen Stock Exchange (SZEX), including hotel, travel service, and tourism attraction operating firms. According to the latest Chinese Standard Industrial Classification (CSIC) released in 2011 by the National Bureau of Statistics (NBS) of the People's Republic of China, this thesis focused on the four-digit CSIC of the hotel industry (code H6110); tourism attraction operation (code N7852), travel service-related industries (include the industries of code L7271, L7272, and L7279).

When it comes to the measurement of diversification (product and geographic diversification), multi-product firms are not included in the revenue because each type of product is not clearly declared in their annual reports. Diversification is a common strategy for growing business among Chinese tourism firms. Most tourism firms adopt either product or geographic diversification, if not both. The popular unrelated industries that these firms also operate in for the growth of business apart from their core businesses

mainly include the real estate industry, the advertising industry, commodity trading, merchandise, and transportation. For instance, the Beijing Jingxi Culture & Tourism Co., Ltd (stock code: 000802, SZEX) engaged in the development of real estate, whereas the Huatian Hotel Group Co., Ltd (stock code: 000428, SZEX) entered both manufacturing and real estate industries. Tibet Tourism Co., Ltd developed locally traded products, promotions, and advertising business. An example was followed to explain the importance of applying the second selection criterion which was to see whether a firm gains tourism-related revenue as their main revenue source. The main revenue sources of the Besttone Holding Co., Ltd (stock code: 600640, SHEX) are selling hotel rooms, food and beverage services, and travel services only after 2012; it used to be Chinasatcom Guomai Communications Co., Ltd, without tourism related products and services.

This study defines all public-traded tourism firms as the population of the research. Ultimately, 26 tourism firms (Shown in Table 3.1) were selected from the tourism sector of stock exchanges (SHEX and SZEX) and their financial data of an eight-year period from 2008 to 2015 will be collected. The period from 2008 to 2015 is selected because the Chinese accounting principles were changed in late 2006. The new Accounting Standards for Business Enterprises (ASBE) released in 2006, took effect on January 1, 2007. Deloitte (2006) mentioned that the new issuance of Chinese ASBE facilitates the convergence between Chinese standards with International Financial Reporting Standards (IFRSs) so that the familiarity of incorporated new standards to investors worldwide enhances the investors' confidence in Chinese capital market and financial reporting. In addition, the new standards should also reduce the cost associated with accounting regimes under different jurisdictions in which firms operate. Furthermore,

there are indeed many effects brought by new ASBE on specific firms' financial reporting. For instance, according to the annual report of 2006 from China CYTS Tours Holding Co, Ltd (stock code: 600138, SHEX), the new ASBE mainly affected the income taxation, net income, long-term equity investment, consolidated financial statements reporting, and sale of financial assets. According to the 2006' s annual report of Guangzhou Lingnan Group Holdings Co., Ltd (Stock code: 000524, SZEX), the new ASBE mainly affected the income taxation, net income, long-term equity, consolidated financial statements reporting, and employee benefits payable. The annual report of Lingnan Group Holdings Co. Ltd clearly stated that its employee benefits payable and deferred tax liability affected the net income of the consolidated financial income statement.

Wüstemann and Wüstemann (2010) pointed out the concept of consistency in applying different accounting standards and suggested that an accounting standard once applied must be applied consistently in similar situations in the future in order to keep the consistency because of the need for comparability. Such that, investors and other users of financial statements can precisely and correctly compare the financial information of a firm. The consistency is one of the important characteristics or qualities that makes accounting information useful (FASB, 2015). Therefore, to maintain the consistency of financial data, the period from 2008 to 2015 is the most suitable for the study. Lastly, the statistical software, the version 14.0 of Stata, was used for analyzing the collected data.

Table 3.1 Selected Chinese tourism firms in Chinese stock markets (N = 26)

Stock Market	Stock Code	Name of Firm	The first trading day of IPO
	000033	Shenzhen Century Plaza Hotel Co., Ltd	3rd of January, 1994
	000428	Huatian Hotel Group Co., Ltd	8th of August,1996

Shenzhen	000430	Zhangjiajie Tourism Group Co., Ltd	29th of August, 1996
	000524	Guangzhou Lingnan Group Holdings Co., Ltd	18th of November, 1993
	000610	Xi'an Tourism Co., Ltd	26th of September, 1996
	000613	Hainan Dadonghai Tourism Centre (Holdings) Co., Ltd	28th of January, 1997
	000802	Beijing Jingxi Culture & Tourism Co., Ltd	8th of January, 1998
	000888	Emei Shan Tourism Co., Ltd	21st of October, 1997
	000978	Guilin Tourism Co., Ltd	18th of May, 2000
	002033	Lijiang Yulong Tourism Co., Ltd	25th of August, 2004
	002059	Yunnan Tourism Co., Ltd	10th of August, 2006
	002159	Wuhan Sante Cableway Group Co., Ltd	17th of August, 2007
	002558	Chongqing New Century Cruise Co., Ltd	2nd of March, 2011
	002707	Beijing UTour International Travel Service Co., Ltd	23rd of January, 2014
	300144	Songcheng Performance Development Co., Ltd	9th of December, 2010
Shanghai	600054	Huangshan Tourism Development Co., Ltd	6th of May, 1997
	600138	China CYTS Tours Holding Co., Ltd	3rd of December, 1997
	600258	BTG Hotels Group Co., Ltd.	1st of June, 2000
	600358	China United Travel Co., Ltd	22nd of December, 2000
	600358	Dalian Sunasia Tourism Holding Co., Ltd	11th of July, 2002
	600640	Besttone Holding Co., Ltd	4th of July, 1993
	600706	Qujiang Cultural Tourism Co., Ltd	16th of May, 1996
	600749	Tibet Tourism Co., Ltd	15th of October, 1996
	600754	Shanghai Jinjiang International Hotels Development Co., Ltd	11th of October, 1996
	601007	Jinling Hotel Co., Ltd	6th of April, 2007
	601888	China International Travel Service Co., Ltd	15th of October, 2009

Notes: Till the 9th of December 2016, the sample includes only one pause trading firm, Shenzhen Century Plaza Hotel Co., Ltd (SZEX 000033, which is also an "ST stock", "ST" means "special treatment" that is an indication of negative financial performance and risk of being detraded), because its financial data from 2008 to 2015 are fully available.

3.4 Models for testing hypotheses

This section describes the models and the estimation methods to test the hypotheses. The models contain interaction variables for needs to test moderating effects and relevant control variables for needs to control firm-specific factors.

The following equation (1) was used to test the Hypothesis 1a that hypothesized the positive effect of product diversification on firm performance in a linear relationship. Additionally, the equation (2) was used to test the Hypothesis 1b that hypothesized the negative effect of quadric product diversification on firm performance in a nonlinear relationship.

$$P_{i,t} = \beta_0 + \beta_1 PD_{i,t} + \sum_{n=1}^{5} \gamma_n Z_{i,t,n} + \varepsilon_{i,t} \quad (1)$$

$$P_{i,t} = \beta_0 + \beta_1 PD_{i,t} + \beta_2 PD_{i.t}^2 + \sum_{n=1}^{5} \gamma_n Z_{i,t,n} + \varepsilon_{i,t} \quad (2)$$

Where:

$P_{i,t}$ is firm *i* 's performance indicator at time *t*.

$PD_{i,t}$ is the product diversification of firm *i* at time *t*.

$Z_{i,t,1}, \ldots, Z_{i,t,5}$ are four control variables: firm size, firm age, debt ratio, capital intensity, and dividend paid, which control for the effects on firm performance. γ is the coefficient of a control variable.

$\varepsilon_{i,t}$ is the error term.

(i =1, 2…, 26; t=1, 2…, 8)

The following equations (3) and (4) were used to test the Hypothesis 2 which hypothesized that geographic diversification positively moderates the relationship

between product diversification and firm performance. The equations (3) and (4) tested the effect of product diversification on firm performance in both linear and nonlinear relationships in two subgroups of firms with geographic diversification and without geographic diversification.

$$P_{i,t} = \beta_0 + \beta_1 PD_{i,t} + \beta_2 Dummy\_GD_{i,t} + \sum_{n=1}^{5} \gamma_n Z_{i,t,n} \dots\dots\dots\dots\dots\dots\dots (3)$$

$$P_{i,t} = \beta_0 + \beta_1 PD_{i,t} + \beta_2 PD_{i.t}^2 + \beta_3 Dummy\_GD_{i,t} + \sum_{n=1}^{5} \gamma_n Z_{i,t,n} + \varepsilon_{i,t} \dots (4)$$

Where:

$P_{i,t}$ is firm *i* 's performance indicator at time *t*.

$PD_{i,t}$ is the product diversification of firm *i* at time *t*.

$Dummy\_GD_{i,t}$ is the geographic diversification of firm *i* at time *t*, which is measured as a dummy variable; one if a firm operates its businesses in more than one province; zero if a firm operates its businesses within only one province.

$Z_{i,t,1}, \dots, Z_{i,t,5}$ are four control variables: firm size, firm age, debt ratio, capital intensity, and dividend paid, which control for the effects on firm performance. γ is the coefficient of a control variable.

$\varepsilon_{i,t}$ is the error term.

(i =1, 2…, 26; t=1, 2…, 8)

The following equations (5) and (6) were used to test the Hypothesis 3 which hypothesized that product relatedness positively moderates the relationship between product diversification and firm performance. The equations (5) and (6) tested the effect of product diversification on firm performance in the linear and nonlinear relationships

in two subgroups which are the group of firms that are related-diversification oriented and another group of firms that are unrelated-diversification oriented.

$$P_{i,t} = \beta_0 + \beta_1 PD_{i,t} + \beta_2 Dummay\_ReL_{i,t} + \sum_{n=1}^{5} \gamma_n Z_{i,t,n} + \varepsilon_{i,t} \ldots\ldots\ldots\ldots (5)$$

$$P_{i,t} = \beta_0 + \beta_1 PD_{i,t} + \beta_2 PD_{i.t}^2 + \beta_3 Dummy\_ReL_{i,t} + \sum_{n=1}^{5} \gamma_n Z_{i,t,n} + \varepsilon_{i,t} \ldots (6)$$

Where:

$P_{i,t}$ is firm *i* 's performance indicator at time *t*.

$PD_{i,t}$ is the product diversification of firm *i* at time *t*.

$Dummay\_ReL_{i,t}$ is the product relatedness of firm *i* at time *t*, which is measured as a dummy variable; one if product relatedness is over 0.5, which means a firm is related diversification oriented; zero if product relatedness is under 0.5, which means a firm is unrelated diversification oriented.

$Z_{i,t,1}, \ldots, Z_{i,t,5}$ are four control variables: firm size, firm age, debt ratio, capital intensity, and dividend paid, which control for the effects on firm performance. γ is the coefficient of a control variable.

$\varepsilon_{i,t}$ is the error term.

(i =1, 2…, 26; t=1, 2…, 8)

The following equations (7) and (8) were used to test the Hypothesis 4 which hypothesized that Human capital positively moderates the relationship between product diversification and firm performance. The equations (7) and (8) tested the moderating effect of human capital on both linear and nonlinear relationships between product diversification and firm performance, respectively.

$$P_{i,t} = \beta_0 + \beta_1 PD_{i,t} + \beta_2 HC_{i,t} + \beta_3 PD_{i,t} \times HC_{i,t} + \sum_{n=1}^{5} \gamma_n Z_{i,t,n} + \varepsilon_{i,t} \ldots (7)$$

$$P_{i,t} = \beta_0 + \beta_1 PD_{i,t} + \beta_2 PD_{i.t}^2 + \beta_3 HC_{i,t} + \beta_4 PD_{i,t} \times HC_{i,t} + \beta_5 PD_{i.t}^2 \times HC_{i,t} + \sum_{n=1}^{5} \gamma_n Z_{i,t,n} + \varepsilon_{i,t} \ldots (8)$$

Where:

$P_{i,t}$ is firm *i* 's performance indicator at time *t*.

$PD_{i,t}$ is the product diversification of firm *i* at time *t*.

$HC_{i,t}$ is firm *i*'s employees' number of year education at time *t*.

$Z_{i,t,1}, \ldots, Z_{i,t,5}$ are four control variables: firm size, firm age, debt ratio, capital intensity, and dividend paid, which control for the effects on firm performance. γ is the coefficient of a control variable.

$\varepsilon_{i,t}$ is the error term.

(i =1, 2…, 26; t=1, 2…, 8)

The following equations (9) and (10) were used to test the Hypothesis 5 which hypothesized that Flatness in organizational structure positively moderates the relationship between product diversification and firm performance. The equations (9) and (10) tested the effect of product diversification on firm performance in both linear and nonlinear relationships in two subgroups which are the group of firms that have a grandson-subsidiary and another group of firms that have no grandson-subsidiary.

$$P_{i,t} = \beta_0 + \beta_1 PD_{i,t} + \beta_2 Dummy\_FS_{i,t} + \sum_{n=1}^{5} \gamma_n Z_{i,t,n} + \varepsilon_{i,t} \ldots (9)$$

$$P_{i,t} = \beta_0 + \beta_1 PD_{i,t} + \beta_2 PD_{i.t}^2 + \beta_3 Dummy\_FS_{i,t} + \sum_{n=1}^{5} \gamma_n Z_{i,t,n} + \varepsilon_{i,t} \ldots (10)$$

Where:

$P_{i,t}$ is firm *i* 's performance indicator at time *t*.

$PD_{i,t}$ is the product diversification of firm *i* at time *t*.

$Dummy\_FS_{i,t}$ is the dummy variable of a flat structure, one if firm *i* has grandson-subsidiary at time *t*; zero if firm *i* has no grandson-subsidiary at time *t*.

$Z_{i,t,1}, \dots, Z_{i,t,5}$ are four control variables: firm size, firm age, debt ratio, capital intensity, and dividend paid, which control for the effects on firm performance. γ is the coefficient of a control variable.

$\varepsilon_{i,t}$ is the error term.

(i =1, 2…, 26; t=1, 2…, 8)

The following equations (11) and (12) were used to test the Hypothesis 6 which hypothesized that market structure positively moderates the relationship between product diversification and firm performance. The equations (11) and (12) tested the moderating effect of market structure (measured by the level of market concentration) on both linear and nonlinear relationships between product diversification and firm performance, respectively.

$$P_{i,t} = \beta_0 + \beta_1 PD_{i,t} + \beta_2 MC_{i,t} + \beta_3 PD_{i,t} \times MC_{i,t} + \sum_{n=1}^{5} \gamma_n Z_{i,t,n} + \varepsilon_{i,t} \dots (11)$$

$$P_{i,t} = \beta_0 + \beta_1 PD_{i,t} + \beta_2 PD_{i.t}^2 + \beta_3 MC_{i,t} + \beta_4 PD_{i,t} \times MC_{i,t} + \beta_5 PD_{i.t}^2 \times MC_{i,t} + \sum_{n=1}^{5} \gamma_n Z_{i,t,n} + \varepsilon_{i,t} \dots (12)$$

Where:

$P_{i,t}$ is firm *i* 's performance indicator at time *t*.

$PD_{i,t}$ is the product diversification of firm *i* at time *t*.

MS_t is the market structure measured by the market concentration of the largest four tourism firms at time *t.*

$Z_{i,t,1}, \ldots, Z_{i,t,5}$ are four control variables: firm size, firm age, debt ratio, capital intensity, and dividend paid, which control for the effects on firm performance. γ is the coefficient of a control variable.

$\varepsilon_{i,t}$ is the error term.

(i =1, 2…, 26; t=1, 2…, 8)

To examine the effect of product diversification strategy on firm performance, the moderating effect of geographic diversification strategy on the relationship between product diversification strategy and firm performance, the moderating effects of three selected organizational factors (product relatedness, human capital, and the flatness in organizational structure) on the relationship between product diversification strategy and firm performance, and the moderating effect of market structure on the relationship between product diversification strategy and firm performance, this study employed either the fixed effects regressions or random effects regressions based on the results of Hausman test. Furthermore, the study examined whether the endogeneity problem exists between diversification and firm performance, which perhaps was sourced by their simultaneous relationship (Kang & Lee, 2014). The instrumental variable methods were used if a significant endogeneity problem is identified.

To demonstrate firm performance which is the dependent variable in this study, each model uses return on assets (ROA), an accounting-based measure of firm performance, and Tobin's Q, a market-based measure of firm performance. A number of scholars (e.g., Jayaraman & Milbourn, 2011; Kang & Jang, 2014; Lang & Stulz, 1994;

Wernerfelt & Montgomery, 1988) affirmed that Tobin's Q can provide an unbiased estimation of the present value of a firm's future cash flow over the replacement cost of total assets, which is an appropriate measure of firm performance at a point in time. Whereas, ROA as a traditional accounting-based measure of firm performance provides a historical measure that may contain information which is valuable for the evaluation of firm performance and beyond what includes in stock returns (Antle & Smith, 1986). According to Bettis and Mahajan (1985)'s study, an accounting-based measure of firm performance such as ROA can compensate for a market-based measure such as Tobin's Q while investors' estimations of future cash flows and macroeconomic factors may influence directly on the market-based measure of firm performance. Such that, an accounting measure of firm performance such as ROA is more apparent to reflect a firm's return (Bettis, 1983; Bettis & Mahajan, 1985). Therefore, ROA and Tobin's Q were used to evaluate firm performance in this study. Furthermore, each model contained the product diversification as one of the most important independent variables. Based on the literature of diversification measurement, the entropy index was used for the measure of product diversification for the selected Chinese tourism firms.

3.5 Model estimation methods

The model estimation methods used for this study followed the instructions of analyzing panel data from Wooldridge (2010). First of all, the different tests conducted to ensure estimation assumptions satisfied for a panel regression were introduced. Secondly, the different assumptions were introduced to select an appropriate panel model estimation method (i.e. pooled ordinary least squares, fixed and random effect methods). Thirdly, the detailed procedures of testing a potential endogeneity problem between product

diversification and firm performance and a proposed solution concerning a significant endogeneity problem were followed. Lastly, the details of the methods were explained how the moderating effects among variables were determined.

3.5.1 Tests of the estimation assumptions for panel regressions

To test the estimation assumptions whether can be satisfied for panel regressions (the existence of unit-root, serial correlation, and heteroscedasticity) is also crucial to ensure the reliability of later estimations. First of all, to test whether a time series variable possesses unit-root, if a unit root exists in a time-series variable, there would be a systematic pattern of distribution that is unpredictable. The Fisher-type unit-root test was conducted because it allows the unbalanced panel data. Regarding unbalance panel data, if the reason of missing data is random in an unbalanced panel data and not correlated to errors term, the unbalanced panel data are applicable to provide unbiased estimation (Baltagi, 2008). For example, if the missing data in a variable of measuring the level of depression of respondents occur in a survey, the reason of missing may be correlated to the personal feeling of depression, which is not random. Secondly, to test whether the possible autocorrelations exist, the Wooldridge test was conducted. Lastly, for testing the heteroscedasticity, the Breusch-Pagan test was conducted to test the possible heteroscedasticity. The “robust” regression method that was capable of correcting heteroskedastic errors was used in case of significant heteroskedastic errors identified (Tran & Zaninotto, 2010). Otherwise, the ordinary least squares with conventional standard errors were applied without the presence of heteroscedasticity.

3.5.2 Model selection

3.5.2.1 Fixed and random effects methods

There are three general estimating methods for panel data, which are the pooled ordinary least squares (OLS), the fixed effects method, and the random effects method (Asteriou & Hall, 2015). The pooled OLS method is to estimate the common constant for all cross-sections, which assumes there are no differences among all cross-sections. Given that the pooled OLS estimation may be biased and inconsistent because of the omitted variables when a researcher uses panel data (Kang & Jang, 2014), Gujarati (2003) and Wooldridge (2010) suggested that the fixed effects method can effectively mitigate the omitted variable bias to estimate the coefficients by considering unobservable firm- and time-specific heterogeneities. The unobservable heterogeneity serves as a decisive role in model selection. If unobservable firm-and time specific heterogeneities are combined with idiosyncratic errors, the pooled OLS model is selected. If unobservable firm-and time specific heterogeneities are correlated with explanatory variables, the fixed effects model should be selected. If unobservable firm-and time specific heterogeneities are not correlated with explanatory variables, the random effects model should be chosen (Pratt & Liu, 2016).

The fixed effects method treats the constant as section specific and controls for unobserved heterogeneity that is time-invariant and correlated with independent variables. In other words, the fixed effects method assumes the individual-specific effect and independent variables are correlated. Hence, they need to be controlled in the panel data model. Therefore, the estimated coefficients of the fixed effects method cannot be biased by unobserved time-invariant variables (Baum et al., 2007). The fixed effects model is

also known as least squares dummy variable model (LSDVM) (Greene, 2000) and demonstrated as:

$$Y = X\beta + D\alpha + \varepsilon$$

Where, *X* contains the number of regressors, *X* equals to five which were five explanatory variables in this study; *D* is a matrix that contains n dummy variables from n units; in this study, n equals to 26 tourism firms; α is a group-specific constant term in the fixed effects model.

The random effects method contrasts with the fixed effects method, which assumes that the individual-specific effect and independent variables are not correlated. In other words, in random effects method, differences across entities have influences on the dependent variable and time-invariant variables are allowed to be explanatory variables (Baum et al., 2007). Random effects model is demonstrated as:

$$Y = \alpha + X\beta + (\mu + \varepsilon)$$

Where, *X* contains the number of regressors, *X* equals to five which were five explanatory variables in this study; α is the random intercept and μ is an error term of random intercept.

3.5.2.2 *Tests for selecting an appropriate estimation method*

Several tests (see Table 3.2) were conducted accordingly to select appropriate methods to estimate panel data models above. To select an appropriate method among three types (pooled OLS, fixed effects, and random effects), the Hausman test was conducted to determine the more efficient and consistent model between using fixed effects and random effects methods. The null hypothesis of the Hausman test is that the error term of

random intercept and explanatory variables are uncorrelated. To use fixed effects method to estimate panel data model is more appropriate if the null hypothesis of the Hausman test is rejected and the p-value is smaller than 0.05. Otherwise, the random effects method is more consistent and efficient than the fixed effects method if the null hypothesis is not rejected and its p-value is greater than 0.05.

Table 3.2 Summary of conducted tests for selecting an appropriate estimation method

Names of Tests	Estimation Method Selection	Null Hypotheses	Rejection condition
Hausman Test	Fixed Effect vs Random Effect	The error term of random intercept and explanatory variables are uncorrelated and the coefficients in using two methods have no systematic difference.	P-value < 0.05
F Test	Fixed Effect vs Pooled OLS	All constants are homogeneous	P-value < 0.05
Breusch-Pagan Lagrange Multiplier (LM) test	Random Effect vs Pooled OLS	There are no significant differences across entities	P-value < 0.05

Furthermore, the F-test was conducted to determine the more suitable method between the pooled OLS method and the fixed effects method while the fixed effects method is determined after the Hausman test. The null hypothesis of F-test is that all constants are homogeneous. The null hypothesis of the F-test is rejected if the p-value is smaller than 0.05. The rejection of the null hypothesis of F-test indicates that using fixed effects method is more suitable than the pooled OLS method for panel data regression models. Otherwise, the pooled OLS method is selected if the null hypothesis is not rejected. Moreover, the Breusch-Pagan Lagrange Multiplier (LM) test was conducted to determine the more appropriate method between the random effects and the pooled OLS methods while using random effects method is determined after the Hausman test. The null hypothesis of the Breusch-Pagan LM test is no significant difference across entities. The null hypothesis of the Breusch-Pagan LM test is rejected if the p-value is smaller than 0.05, which indicates that there is a panel effect and the random effects method is superior to the pooled OLS method. Otherwise, using the pooled OLS method is selected if the null hypothesis is not rejected.

3.5.3 Endogeneity

This study examined whether the endogeneity problem exists, which probably derives from a simultaneous relationship between diversification strategy and firm performance (Kang & Jang, 2014; Tran & Zaninotto, 2012). For instance, Kang and Lee (2014) mentioned that the high or low degree of diversification may be motivated by good or bad firm performance to extend different competitive advantages in different markets. The endogeneity problem caused by the causality that runs in both directions for diversification strategy and firm performance may result in biased and inconsistent

estimations of coefficients (Campa & Kedia, 2002). The two-stage least squares (2SLS) was used to solve a potential endogeneity problem if a significant endogeneity problem is identified. The 2SLS has been used by many scholars for solving endogeneity problem, including diversification-related research (e.g. Campa & Kedia, 2002; Kang & Jang, 2014; Kumar, 2003; Villalonga, 2004). Furthermore, Lang and Stulz (1994) pointed out that there may be a self-selection bias in diversification because a firm that may have a poor performance in existing activities because of exhausted resources intends to diversify in search of growth opportunities. Therefore, according to the study of Santarelli and Tran (2013), a diversification strategy and controlled observable firm characteristics were more likely correlated with each other, and the diversification strategy was likely correlated with unobserved characteristics absorbed in error terms. Hence, to diagnose the endogeneity of product diversification is necessary for this study. The Durbin-Wu-Hausman test was conducted to detect whether the endogeneity problem existed in the models (Lee & Park, 2009; Wooldridge, 2003).

To use the 2SLS to solve the endogeneity problem, the instrumental variables were used. The instrumental variables estimator offers an approach to mitigate the inconsistency of OLS because of endogeneity and obtain consistent parameter estimates (Racicot and Rentz, 2017). The instrumental variable was defined as a variable that correlates with the investigated variable but does not correlate with measurement error (Glymour, 2006). Campa and Kedia (2002) suggested a set of instrumental variables that are not associated with the error terms but diversification. According to Campa and Kedia (2002)'s study, GDP growth rate for each year was used to capture the effects of macroeconomic factors and business cycles. In addition, to consider firms' specific

characteristics that may influence the decision of product diversification, from the perspective of resource-based theory, a firm implements a diversification strategy to obtain and utilize the excessive resources for seeking growth opportunities. Kang and Lee (2014) mentioned that the growth opportunities within a firm push the firm to diversify businesses. Tang and Jang (2010) indicated that capital expenditure to sales can picture a firm's investments in the future growth opportunities. Furthermore, Kistruck, Qureshi, and Beamish (2013) used other two instrumental variables for solving a potential issue of endogeneity of product diversification, which was board size and quick ratio. Firstly, the logic for the selection of board size is that a larger number of board members are more likely to have a greater diversity of business interests. Therefore, the more board members in influential positions increase the likelihood of diversification into different businesses. Secondly, the quick ratio reflects a short-term picture of meeting the short-term obligation. It affects the likelihood of diversification for a firm if the firm has a risk of bankruptcy. This measure of short-term liquidity should be related to the long-term impacts of diversifying into new products (Kistruck et al. 2013).

To check the validity of these instrumental variables, this study conducted the Anderson canonical correlations test to check the statistic of under-identification and the test of Sargan statistic of over-identification of all instruments for instrumental variable regressions (Baum et al., 2007; Kang & Lee, 2014). The statistic of under-identification in the Anderson canonical correlation test indicated the level of relevance of instruments with targeted variables in the model. The test of Anderson canonical correlation basically tests the null hypothesis that the instruments were weak and had the low relevance so that models become under-identified. The Sargan-Hansen test was to test the over-identifying

restrictions with the null hypothesis that the instruments were valid and not correlated to error term (Wooldridge, 2003). Therefore, the instrumental variables were valid when the statistic of Anderson canonical correlation was significant at the 5% confidence level while the Sargan statistic was not signification at the 5% confidence level.

3.5.4 Determining moderating effects

In this study, there are two ways used to test moderating effects of variables of interests. First, Cohen, Cohen, West, and Aiken (2013) introduced that in moderated regression analysis, a new interaction predictor can be formed. The new interaction term may be correlated with the two variables used to calculate it. Therefore, the potential issue of multicollinearity may be significant in the moderated regression model. Kromrey and Foster-Johnson (1998) introduced an approach that solves the multicollinearity problem in the regression models which contain the interaction term was the Mean-centering method. The Mean-centering method (deducting the raw values of the variables *PD*, product diversification, *HC*, human capital, and *MC*, marketing concentration, from their mean values) was conducted in models for testing hypotheses 4 and 6.

Second, Arnold (1982) suggested that using subgroups is an alternative strategy to test whether parameters differ across groups to capture the moderating effect. To test the hypotheses 2, 3, and 5, subgroups were used to capture the moderating effects of the targeted variables. One panel regression model was operated in two subgroups separately. There were three steps performed accordingly. At the first step, the T-test (mean-comparison test) was conducted for dependent variables, two measures (*ROA* and *Tobin's Q*) of firm performance, across two subgroups. The second step was to compare estimates

of models which were separately operated in two subgroups via the Hausman test which detects the difference in coefficients between two regressions. The third step was to detect the equality of coefficients of diversification variable specifically in two models across two subgroups. Clogg, Petkova, and Haritou (1995) introduced a method to compare coefficients of regression, Z statistic shown as follow:

$$\text{Z statistic} = (\beta_1 - \beta_2) / \sqrt{(SE_{\beta 1}^2 + SE_{\beta 2}^2)}$$

(Clogg et al., 1995, p. 1276).

Where, β_1 is the coefficients of diversification measure in one model operated in one subgroup, $\beta_2$is the coefficients of the product diversification measure in another model operated in another subgroup, SE is a standard error. The significant Z statistic indicated that there is a significant difference between the coefficient of product diversification in one subgroup and the coefficient of product diversification in another subgroup. The hypothesized moderating effect via subgroup method was captured statistically by comparing panel regression models and specific coefficients of product diversification across subgroups.

3.7 Variables and measures

3.7.1 Performance measure

Numerous studies introduced different measures of firm performance; the performance measurement is divided into accounting-based and market-based measures (Lee & Jang, 2007; Kang & Lee, 2014; Singh & Gu, 1994). The most commonly used accounting

measures in measuring firm performance are ROA, return on sales (ROS), and return on equity (ROE) (Chen, 2014; Wang & Xu, 2009). ROE, one of the most representative financial ratios, was chosen by Wang and Xu (2008) to measure financial performance. ROA and ROS have been widely adopted in previous literature to measure firms' financial performance. Usually, the financial accounting measurements reflect management ability to hedge risks. They evaluate the managerial efficiency or how well a firm generates income (Pandya & Narendar, 1998). Antle and Smith (1986) mentioned that ROA is often used as a financial accounting-based measure of firm performance because ROA usually is tied explicitly with corporate goals and executives' performance-based compensation; secondly, ROA is generally highly correlated with other accounting-based performance measurements such as ROE and ROS. Therefore, this study selected ROA as an accounting-based measure of firm performance.

Benston (1985) pointed out some limitations in using the accounting-based performance measure, including the different accounting principle changes that can result in a change of financial reporting information. Furthermore, the lack of consideration of business risk and the mere reflection of the historical financial situation are two other limitations of accounting-based performance measurement (Chang & Wang, 2007). Therefore, the use of market-based performance measurement enhances the validity of estimations. Wernerfelt and Montgomery (1988) mentioned that Tobin's Q considers the business risk associated with a firm's assets and avoids changes caused by any changes in taxation policy or accounting policy. This is a more suitable measure compared to accounting-based measure. Market-based performance is measured by the value of Tobin's Q, which is calculated traditionally as the ratio of market value of a firm' s assets

to its replacement cost of the asset (Lloyd & Jahera, 1994). As it is difficult to calculate the replacement costs of the assets in Chinese firms (Chang & Wang, 2007; Shin & Stulz, 1998), this study employed approximate Tobin's Q (Chung & Pruitt, 1994; Kang et al., 2011; Kang, Lee, Choi, & Lee, 2012; Kang & Jang, 2014), calculated by total value of the value of common shares of a firm, the value of preferred stock of the firm, and the value of short-term liabilities net of short-term assets plus the book value of long-term debt over the book value of total asset of the firm. In conclusion, both accounting-based and market-based performance measures, ROA and the approximate Tobin's Q, were taken as the measurements of performance to increase the robustness of the tests in this study.

Although ROA is one of the most accepted and used measures for firm performance in the literature, and this study used ROA as one of the performance measures, the three limitations of using ROA measuring performance are also identified by other researchers (e.g., Schmidgall, 2006). First, a firm's intangible assets are not accounted for in the overall assets. The intangible assets can be patents in developing products, latent ideas in designing products, knowledge and skills of employees, and relationships with other organizations. Second, ROA is often used as comparison. However, many firms in the market nowadays hardly find a firm that can be accurately compared to them. For instance, a firm may have many holdings in other industries related to energy and technology. In this case, when comparing this firm's ROA to another firm that may have holdings in real estate and service industries, an outcome may be less meaningful as their assets types are obviously different. The third limitation of using ROA is that it does not consider borrowed capital. It is common that a firm depends on a

combination of debt and equity financing. Therefore, using ROA to make investment decisions, the importance of borrowed capital in the success of a company may be essentially. Regarding the limitations of Tobin's Q, the difficulty of estimating the replacement cost of a firm's assets has led past studies to use the proxy of Tobin's Q (Chang & Wang, 2007).

3.7.2 Diversification measure

The different diversification measurements discussed in Chapter Two included the pros and cons. This study applied entropy index to measure product diversification in accordance with Jacquemin and Berry (1979)'s pioneering work. This measurement is advanced as it involves the number of industries in which a firm operates its businesses, the proportion of total firm revenues of each business unit, and the degree of relatedness (Wang & Xu, 2009). Product diversification (see Table 3.3) was measured by using the entropy index (Chang & Wang, 2007; Hitt et al., 1997; Jacquemin & Berry, 1979; Palepu, 1985). The details of measure are presented in Table 3.3.

Table 3.3 Descriptions of variables

Variables	Formula	Description
Market structure measured by market concentration (MC)	$\mathrm{MC4} = \sum_{i=1}^{n} MS_{it}^{2}$	MC stands for four-firm (the largest four firms in terms of market share among all traded tourism firms in China) concentration ratio. MS_{it}^2 is measured as a percentage of tourism-related revenue firm *i* generates at time *t* of the total tourism-related revenue all sampled tourism firms generate (Lee, 2008).
Product Diversification (PD)	$\mathrm{PD_{it}} = \sum_{j=1}^{n} \mathrm{P}_j \ln(1/\mathrm{P}_j)$	$\mathrm{PD_{it}}$ is the level of product diversification in a firm *i* at time *t*; $\mathrm{p_j}$ is the proportion of *j*th product of the total revenue of tourism firm *i*, and n is the total number of products in

		tourism firm *i*. (Chang & Wang, 2007)
Geographic Diversification ($Dummy\_GD_{it}$)	One if a firm operates its businesses in more than one province; Zero if a firm operates its businesses within only one province.	
Return on Assets (ROA)	$ROA_{it} = \text{Net Income}_{it}/(\text{Total Assets}_{it} + \text{Total Assets}_{it-1})/2$	Net income of a firm *i* at time *t*, and $(\text{Total Assets}_{it} + \text{Total Assets}_{it-1})/2$ is the average value of the assets at beginning period *t-1* and at ending period *t* of the firm *i*.
Tobin's Q	Tobin's $Q_{it} = (MV_{it} + PS_{it} + Debt_{it})/BV_{it}$	Tobin's Q is calculated as the sum of MV_{it} (a firm *i* 's time t's stock price multiplies the number of common shares Outstanding), PS_{it} (is the liquidating value of the outstanding preferred stock of the firm *i* at time *t*), and $Debt_{it}$ (is the firm *i*'s value of short-term liabilities net of short-term assets plus the book value of long-term debt at time *t)* dividing by BV_{it} (is the book value of total assets of firm *i at* time *t*). The natural logarithmic form of the Tobin's Q was used in the models (e.g. Chung & Pruitt, 1994; Park & Jang, 2013b).
Related Product Diversification	$RD_{it} = \sum_{j=1}^{n} RP_j \ln(1/RP_j)$	RD_{it} is the related product diversification in a firm *i* at time *t;* RP_j is the share of sales of related product *j* provided by the firm *i* in related industries (Jacquemin & Berry, 1979; Palepu, 1985).
Unrelated Product Diversification	$DU_{it} = \sum_{j=1}^{M} P_j \ln(\frac{1}{P_j})$	DU_i is the unrelated product diversification in a firm *i* at time *t*; M is the number of industry group; Pj is the proportion of firm *i*'s total sales with jth industry group (Jacquemin & Berry, 1979; Palepu, 1985).
Product Relatedness (ReL_{it})	$ReL_{it} = RD_{it}/(RD_{it} + DU_{it})$	ReL_{it} stands for a firm *i* 's product relatedness at time *t.* Product relatedness the related product diversification over the total product diversification which is the sum of related and unrelated product diversification of entropy index. (Ravichandran, Liu, Han, & Hasan, 2009).

Dummy_ReL$_{it}$	One if ReL is over 0.5, which means a firm is related diversification oriented; Zero if ReL is under 0.5, which means a firm is unrelated diversification oriented.	
Human Capital (HC_{it})	The average number of years of education of employees in a firm *i* at time *t*.	
Dummy of Flat Structure (Dummy_FS$_{it}$)	One if a firm i has a grandson-subsidiary at time t; Zero if a firm i has no grandson-subsidiary at time t.	
Firm Size ($Size_{it}$)	$Size_{it}$ is the natural logarithmic form of a firm *i's* a number of employees at time *t* (e.g. Waddock & Graves,1997).	
Firm Age (Age_{it})	Age_{it} is the natural logarithmic form of a firm *i*'s years since incorporation at time *t* (e.g. Banalieva & Sarathy, 2011; Mahoney, 1992)	
Debt Ratio ($Debt_{it}$)	$\text{Debt}_{it} = \text{Debt}_{it}/\text{Total Assets}_{it}$	$Debt_{it}$is the leverage ratio of a firm *i* at time *t*, computed as $Debt_{it}$ (book value of total liability of the firm *i* at time *t*) divided by $Equity_{it}$ (the book value of the total asset of the firm i at time t) (e.g., Kang & Lee, 2014).
Capital Intensity (CI_{it})	$\text{CI}_{it} = \text{FIX}_{it}/\text{Total Assets}_{it}$	CI_{it} is the capital intensity ratio of a firm *i* at time *t*, calculated as FIX_{it} (the net fixed assets of the firm *i at* time *t*) to Total Assets_{it} (the book value of the total asset of the firm *i* at time *t*) (Barton, 1988).
Dividend Dummy (DIV_{it})	One if a firm i paid dividends at time t; Zero if a firm i did not pay dividends at time t.	

3.7.3 Product relatedness

Product relatedness is defined as the related product diversification over the total product diversification which consists of the related and unrelated product diversification of the entropy index (Ravichandran et al., 2009). Prior to applying the entropy-diversification measures (i.e. related and unrelated diversification), a categorization of industry groups within the scope of tourism industry needs to be clarified for the current study. A considerable amount of previous studies implemented the entropy-diversification measures to categorize related and unrelated businesses based on standard industrial classification (SIC) codes in the hospitality industry (e.g. Park & Jang, 2012; Park & Jang, 2013a). For instance, businesses are viewed as related if the first two-digit SIC codes are

the same, otherwise, they are categorized as unrelated businesses. In the Chinese tourism industry, categorizing related and unrelated businesses based on the Chinese Standard Industrial Classification Codes (CSIC) does not work because the CSIC of tourist attraction management and operation (N785) does not share a same two-digit code with the travel services related businesses (L727). They are apparently related businesses within the scope of tourism industry based on the definition of the tourism industry from Leiper (1979). Leiper (1979) and Cooper and Hall (2008) split the tourism industry into six sectors, namely: tourism marketing, tourist carriers, tourism accommodation, tourism attractions, miscellaneous tourism services, and tourism regulation. As a guideline that defined related businesses for the tourism industry based on Leiper (1979) and Cooper and Hall (2008), hotel business (i.e., H611, H612, and H619), tourist attraction management (N785), and travel service related businesses (L727) were viewed as related businesses in this study. Apart from these industry groups, other groups were considered as unrelated businesses to execute the entropy-diversification measures.

3.7.4 Human capital

The human capital characteristics captured in this study is the educational level of firm's employees. Human capital consists of three key elements, namely: the early ability that a person obtained or is innate, the qualification and knowledge acquired from formal education, and the expertise gained through job-related training (Blundell, Bearden, Meghir & Sianesi, 1999). Bates (1990) measured the human capital by using employees' educational level—the number of years of education. In this study that was conducted in the Chinese context, based on Chinese national educational system, after the nine-year basic and obligatory education, 3-year high school education is followed, and then a

person starts his or her professional education. In other words, a person who has a college degree generally has about 16 years of education (9 years obligatory education plus 3 years of high school or technical secondary school and 4 years in a college). In China, after high school or technical secondary school, there are two different types of college offered, which are the regular college or university with the 4-year undergraduate level program with a bachelor degree and the junior college with the 3-year undergraduate level diploma-based program without a bachelor degree. However, in this study, as some firms disclosed their employees' educational background information and categorized those two types of college educations into one category named as the college education, the number of years of a college education was calculated as the average value 3.5 years in this case. Additionally, upon the level of college education three more years were added into the number of years of education for employees who have a master degree and upon a master degree, three more years were added into the number of years of education for employees who have a doctoral degree. For instance, a firm has 50 employees which are 12 with a high school degree, 30 with a college level education, 7 with a master's degree, 1 with a doctoral degree. The average number of years of employees' education of the firm is 15.2 years ((12× 12 years + 30 × 15.5years +7 ×18.5 years+1×21.5years)/50).

3.7.5 Flatness in organizational structure

The flatness of an organization structure describes the organization's managerial levels in a chain of command (Huang et al., 2011). Vickery et al. (1999) and Nahm et al. (2003) captured the flatness of an organizational structure using the number of layers and the dimension of the spans of control. The more complex and hierarchical an organization structure is, the greater the numbers of managerial levels the organization has (Burns &

Stalker, 1961). Damanpour (1991) stated that the communication and information passing may be more efficient in a less hierarchical organization. This study focused on the corporate level of an organizational structure. The number of layers of corporate business units measures the flatness of an organizational structure. For instance, the organization structure with only son-subsidiaries is flatter than that with both son- and grandson-subsidiaries.

3.7.6 Market structure measure

According to Christensen and Montgomery (1981), market structure characteristics are reflected in market concentration. Market concentration is selected as the most representative variable in measuring market structure because of its association with the entry barriers of an industry and the number of players within the industry (Bain, 1956; Porter, 1980). The market concentration ratio is generally calculated with the sum of the square of the market share of the largest four or eight firms (Matovic, 2002; Roger, 2002). In this study, market concentration is computed based on the largest four firms in terms of their market share. Market share of a firm is calculated as a percentage of the firm's revenue over the total revenue a market generates (Christensen & Montgomery, 1981; Lien & Klein, 2009; Roger, 2002). Based on the general calculation of market share from the prior literature, the market share of a sampled firm in this study is calculated as a percentage of a firm's tourism-related revenue over the total tourism-related revenue of all sampled firms.

3.7.7 Control variables

Firm size, firm age, leverage, capital intensity, and paying a dividend are commonly executed as the control variables in investigating the relationship between diversification strategy and firm performance (Chang & Wang, 2007; Kang & Lee, 2014; Mahoney, 1992; Park & Jang, 2012). Firm size is measured by the natural logarithm of a firm's total number of employees to control the effects of company's scale on firm performance (Waddock & Graves, 1997). Kang and Lee (2014) pointed out that the excessive skewness of firm size can be adjusted by using the natural logarithm form. Furthermore, Mahoney (1992) mentioned that older firms may be more experienced than younger firms so that they may have a better performance than younger firms. Therefore, according to Banalieva and Sarathy (2011)'s study, the firm age is used to control the learning effects that may influence decision-making and firm performance. Moreover, the leverage reflects the capital structure of a firm; it is used to control the benefit that a firm may gain from the tax shield effect of a debt usage on firm performance(McConnell & Servaes, 1990). Based on Kang et al. (2011)'s study, the debt ratio was used to control the tax-shield effect and the potential effect that capital structure influencing financial viability in this study. In addition, Bettis (1981) stated that capital intensity varies across different industries. Port (1976) suggested that capital intensity may be a barrier to exit an industry because the great degree of capital intensity may confront business risk caused by convertibility and liquidity. Therefore, different levels of capital intensity in different firms may be associated with the differences in firm profitability. Lastly, paying dividend basically reflects the stability of a firm's future cash flow (Ferreira & Vilela, 2004) and

Easterbrook (1984) indicated that dividends can reduce firms' over-investment problems, which, in turn, influences firm performance.

3.8 Summary of the chapter

The first section of this chapter introduced the details of research design for conducting this study. The second section covered the sources of the data and the criteria for selecting a sample for this study. The data of eight-year period from 2008 to 2015 was selected. The third section of this chapter presented the models for testing hypotheses aligned with research objectives of this study. The fourth section of the chapter depicted that the details of estimation methods for carrying out the statistical models in the third section. The introduction of using different estimation methods with detailed explanations of how to select an appropriate estimation method to run the panel regression models was demonstrated in the fourth section as well. The matter of potential endogeneity problem caused by a simultaneous relationship between product diversification and firm performance was followed in the fourth section. The Durbin-Wu-Hausman test was conducted to detect whether there was a significant endogeneity in this study. The 2SLS estimations were applied to solve the endogeneity. The last part of the fourth section of this chapter explained the two approaches used to detect moderating effects. The fifth section of this chapter presented the identified different variables associated with the hypotheses and the detailed descriptions of the variable.

CHAPTER 4. RESULTS

4.1 Chapter introduction

This chapter presents the results obtained after data analysis. Examinations of violations of estimation assumptions are presented in the first section of this chapter, followed by the descriptive statistics of all variables involved in the current study. The regression results of the influence of product diversification on firm performance were shown, followed by the results of the instrumental variable 2SLS. Two subgroups were created to test the moderating effect of geographic diversification on the relationship between product diversification and firm performance; one group of firms operates businesses in more than one province in China, and the other group only operates businesses in their base province. The regression results for both subgroups were presented.

The moderating effects of organizational factors (product relatedness, human capital, and flatness of the organizational structure in this study) on the relationship between product diversification and firm performance were examined in this study. The parameters of an additive model for subgroups of the entire sample were estimated to test their moderating effects (Arnold, 1982). To determine the moderating effect of relatedness on the relationship between product diversification and firm performance, two subgroups were created based on the degree of product relatedness. One group of firms was related diversification oriented, and their degree of product relatedness exceeded 0.5 according to the calculations in Table 3.3. Another group of firms that operated few related businesses was unrelated diversification oriented, and their degree of relatedness was below 0.5. The regression results for these two subgroups were presented. An

interaction variable was constructed with the variables of product diversification and human capital to verify the moderating effect of human capital (measured by the average number of years of education of employees in a firm) on the relationship between product diversification and firm performance. The test of the moderating effect of the organizational structure flatness on the relationship between product diversification and firm performance was conducted by dividing the sample into two subgroups: one group of firms that have no subsidiary firms or only have son-subsidiary firms, and the other group of firms that have both son-subsidiary and grandson-subsidiary firms. The results were assessed based on the subgroups.

An interaction variable constructed with the variables of product diversification and the market structure was used to test the moderating effect of market structure. The regression results of the moderating effect of market structure on the relationship between product diversification and firm performance were presented in the last section of this chapter.

4.2 Test for violations of estimation assumptions

Three different tests for violations of estimation assumptions were conducted. First, a Fisher-type unit-root test for unbalanced panel data (Torres-Reyna, 2007) was performed to determine whether unit root exists in the dependent variables. A unit-root test is to test the stationarity of a time-series variable. If a unit root exists in a time-series variable, there would be a systematic pattern of distribution that is unpredictable. The existence of unit root in a time-series variable also causes spurious regressions (a very high R-square value in a data even not correlated and t value not following t-distribution) (Dattalo, 2013).

Second, although the problem of heteroscedasticity is common in the panel data because the data set naturally contains heterogeneous units and groups, the problem of heteroscedasticity causes the biased standard error which can result in incorrect conclusions about the significant coefficients in regressions (Wooldridge, 2003). In this study, the Breusch–Pagan test was adopted to check whether there was a significant problem of heteroscedasticity appeared (Tran & Zaninotto, 2010). Third, the serial correlation also biases the standard error and leads to inefficient results. The Wooldridge test for first-order autocorrelation in panel data was conducted to check if a first-order serial correlation exists in dependent variables (Wooldridge, 2003).

Table 4.1 Summary of unit-root, heteroscedasticity, and serial correlation tests

	Unit-root test	Heteroscedasticity test	Serial correlation test
	Fisher-type unit-root test	Breusch–Pagan test	Wooldridge first-order serial correlation test
ROA	Inverse chi-squared (46) 158.69**	chi-square = 37.34**	F (1, 25) = 0.017
Tobin's Q	Inverse chi-squared (46) 121.29**	chi-square= 22.13**	F (1, 25) = 0.094

Notes: *5% significance level. **1% significance level.

For the first estimation assumption, the significant results from the Fisher-type unit-root test for *ROA* and *Tobin's Q* were shown in Table 4.1. The null hypotheses of all panels containing unit roots were rejected (p-value < 0.01), which indicated that there were no unit roots in the dependent variables. For the second estimation assumption associated with the existence of heteroscedasticity in the data, the results of the Breusch–Pagan test was significant for *ROA* (Chi-Square=37.34, p-value < 0.01) and *Tobin's Q* (Chi-Square=22.13, p-value < 0.01). Thus, the null hypotheses that homoscedasticity in *ROA* and *Tobin's Q* were rejected, which indicated that the problem of heteroscedasticity existed in the dependent variables. A "robust" regression method with robust standard

errors was used to correct the heteroscedastic errors (Tran & Zaninotto, 2010). For the third estimation assumption associated with the existence of the first-order autocorrelation in the panel data, the results from the Wooldridge first-order serial correlation test for *ROA* (F= 0.017, p-value > 0.05) and *Tobin's Q* (F= 0.094, p-value > 0.05) were insignificant at the 5% level. Thus, the null hypotheses that no first-order autocorrelation exists in the dependent variables *ROA* and *Tobin's Q* were not rejected.

4.3 Descriptive statistics

Table 4.2 provides an overview of continuous variables for the analyses of the sampled Chinese tourism firms. *ROA* ranged from −0.226 to 0.268 with a mean of 0.049 and a standard deviation of 0.064. *Tobin's Q* varied from 0.105 to 3.094 with a mean of 1.008 and a standard deviation of 0.601. The market structure was measured by the market concentration ratio, which ranged from 0.138 to 0.164 with a mean of 0.152 and a standard deviation of 0.009. Product diversification varied from 0 to 2.293 with a mean of 0.997 and a standard deviation of 0.482. The mean of human capital (*HC*) was 13.626 with a standard deviation of 0.954. The minimum and maximum values of *HC* were 11.598 and 16.160, respectively. For the control variables, the natural logarithmic form of the total number of employees of firms ranged from 5.024 to 9.521. The logarithmic form of firm age ranged from 0.693 to 3.296, and the debt ratio had minimum and maximum values of 0.024 and 1.309, respectively. The reason why debt ratio exceeded 1 was that a few firms suffered from unprofitable situations in certain years. The negative retained earnings may have resulted in the negative equity of the firms. To keep their businesses operating, the level of leverage may have increased rapidly, leading to

insolvency in those years. Admati, DeMarzo, Hellwig, Pfleiderer, and Goods (2018) highlighted another reason why debt ratio may be greater than one was that the business is located in a highly cyclical industry where cash flows were affected suddenly to decline. The scale of capital intensity ranged from 0.003 to 0.916.

Table 4.2. Summary of descriptive statistics of all variables

Variable	N	Mean	Std. Dev.	Min	Max
ROA	190	0.049	0.064	-0.226	0.268
Tobin's Q	190	1.008	0.601	0.105	3.094
MC	190	0.152	0.009	0.138	0.164
PD	190	0.997	0.481	0.000	2.229
HC	190	13.626	0.954	11.598	16.160
SIZE	190	7.315	1.038	5.024	9.521
AGE	190	2.765	0.364	0.693	3.296
DEBT	190	0.389	0.196	0.024	1.309
CI	190	0.387	0.185	0.003	0.916

Notes: *ROA* represents return on assets; *Tobin's Q* represents the natural logarithmic form of a firm's Tobin's Q value; *MC* stands for market structure measured by the market concentration ratio; *PD* is the product diversification entropy index; *HC* is human capital measured by the average number of years of education; *SIZE* is the natural logarithmic form of a firm's total number of employees; *AGE* is the logarithmic form of a firm's years since incorporation; *DEBT* represents the debt ratio; and *CI* is capital intensity.

Table 4.3 presents the bivariate correlations of all included variables in regression analyses of the sampled Chinese tourism firms. *ROA* and *Tobin's Q* were correlated negatively but not significantly with each other, which indicated that the market-based performance measure was not significantly related to profitability. The correlation between *ROA* and market structure was positive but not significant at the 5% significance level. Product diversification and *ROA*, *ROA* and *HC*, and *ROA* and *SIZE* were positively and significantly correlated at the 1% significance level. By contrast, *ROA* was negatively and significantly related to the logarithmic form of firm age (*AGE*) and debt ratio (*DEBT*) at the 1% significance level. Capital intensity (*CI*) was negatively and significantly associated with *ROA* at the 1% significance level. The financial market-based

performance measure, *Tobin's Q*, was negatively and significantly related to product diversification (*PD*) at the 5% significance level and was not significantly associated with market concentration (*MC*). A negative and significant correlation was found between *Tobin's Q* and *SIZE*. *DEBT* was not related to *Tobin's Q*, but *CI* was positively and significantly related to *Tobin's Q* at the 1% significance level.

Table 4.3 Summary of Pearson's correlations

	ROA	Tobin's Q	PD	MC	HC	Size	Age	Debt	CI
ROA	1.000								
Tobin's Q	−0.036	1.000							
PD	0.268**	−0.178*	1.000						
MC	0.047	−0.109	−0.143*	1.000					
HC	0.415**	−0.015	0.044	−0.114	1.000				
SIZE	0.326**	−0.428**	0.435**	−0.124	0.149*	1.000			
AGE	−0.204**	0.211**	−0.156*	−0.336**	−0.220**	−0.238**	1.000		
DEBT	−0.345**	−0.066	−0.196**	0.002	−0.149*	−0.029	0.157*	1.000	
CI	−0.155**	0.302**	−0.074	−0.088	−0.103	−0.324**	0.331**	0.152*	1.000

Notes: *ROA* represents return on assets; *Tobin's Q* represents the natural logarithmic form of a firm's Tobin's Q value; *MC* stands for market structure measured by the market concentration ratio; *PD* is the product diversification entropy index; *HC* is the human capital measured by the average number of years of education; *SIZE* is the natural logarithmic form of a firm's total number of employees; *AGE* is the logarithmic form of a firm's years since incorporation; *DEBT* represents the debt ratio; and *CI* is the capital intensity. * denotes 5% significance level and ** denotes 1% significance level.

4.4 Main analyses

This section explains the results aligned with the developed hypotheses in Chapter Two. Three different methods were employed to estimate panel regressions in this study; these three were pooled ordinary least squares (OLS), fixed effects, and random effects estimation (Dimitrios, 2005). This section consisted of six sub-sections which were in line with each hypothesis.

4.4.1 Effect of product diversification on firm performance

Table 4.4 summarizes the results of the influence of product diversification (*PD*) on firm performance measures, namely, *ROA* and *Tobin's Q*. Table 4.4 contains four models. The Hausman test was conducted prior to using fixed effects models for models (1) and (2), and the results revealed significant differences between estimations of fixed and random effects. The p-values were less than 0.01 in the models (1) and (2). Therefore, fixed effects models were used to investigate the influence of product diversification on firm performance according to the results of Hausman test: Model (1) Chi-Square=24.94, p-value=0.000; Model (2) Chi-Square=57.40, p-value=0.000. Furthermore, the F-test was conducted to check the validity of the fixed effects model. The results of the F-test for the models (1) (F statistic=4.48, p-value < 0.01) and (2) (F statistic= 15.19, p-value < 0.01) were significant at the 1% significance level, indicating that all constants were significantly different and that a fixed effects model was more appropriate than a pooled OLS model.

The models (1) and (2) which investigated the effect of product diversification on firm performance (i.e., *ROA* and *Tobin's Q*), did not consider the possible issue of endogeneity. Product diversification (*PD*) was hypothesized as an endogenous variable in many previous studies because firm-level characteristics are expected to affect decisions on diversification and subsequent firm performance to some extent (e.g., Kang & Lee, 2014; Tran & Zaninotto, 2010). The Durbin–Wu–Hausman tests were conducted for models (1) and (2) to test whether the issue of endogeneity exists in the models. The results of the test indicated rejections of null hypotheses that variables are exogenous in models one and two. The endogeneity was significate in the models (1) (F value = 6.915,

p-value = 0.009) and (2) (F value = 12.446, p-value = 0.000). Therefore, this study conducted fixed effects instrumental variable estimations (models (3) and (4)) to mitigate the endogeneity.

Table 4.4 Estimation results for the influence of PD on ROA and Tobin's Q

Estimation Variables	ROA FE	Tobin's Q FE	ROA FE-2SLS	Tobin's Q FE-2SLS
	1	2	3	4
PD	0.041*	0.190*	0. 418*	1.323*
	(0.019)	(0.104)	(0.174)	(0.590)
SIZE	-0.003	-0.202*	-0.079*	-0.461**
	(0.013)	(-0.078)	(0.043)	(0.156)
AGE	-0.056	-0.318	-0.057	-0.404
	(0.061)	(0.313)	(0.052)	(0.392)
DEBT	-0.145**	0.057	-0.005	0.548
	(-0.047)	(0.173)	(0.072)	(0.327)
CI	-0.011	0.267	-0.056	0.264
	(0.025)	(0.243)	(0.072)	(0.274)
DIV	-0.001	0.019	-0.023	-0.027
	(0.006)	(0.059)	(0.022)	(0.081)
Constant	0.227	2.506**	0.408*	3.345**
	(0.180)	(0.825)	(0.207)	(1.139)
F-value	4.79**	23.71**		
Wald chi-square			65.070**	921.100**
Hausman test	24.94**	57.40**		
Anderson canonical correlation test			6.480*	6.480*
Sargan test			0.346	0.838
R-square	0.292	0.579		
Observation	190	190	190	190

Notes: * denotes 5% significance level; ** denotes 1% significance level; FE represents fixed effects estimation; FE-2SLS represents fixed effects instrumental variable estimation; robust standard errors are provided in parentheses; the Anderson canonical correlation test is a Lagrange multiplier (LM) test of whether the model is identified (i.e. the excluded instruments are relevant,

meaning correlated with the endogenous regressor) (Flores-Lagunes,2001); the Sargan test is a test of over-identifying restrictions with a null hypothesis that the instruments are valid; R-square stands for within R-square, which means the variance within the panel units in the model is accounted for.

The results of panel regression in Table 4.4 reveal that *ROA* and *Tobin's Q* were significantly related to product diversification in the fixed effects estimations and fixed effects instrumental variable estimations. The coefficients of product diversification were positive and statistically significant at the 5% significance level, suggesting that the degree of product diversification positively influenced firm performance regardless of the performance measurements. The coefficient of product diversification in the models (1) and (2) indicated that when product diversification is changed by one, *ROA* is expected to change by 0.041; when product diversification is changed by one, *Tobin's Q* is expected to change by 19%.

The validity of instrumental variables can be assessed based on the results of Anderson canonical correlation test and Sargan test for the model (3) and (4). The results of Anderson canonical correlation test indicated that the instrumental variables are relevant, meaning correlated with product diversification, endogenous variable. The results of Sargan test implied that the null hypotheses with instrumental variables valid were not rejected.

The coefficient of product diversification in the models (3) and (4) under the consideration of the issue of endogeneity indicated that when product diversification is changed by one, *ROA* is expected to change by 0.418; when product diversification is changed by one, *Tobin's Q* is expected to change by 132%. Among the coefficients of the

model (1), *DEBT* was negative and statistically significant at the 1% level, which meant that when *DEBT* is increased by one, *ROA* is expected to decrease by 0.145. The models (2), (3), and (4) indicated that *SIZE* was negative and statistically related to *ROA* and *Tobin's Q*, which implied that the larger firm size tends to worsen firm performance in China. The overall explanatory powers (R-squared value) of these independent variables on the dependent variable in the models (1) and (2) were 29.2% and 57.9%, respectively. The R-squared values of models (3) and (4) (FE-2SLS models) are not reported in Table 4.4 because the models' residuals were calculated and affected by the added instrumental variables, which did not indicate the actual regressors (Kang & Lee, 2014).

Table 4.5 shows that a nonlinear relationship exists between product diversification and firm performance. The results of the Hausman test indicated that the random effects model was more suitable than the fixed effects model for the model (5) (Chi-Square=11.97, p-value>0.05) and the fixed effects model was more suitable than random effects model for the model (6) (Chi-Square=32.88, p-value<0.05). Then, Breusch–Pagan LM tests for the model (5) was conducted to ensure the validity of the random effects model. The pooled OLS model would be more appropriate than the random effects model if the null hypothesis of the LM test (no significant difference exists across units, i.e., no panel effect), was not rejected. However, the results of the LM test rejected the null hypotheses, indicating that the random effects model was valid and appropriate for the model (5) (Chi-Square=49.64, p-value=0.000). F-test was conducted to ensure the fixed effects model that was more suitable than the pooled OLS model for the model (6). The result of the F-test (F statistics=9.63, p-value=0.000) indicated that

using the fixed effects model for the model (6) was more appropriate than the pooled OLS model.

Table 4.5 Estimation results of nonlinear relationship based on ROA and Tobin's Q

Estimation Variables	ROA-RE	Tobin's Q-FE
	5	6
PD	0.099*	0.909**
	(0.042)	(0.315)
PD^2	-0.040*	-0.295*
	(0.017)	(0.149)
SIZE	0.007	-0.289**
	(0.007)	(0.099)
AGE	-0.021	0.765*
	(0.014)	(0.206)
DEBT	-0.120**	-0.399*
	(0.038)	(0.169)
CI	-0.009	0.436
	(0.025)	(0.298)
DIV	0.004	-0.094
	(0.007)	(0.090)
Constant	0.039	0.193
	(0.056)	(0.788)
Wald Chi-sq	181.56**	
F-value		2.37**
Hausman test	11.97	32.88**
R-Square	0.281	0.154
Observation	190	190

Notes: * denotes 5% significance level; ** denotes 1% significance level; RE represents fixed effects estimation; robust standard errors are provided in parentheses; R-square stands for within R-square, which means the variance within the panel units in the models is accounted for.

The coefficient of product diversification was positive and statistically significant at the 5% level in the model (5), suggesting that the degree of product diversification positively influenced firm performance (*ROA*). The quadric product diversification was negative and statistically significant at the 5% level, which indicated a nonlinear relationship between product diversification and *ROA*. An inverse U-shaped curve was derived, as shown in Figure 4.1. The hypothesized standpoint that the degree of product diversification up to a certain point leads to maximum *ROA* was supported by the model

(5). Moreover, the coefficient of *DEBT* in the model (5) was negative and significant at the 1% level and was consistent with that of the model (1).

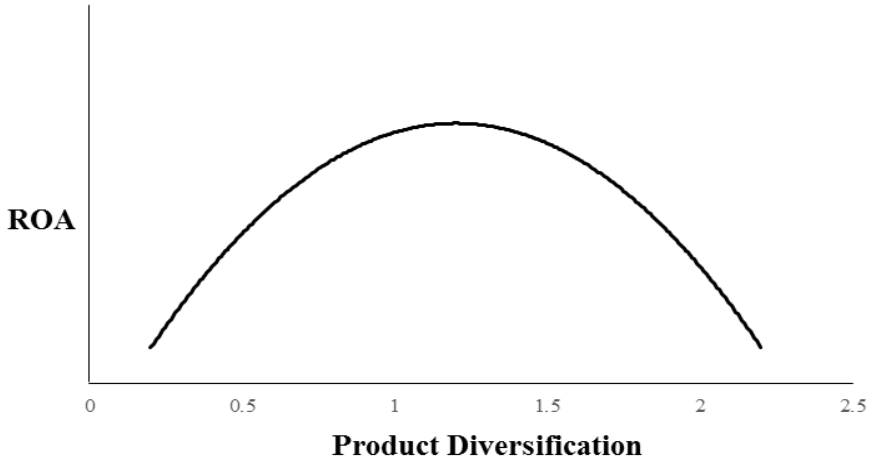

Figure 4.1 Nonlinear relationship between ROA and product diversification

The results of the model (5) are illustrated in Figure 4.1, which indicates that product diversification positively influenced *ROA* until a turning point was reached. The linear term of product diversification was positively significant, and the coefficient was 0.099. The squared term of product diversification (PD^2) was negatively significant, and the coefficient was −0.04. When the derivative of *ROA* was taken with respect to product diversification and the equation was set to zero, the maximized point was calculated by the coefficient of product diversification divided by the coefficient of quadric product diversification multiplied by two; the formula appears as $\frac{\partial ROA}{\partial PD} = 0.099 - 2 \times 0.04 \times PD = 0;\ PD \approx 1.24$. That is, the value of *ROA* reaches a maximal level while product diversification (entropy measurement) increases to 1.24.

The coefficient of product diversification was positive and statistically significant at the 1% significance level in the model (6), suggesting that the degree of product

diversification positively influenced firm performance (*Tobin's Q*). The quadric product diversification was negative and statistically significant at the 5% level, which indicated a nonlinear relationship between product diversification and *Tobin's Q*. An inverse U-shaped curve was derived, as shown in Figure 4.2. The hypothesized standpoint that the degree of product diversification up to a certain point leads to maximum *Tobin's* was supported by the model (6) as well. Moreover, the coefficients of *SIZE* and *DEBT* in the model (6) were negative and significant at the 1% and 5% level, respectively. The linear term of product diversification was positively significant, and the coefficient was 0.909. The squared term of product diversification (PD^2) was negatively significant, and the coefficient was −0.295. When the derivative of *Tobin's Q* was taken with respect to product diversification and the equation was set to zero, the maximized point was calculated by the coefficient of product diversification divided by the coefficient of quadric product diversification multiplied by two; the formula appears as $\frac{\partial\, Tobin's\, Q}{\partial PD} = 0.909 - 2 \times 0.295 \times PD = 0;\ PD \approx 1.54$. That is, the value of *Tobin's Q* reaches a maximal level while product diversification (entropy measurement) increases to 1.54.

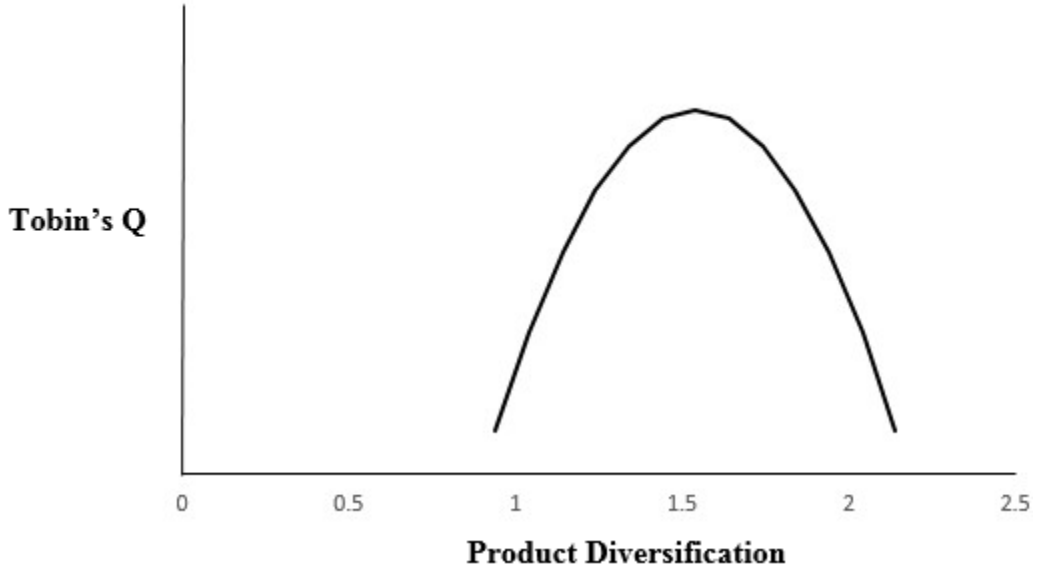

Figure 4.2 Nonlinear relationship between Tobin's Q and product diversification

4.4.2 Moderating effect of geographic diversification

This section illustrates the results referring to the second hypothesis that geographic diversification positively moderates the relationship between product diversification and firm performance. The moderating effect of geographic diversification was examined through estimations based on two subgroups. One group comprised firms that operate businesses in other provinces in China and implement a geographic diversification strategy, and the other group comprised firms that have no business in other provinces in China and have no geographic diversification strategy. Table 4.6 presents the T-test results of *ROA* and *Tobin's Q* in the two subgroups. *Tobin's Q* differed significantly between the two subgroups at the 1% level. In other words, the effect of geographic diversification on *Tobin's Q*, if any, differed in the two subgroups. However, *ROA* was insignificantly different between the two subgroups, which meant the effect of geographic diversification on *ROA* was not different.

Table 4.6 Results of T-test of ROA and Tobin's Q in geographic diversification subgroups

Variables	GD=1 (n=103)		GD=0 (n=87)		T-test
	M	SD	M	SD	
ROA	0.049	0.059	0.048	0.071	-0.141
Tobin's Q	0.889	0.469	1.159	0.743	3.043**

Notes: ** denotes 1% significance level; M represents the mean value, SD is standard deviation; GD (geographic diversification) equals to "1" to represent the group of firms that implement geographic diversification; and GD equals "0" to represent the group of firms that do not operate businesses in other provinces and have not implemented geographic diversification.

Panel regression estimations were conducted (results are shown in Table 4.7) to further investigate the moderating effect of geographic diversification on the relationship between product diversification and firm performance. The Hausman test was conducted

to determine whether the fixed effects or random effects model should be used. The fixed effects model was suitable (Chi-Square=22.63, p-value < 0.05) for model (7), whereas the random effects model was appropriate for model eight (Chi-Square=8.10, p-value > 0.05). The Durbin–Wu–Hausman, F-, and Breusch–Pagan LM tests were also conducted to ensure appropriate methods applied for the later estimations. The results of the Durbin–Wu–Hausman test for the model (7) (F=2.895, p-value=0.192) indicated that there was no endogeneity and the null hypothesis that all variables are exogenous was not rejected. The result of the F-test for the model (7) (F statistic= 6.63, p-value=0.000) showed that the fixed effects model was valid and unbiased compared with the pooled OLS model. Furthermore, the Breusch–Pagan LM test was conducted for model (8) to ensure the validity of the random effects model. The null hypothesis of the LM test is that no significant difference exists across units (i.e., no panel effect). The result of the LM test rejected the null hypothesis. Thus, the random effects model was appropriate for the model (8) (Chi-Square=25.36, p-value=0.000).

Table 4.7 Estimation results of the two geographic diversification subgroups

	If GD =1	If GD=0
	7	8
Estimation Variables	Tobin's Q-FE	Tobin's Q-RE
PD	0.431**	-0.015
	(0.145)	(0.169)
SIZE	-0.210**	-0.269**
	(0.072)	(0.099)
AGE	-0.281	0.639
	(0.283)	(0.443)
DEBT	-0.017	-0.006
	(0.221)	(0.231)
CI	0.624*	0.734*
	(0.300)	(0.328)
DIV	0.111	-0.069
	(0.075)	(0.091)
Constant	1.932*	0.697
	(0.875)	(1.235)
F-value	9.58**	

Wald Chi-square			94.74**
Hausman test for model selection	22.63*		8.10
Hausman test (comparing models 7 and 8)		94.30**	
Z statistic (comparing the equality of coefficients of PD in models 7 and 8)		Z= 2.00*	
R-square	0.634		0.531
Observation	103		87

Notes: * denotes 5% significance level; ** denotes 1% significance level; FE represents fixed effects estimation; RE represents random effects estimation; standard errors are provided in parentheses, and the coefficients of year dummy are not reported. Geographic diversification (GD) equals to "1" to represent the group of firms that implement geographic diversification, and GD equals to "0" to represent the group of firms that do not operate businesses in other provinces and have not implemented geographic diversification. R-square stands for within R-square, which means the variance within the panel units in the models is accounted for, and the Z statistic is used to compare coefficients of an individual variable from the same models applied to different independent samples (Clogg, Petkova, & Haritou, 1995).

In the group of firms that implement a geographic diversification strategy, the result of the model (7) revealed that the coefficient of product diversification was positive and statistically significant at the 1% level, suggesting that an increase in product diversification increases *Tobin's Q* for geographically diversified Chinese tourism firms. The model (7) also indicated that if Chinese tourism firms implementing geographic diversification increase their entropy index in measuring product diversification by one, their *Tobin's Q* values would increase by 43.1%. The coefficient of *SIZE* was negative and statistically significant at the 1% level, which implies that firm size tends to corrode firm performance in regard to *Tobin's Q* value. However, the coefficient of *CI* was positive and statistically significant at the 5% level, which implies that an increase in *CI* results in an increase in *Tobin's Q*. Among the coefficients of the model (7), *SIZE* and *CI* were negative and statistically significant at the 1% level and positive and statistically significant at the 5% level, respectively. The overall explanatory power (R-squared value) of these independent variables on the dependent variable in the models (7) and (8) was 63.4% and 53.1%, respectively.

The moderating effect of geographic diversification on the relationship between *PD* and *Tobin's Q* was examined by testing if a significant difference exists between the models (7) and (8) and between the coefficients of *PD* in the models (7) and (8). The Hausman test was conducted to compare the coefficients of the two models holistically. The differences in coefficients between the models (7) and (8) were significant at the 1% level (Chi-Square=94.30, p-value<0.01), which indicated that the effects of geographic diversification in the two subgroups led to significantly different estimations. Furthermore, the Z statistic was calculated under the null hypothesis of equality of coefficients in the two models to compare the coefficients of *PD* in the two models (Clogg et al., 1995). The significant Z[1] statistic indicated that the null hypothesis was rejected (Z=2.00, p-value<0.05). In conclusion, geographic diversification can positively moderate the relationship between product diversification and *Tobin's Q*.

Table 4.8 Estimation results of the two geographic diversification subgroups (Nonlinear relationship)

	If GD =1	If GD=0
	9	10
Estimation Variables	Tobin's Q-FE	Tobin's Q-FE
PD	1.215**	0.124
	(0.433)	(0.376)
PD^2	-0.394*	0.108
	(0.173)	(0.254)
SIZE	-0.175	-0.614*
	(0.136)	(0.233)
AGE	0.649	1.046
	(0.477)	(0.571)
DEBT	0.443	0.316
	(0.246)	(0.212)
CI	0.541	0.868
	(0.543)	(0.446)
DIV	0.011	-0.193
	(0.135)	(0.138)
Constant	-0.654	1.861

[1] Z statistic = $(\beta_1 - \beta_2)/\sqrt{(SE_{\beta 1}^2 + SE_{\beta 2}^2)}$, SE = standard error (Clogg et al., 1995, p. 1276).

	(1.105)	(1.137)
F-value	2.54**	2.73**
Hausman test for model selection	84.74**	14.74*
Hausman test (comparing models 9 and 10)	7.59	
Z statistic (comparing the equality of coefficients of PD in models 9 and 10)	Z= -1.28	
R-square	0.186	0.227
Observation	103	87

Notes: * denotes 5% significance level; ** denotes 1% significance level; FE represents fixed effects estimation; RE represents random effects estimation; standard errors are provided in parentheses, and the coefficients of year dummy are not reported. Geographic diversification (GD) equals to "1" to represent the group of firms that implement geographic diversification, and GD equals to "0" to represent the group of firms that do not operate businesses in other provinces and have not implemented geographic diversification. R-square stands for within R-square, which means the variance within the panel units in the models is accounted for, and the Z statistic is used to compare coefficients of an individual variable from the same models applied to different independent samples (Clogg, Petkova, & Haritou, 1995).

The result of the model (9) revealed that the coefficient of quadric product diversification was negative and statistically significant at the 5% level. The inverted U-shape relationship between *Tobin's Q* and product diversification was well supported in the group of firms that have a geographic diversification strategy. By contrast, the inverted U-shape relationship between *Tobin's Q* and product diversification was not supported in the group of firms that did not have a geographic diversification. Statistically, the result of Hausman test to compare the models (9) and (10) in the Table 4.8 indicated that there were no significant differences between two models' coefficients. Additionally, there was no significant difference between the coefficients of quadric product diversification in those two models. Therefore, although the inverted U-shape relationship between *Tobin's Q* and product diversification was supported in the group of firms with a geographic diversification, it was not supported in the group of firms without a geographic diversification. The moderating effect of geographic diversification on the

inverted U-shape relationship between *Tobin's Q* and product diversification was not supported.

4.4.3 Moderating effect of product relatedness

This section presents the results pertaining to the third hypothesis that product relatedness positively moderates the relationship between product diversification and firm performance. The moderating effect of product relatedness was examined by estimating parameters from two subgroups. One group comprised firms that are related diversification oriented, and the other group comprised firms that are unrelated diversification oriented. Table 4.9 presents the T-test results of *ROA* and *Tobin's Q* in the two subgroups. *Tobin's Q* was significantly different between the two subgroups at the 1% level. *ROA* was significantly different between the two subgroups. This result meant that the effect of product relatedness differed in the two subgroups to some extent.

Table 4.9 Results of T-test on the compared means of ROA and Tobin's Q based on related and unrelated diversification groups

Variables	Related diversification oriented (n=112)		Unrelated diversification oriented (n=78)		T-test
	M	SD	M	SD	
ROA	0.069	0.061	0.021	0.059	-5.461**
Tobin's Q	1.101	0.617	0.888	0.616	-2.332*

Notes: * denotes 5% significance level, ** denotes 1% significance level; M represents the mean value, SD is standard deviation; related diversification-oriented means that the degree of relatedness is over 0.5, and unrelated diversification-oriented means that the degree of relatedness is below 0.5.

The panel regression estimations were conducted (results are shown in Table 4.10) to examine the moderating effect of product relatedness on the relationship between product diversification and firm performance. The Hausman test was performed again for model selection. For the models (11), (12), and (13), random effects models were efficient

for estimations because the null hypotheses were not rejected. However, the null hypothesis of the Hausman test for the model (14) was rejected, which meant the fixed effects model was suitable for the model (14) (Chi-Square=75.05, p-value<0.01). Furthermore, Durbin–Wu–Hausman, F-, and Breusch–Pagan LM tests were also conducted to ensure the validity of the estimations. The results of the Durbin–Wu–Hausman test indicated that no significant issue of endogeneity existed in the models (13) (F=0.687, p-value=0.410) and (14) (F=0.584, p-value=0.448), which meant the null hypothesis that all variables are exogenous was not rejected. Furthermore, Breusch–Pagan LM tests for the models (11), (12), and (13) were conducted to ensure the validity of using random effects models comparing the pooled OLS models. The results of the LM tests indicated that the random effects model was only valid and appropriate for the models (11) (Chi-Square=46.79, p-value=0.000) and (12) (Chi-Square=59.14, p-value=0.000), which rejected the null hypothesis. The null hypothesis of the LM test for the model (13) (Chi-Square=0.00, p-value=1.000) was not rejected, which meant that no panel effect existed. Therefore, the pooled OLS model was appropriate for the model (13). The result of the F-test for the model (14) (F statistic= 6.13, p-value=0.000) showed that the fixed effects model was valid and unbiased compared with the pooled OLS model.

Table 4.10 Estimation results of related diversification oriented and unrelated diversification oriented firms

	Related diversification oriented		Unrelated diversification oriented	
Estimation Variables	ROA-RE	Tobin's Q-RE	ROA-Pooled OLS	Tobin's Q-FE
	11	12	13	14
PD	0.037*	0.057	0.003	0.547**
	(0.017)	(0.127)	(0.013)	(0.172)
SIZE	0.005	-0.275**	0.011	-0.336**
	(0.009)	(0.073)	(0.008)	(0.114)
AGE	-0.007	-0.109	-0.012	-2.902**
	(0.016)	(0.212)	(0.035)	(0.963)
DEBT	-0.116**	-0.181	-0.048	0.037

	(0.059)	(0.226)	(0.037)	(0.186)
CI	-0.029	0.455	-0.028	0.275
	(0.037)	(0.264)	(0.048)	(0.364)
DIV	0.003	-0.027	0.027	-0.005
	(0.012)	(0.084)	(0.015)	(0.065)
Constant	0.063*	2.825**	-0.006	9.422**
	(0.078)	(0.793)	(0.095)	(2.673)
F-value			2.25*	12.99**
Wald Chi-sq	88.93**	93.27**		
Hausman test	3.23	3.20	4.92	75.05**
Hausman test (comparing models 11 and 13)				49.91**
Hausman test (comparing models 12 and 14)				260.62**
Z statistic (comparing the equality of coefficients of PD in models 11 and 13)				Z= 1.59
Z statistic (comparing the equality of coefficients of PD in models 12 and 14)				Z= -2.50*
R-Square	0.417	0.491	0.175	0.775
Observation	112	112	78	78

Notes: * denotes 5% significance level; ** denotes 1% significance level; FE represents fixed effects estimation; RE represents random effects estimation; standard errors are provided in parentheses; the coefficients of the year dummy are not reported; related diversification-oriented means that the degree of relatedness is over 0.5; and unrelated diversification-oriented means that the degree of relatedness is below 0.5. R-square for models (11), (12), and (14) stands for within R-square, which means the variance within the panel units in the models is accounted for; R-square for model (13) is adjusted R-square; and the Z statistic is used to compare coefficients of an individual variable from the same models applied to different independent samples (Clogg, Petkova, & Haritou, 1995).

In the group of firms that were related diversification oriented, the result of the model (11) (Table 4.10) revealed that the coefficient of product diversification was positive and statistically significant at the 5% level, suggesting that product diversification increases *ROA* in Chinese tourism firms that are related diversification oriented. The model (11) also indicated that when related diversification-oriented firms increase their product diversification by one, their *ROA* is expected to increase by 0.037. The coefficient of *DEBT* was negative and statistically significant at the 1% level, which implies that an increase in debt level leads to a decrease in *ROA*. Among the coefficients of the model (12), *SIZE* was negative and statistically significant at the 1% level, which implies that large related oriented firms do not necessarily gain good *ROA*. The overall

explanatory power (R-squared value) of these independent variables on the dependent variable in the models (11) and (12) was 41.7% and 49.1%, respectively.

In the group of firms that are unrelated diversification oriented, the result of the model (12) revealed that the coefficient of product diversification was positive and statistically significant at the 1% level, suggesting that an increase in product diversification increases *Tobin's Q* in Chinese tourism firms. The model (14) also indicated that when Chinese tourism firms that are unrelated diversification oriented increase their entropy index in measuring product diversification by one, their *Tobin's Q* is expected to increase by 54.7%. The coefficients of *SIZE* and *AGE* were negative and statistically significant at the 1% level, which implies that large and old Chinese tourism firms that are unrelated diversification oriented do not necessarily gain good Tobin's Q. The overall explanatory power (R-squared value) of these independent variables on the dependent variable in the model (14) was 77.5%.

The moderating effect of product relatedness on the relationship between product diversification (*PD)* and firm performance was examined by testing whether significant differences exist in the coefficients between the models (11) and (13) and between the models (12) and (14) holistically. Moreover, we determined whether significant differences exist in the coefficients of *PD* in the models (11) and (13) individually and whether significant differences exist between the coefficients of *PD* in the models (12) and (14). The Hausman test was conducted to compare the coefficients of the two models holistically. The differences in coefficients between models (11) and (13) were significant at the 1% level (Chi-Square=49.91, p-value<0.01), which indicated that the effects of product relatedness in the two models differed. The differences in the coefficients

between the models (12) and (14) were significant at the 1% level (Chi-Square=260.62, p-value<0.01), which indicated that the effects of product relatedness across the two subgroups were also different. To compare the coefficients of *PD* in the models (11) and (13), the Z statistic was calculated under the null hypothesis of the equality of the coefficients in two models (Clogg et al., 1995). The significant Z statistic indicated that the null hypothesis was not rejected (Z=1.59, p-value>0.05), which implies that the coefficients of *PD* were not significantly different across the two models and that product relatedness had no moderating effect on the relationship between *PD* and *ROA*. However, in the comparison of the coefficients of *PD* in the models (12) and (14), the significant Z statistic indicated that the null hypothesis was rejected (Z=-2.50, p-value<0.05), which implies that the coefficients of *PD* were significantly different across the two models and that product relatedness had a negative moderating effect on the relationship between *PD* and *Tobin's Q*. In conclusion, product relatedness negatively moderated the relationship between product diversification and *Tobin's Q*, which was the opposite of hypothesis three.

Table 4.11 Estimations of nonlinear relationship in related diversification oriented and unrelated diversification oriented firms

	Related diversification oriented		Unrelated diversification oriented	
Estimation Variables	ROA-RE	Tobin's Q-RE	ROA-RE	Tobin's Q-FE
	15	16	17	18
PD	0.143	-0.626	0.011	0.653*
	(0.098)	(0.452)	(0.038)	(0.308)
PD^2	-0.056	0.389	-0.007	-0.053
	(0.048)	(0.242)	(0.014)	(0.142)
SIZE	0.005	-0.255**	0.011	-0.340**
	(0.009)	(0.075)	(0.006)	(0.115)
AGE	-0.016	0.013	-0.006	-2.787*
	(0.016)	(0.230)	(0.026)	(1.072)
DEBT	-0.137*	-0.269	-0.072*	-0.054
	(0.061)	(0.231)	(0.029)	(0.211)

CI	-0.021	0.448	-0.034	0.292
	(0.032)	(0.265)	(0.035)	(0.357)
DIV	-0.008	-0.022	0.022*	-0.008
	(0.009)	(0.083)	(0.010)	(0.069)
Constant	0.060	2.656**	-0.007	9.105**
	(0.055)	(0.808)	(0.060)	(3.006)
Wald Chi-sq	186.99**	97.69**	54.51**	
F-value				11.86**
Hausman test	11.53	5.97	11.42	82.90**
R-Square	0.347	0.509	0.124	0.775
Observation	112	112	78	78

Notes: * denotes 5% significance level; ** denotes 1% significance level; FE represents fixed effects estimation; RE represents random effects estimation; robust standard errors are provided in parentheses; the coefficients of the year dummy are not reported; related diversification oriented means that the degree of relatedness is over 0.5; unrelated diversification oriented means that the degree of relatedness is below 0.5; R-square stands for within R-square, which means that the variance within the panel units in the models is accounted for.

Table 4.11 shows the results of the nonlinear relationship between product diversification and firm performance in the two subgroups of related diversification oriented and unrelated diversification-oriented firms. Given that a significant nonlinear relationship already existed between product diversification and firm performance, we focused on whether a significant nonlinear relationship exists in the two subgroups. The random effects estimation method was selected for the models (15), (16), and (17) based on the results of the Hausman test. As shown in the results, no significant nonlinear relationships existed between product diversification and firm performance in both subgroups.

4.4.4 Moderating effect of human capital

This section explains the results pertaining to the fourth hypothesis that human capital (*HC*) positively moderates the relationship between product diversification and firm performance. The moderating effect of *HC* was examined by additionally formulating an

interaction variable. Table 4.12 demonstrates that random effects estimation method was suitable for the models (19) (Chi-Square=12.48, p-value>0.05), (21) (Chi-Square=14.84, p-value>0.05), and (22) (Chi-Square=14.96, p-value>0.05); and the fixed effects estimation method was suitable for model (20) (Chi-Square=19.72, p-value<0.01) after conducting the Hausman test. Therefore, the Breusch–Pagan LM test was performed to ensure the validity of the random effects estimations. The results of the LM test rejected the null hypothesis that no differences exist across all units, which meant that the using random effects estimation method for the models (19) (Chi-Square=33.91, p-value=0.000), (21) (Chi-Square=86.31, p-value=0.000), and (22) (Chi-Square=24.68, p-value=0.000) was more appropriate than the pooled OLS. The result of F-test (F=3.41, p-value<0.01) indicated that using fixed effects method for the model (20) was more appropriate than using the pooled OLS.

Table 4.12 Estimation results of the moderating effect of human capital

Estimation Variables	ROA-RE	Tobin's Q-FE	ROA-RE	Tobin's Q-RE
	19	20	21	22
PD	0.021	0.351**	0.083*	0.456
	(0.012)	(0.135)	(0.035)	(0.281)
HC	0.026*	0.073	0.029	0.093
	(0.011)	(0.082)	(0.024)	(0.273)
PD×HC	-0.135	-0.126	-0.004	-0.279
	(0.013)	(0.135)	(0.042)	(0.523)
PD^2			-0.032*	-0.112
			(0.016)	(0.146)
PD^2×HC			-0.004	0.171
			(0.020)	(0.260)
SIZE	0.009	0.288*	0.011	0.243**
	(0.006)	(0.084)	(0.006)	(0.085)
AGE	0.011	0.699*	-0.009	0.495
	(0.017)	(0.204)	(0.015)	(0.302)
DEBT	-0.136**	-0.341	-0.131**	0.247
	(0.045)	(0.220)	(0.043)	(0.185)
CI	-0.035	0.361	-0.003	0.302
	(0.019)	(0.279)	(0.019)	(0.269)

DIV	-0.004	0.090	-0.003	-0.071
	(0.007)	(0.078)	(0.007)	(0.079)
Constant	-0.300*	-0.382	-0.384	2.222
	(0.135)	(1.129)	(0.336)	(4.048)
Wald Chi-sq	187.39**		159.84**	32.29**
F value		3.42**		
Hausman test	12.48	19.72**	14.84	14.96
R-Square	0.289	0.149	0.283	0.151
Observation	190	190	190	190

Notes: * denotes 5% significance level; ** denotes 1% significance level; RE represents random effects estimation; standard errors are provided in parentheses; the coefficients of the year dummy are not reported; R-square stands for within R-square, which means the variance within the panel units in the models is accounted for.

The estimations of the model (19) revealed that the coefficient of *HC* was positive and statistically significant at the 5% significance level, suggesting that an increase in the number of years of education that employees have received increases *ROA* in Chinese tourism firms. The coefficients of *PD* in the model (20) and (21) were significantly positive at the 5% significance level. The coefficients of *DEBT* were negative and statistically significant at the 1% significance level in the model (19) and (21), which implies that a decrease in *DEBT* leads to an increase in *ROA* in Chinese tourism firms. Among the coefficients of *SIZE* in the model (20) and (22) were negative and statistically significant at the 5% and 1% significance levels. To conclude, hypothesis four about the proposed moderating effect of *HC* on the relationship between product diversification and firm performance was not supported because the coefficients of the interaction of *HC* and product diversification in both linear and nonlinear models were insignificant.

4.4.5 Moderating effect of structure flatness

The moderating effect of structure flatness on the relationship between product diversification and firm performance was examined based on estimations from two

subgroups. One group (high level of flatness in structure) comprised firms that have only son-subsidiary firms or no son-subsidiary firms; another group (low level of flatness in structure) comprised firms that have son-subsidiary and grandson-subsidiary firms. The former group is flatter in terms of organizational structure than the latter group. A T-test was conducted to investigate the different effects of flatness in a structure in the two subgroups. Table 4.13 presents the T-test results of *ROA* and *Tobin's Q* in the two subgroups. *Tobin's Q* and *ROA* differed significantly between the two subgroups at the 1% level, which meant that the effect of structure flatness on *ROA* and *Tobin's Q* was different in the two groups to some extent.

Table 4.13 T-test result of ROA and Tobin's Q based on a high/low level of flatness of structure

Variables	High level of structure flatness (n=119)		Low level of structure flatness (n=71)		T-test
	M	SD	M	SD	
ROA	0.031	0.006	0.081	0.007	-5.592**
Tobin's Q	1.133	0.059	0.797	0.055	4.195**

Notes: **denotes 1% significance level; M represents the mean value, SD is standard deviation; the two groups are divided into one group that has grandson-subordinate firms (low level of structure flatness) and another group that has no grandson-subordinate firm (high level of structure flatness).

The effect of product diversification on firm performance was analyzed in the two subgroups to examine the moderating effect of structure flatness on the relationship between product diversification and firm performance. The differences between the coefficients of product diversification across different models were investigated. Panel regression estimations were conducted, and the results were presented in Table 4.14. The results of Hausman tests suggested that random effects models were more efficient and appropriate than fixed effects models for the estimations of the models (23) (Chi-

Square=6.41, p-value>0.05), (25) (Chi-Square=0.33, p-value>0.05), and (26) (Chi-Square=10.52, p-value>0.05). Furthermore, the Breusch–Pagan LM test was performed to ensure the validity of random effect estimations. The results of the Breusch–Pagan LM tests indicated that using random effects estimation method for the models (23) (Chi-Square=4.03, p-value=0.02) and (25) (Chi-Square=21.71, p-value=0.00) were more appropriate than the pooled OLS model. Furthermore, as the null hypothesis of the LM test for the model (26) (Chi-Square=0.00, p-value=1.00) was not rejected, the pooled OLS model was implied as the more appropriate estimation method than the random effects estimation method for the model (26) because no differences existed across units. Lastly, the result of Hausman test from the model (24) indicated that using fixed effects method was more suitable than random effect estimation method for the model (24). The result of F-test for the model (24) (F=3.09, p-value=0.000) indicated that the fixed effects estimation method was also superior to the pooled OLS estimations for the model (24).

Table 4.14 Estimation results of two groups of firms with the high/low level of flatness of firm structure

Estimation Variables	High level of structure flatness		Low level of structure flatness	
	ROA-RE	Tobin's Q-FE	ROA-RE	Tobin's Q-pooled OLS
	23	24	25	26
PD	0.013	0.464*	0.011	-0.141*
	(0.016)	(0.229)	(0.020)	(0.068)
SIZE	0.011	-0.323*	-0.010	-0.311**
	(0.009)	(0.124)	(0.019)	(0.040)
AGE	-0.015	1.065*	0.008	1.225**
	(0.023)	(0.484)	(0.044)	(0.141)
DEBT	-0.061*	-0.464*	-0.204**	-0.414**
	(0.031)	(0.179)	(0.048)	(0.152)
CI	-0.036	0.411	0.054	0.799**
	(0.038)	(0.380)	(0.029)	(0.154)
DIV	0.016	-0.084	-0.017	0.000
	(0.012)	(0.118)	(0.016)	(0.067)

Constant	0.014	-0.313	0.193*	-0.154
	(0.089)	(1.394)	(0.093)	(0.332)
Wald Chi-sq	29.21**		142.59**	
F value		3.99**		20.75**
Hausman test	6.41	18.85**	0.33	
Hausman test (Comparing models 24 and 26)				31.39**
Z statistic (comparing the equality of coefficients of PD in models 24 and 26)				Z= 2.532*
R square	0.109	0.204	0.461	0.638
Observation	119	119	71	71

Notes: * denotes 5% significance level; ** denotes 1% significance level; FE represents fixed effects estimation; RE represents random effects estimation; standard errors are provided in parentheses; the coefficients of year dummy are not reported; a firm that has grandson-subordinate firms belongs to the group with a low level of structure flatness; a firm that has no grandson-subordinate firm belongs to the group with a high level of structure flatness; the coefficients of year dummy are not reported; R-square in models (23), (24), and (25) stands for within R-square, which means the variance within the panel units in the models is accounted for; R-square for model (26) is adjusted R-square; and Z statistic is used to compare coefficients of an individual variable from the same models applied to different independent samples (Clogg, Petkova, & Haritou, 1995).

The coefficient of *PD* in the model (24) was positive and statistically significant at the 5% level, which implied that an increase in product diversification leads to an increase in *Tobin's Q* value in the group of firms with a high level of flatness in structure. Whilst the positive coefficient of *PD* in the model (24), the coefficient of *PD* was negative and statistically significant at the 5% level, which implied that an increase in product diversification results in a decrease in *Tobin's Q* in the group of firms with a low level of flatness in structure. Furthermore, *SIZE* and *DEBT* were negative and statistically significant at the 1% significance level, suggesting that the size of tourism firms negatively affect the value of *Tobin's Q*, and an increase in the debt ratio decreases the value of *Tobin's Q* in both model (24) and (26). However, *AGE* was positive and statistically significant at the 5% and 1% level in the model (24) and (26), respectively, which revealed that an older firm can increase the *Tobin's Q* value.

The moderating effect of structure flatness on the relationship between *PD* and firm performance was examined by testing if a significant difference in coefficients exists between models and between the coefficients of *PD* across models. Since there were no any significant influences of *PD* captured in the model (23) and (25), the comparison between models and coefficients were focused on the model (24) and (26). The Hausman test was conducted to compare the coefficients of two models (model (24) and (26)) holistically. The significant and differences in their coefficients were found between models (24) and (26) (Chi-Square=31.39, p-value<0.01). Furthermore, the comparison of coefficients of *PD* between models (24) and (26) was performed by calculating the Z statistic under the null hypothesis of the equality of coefficients in two models (Clogg et al., 1995) as the next step to investigate the moderating effect of the flatness in structure. A significant Z statistic was found, and it indicated that the null hypothesis was rejected (Z=2.532, p-value<0.05). Hence, the coefficients of *PD* in models (24) and (26) were significantly different at the significance level of 5%, which implied that there was a positive moderating effect of the flatness of firm structure on the relationship between *PD* and *Tobin's Q*. Specifically, the significant and positive effect of *PD* on *Tobin's Q* found in the group of firms with the high level of in flatness tended to be turned to negative in the group of firms with the low level of flatness in structure.

Table 4.15 Estimations of nonlinear relationship in two groups of firms with the high/low level of flatness of firm structure

	High level of structure flatness		Low level of structure flatness	
Estimation Variables	ROA-RE	Tobin's Q-FE	ROA- pooled OLS	Tobin's Q-RE
	27	28	29	30
PD	0.049	0.632*	0.013	0.048
	(0.037)	(0.306)	(0.086)	(0.467)
PD^2	-0.018	-0.347	-0.064	-0.113

	(0.014)	(0.262)	(0.044)	(0.263)
SIZE	0.009	-0.348*	-0.009	-0.344**
	(0.008)	(0.141)	(0.010)	(0.097)
AGE	-0.018	1.089*	0.052	0.797**
	(0.014)	(0.511)	(0.036)	(0.165)
DEBT	-0.064*	-0.434*	-0.149**	-0.062
	(0.029)	(0.186)	(0.041)	(0.271)
CI	-0.033	0.521	0.053	0.900**
	(0.034)	(0.438)	(0.039)	(0.289)
DIV	0.013	-0.096	-0.005	0.022
	(0.008)	(0.120)	(0.017)	(0.096)
Constant	0.015	-0.269	-0.005	0.807
	(0.068)	(1.457)	(0.102)	(0.755)
F-value		3.67**	2.78**	
Wald Chi-sq	123.73**			147**
Hausman test	4.63	21.53**		11.11
R-Square	0.114	0.219	0.262	0.068
Observation	119	119	71	71

Notes: * denotes 5% significance level; ** denotes 1% significance level; RE represents random effects estimation; robust standard errors are provided in parentheses; the coefficients of year dummy are not reported; a firm that has grandson-subordinate firms belongs to the group with a low level of structure flatness; a firm that has no grandson-subordinate firm belongs to the group with a high level of structure flatness; R-square in model (22) stands for within R-square, which means the variance within the panel units in the models is accounted for; and R-square for model (23) is adjusted R-square.

The results of the Hausman test in Table 4.15 show that the random-effects estimation method is more suitable for the models (27), (29) and (30) than the fixed-effects estimation method. Afterward, the results of the Breusch–Pagan LM tests indicated that the pooled OLS model was more appropriate than the random effects model for the model (29). The results of estimations from Table 4.15 reveal that no significant nonlinear relationships were found between product diversification and firm performance measures in the models (27), (28), (29), and (30), which showed that the moderating effect of structure flatness on the nonlinear relationship between product diversification and firm performance was not supported. To sum up, although the moderating effect on the nonlinear relationship was not supported, structure flatness exerted a moderating effect

on the linear relationship between *PD* and firm performance based on the comparison of the equality of coefficients of *PD* in two different models (models (24) and (26), Z-statistic at the 5% significance level). A significant and positive effect of *PD* was found in the group of firms with a high level of flatness in structure and a significant and negative effect of *PD* was found in the group of firms with a low level of flatness in structure, which implied that the positive effect of product diversification on *Tobin's Q* became negative while the flatness in a firm's structure increased.

4.4.6 Moderating effect of market structure (market concentration)

This section presents the results pertaining to the sixth hypothesis that market concentration positively moderates the relationship between product diversification and firm performance. The moderating effect of market concentration was examined by building an interaction variable. The results of Hausman test in Table 4.16 demonstrated that using fixed effects estimation method was more suitable for the model (31) models (Chi-Square=31.78, p-value<0.01) and using random effects estimation method was more suitable for the model (32) (Chi-Square=21.57, p-value>0.05), (33) (Chi-Square=11.83, p-value>0.05), and (34) (Chi-Square=8.89, p-value>0.05), respectively. Furthermore, the F-test and Breusch–Pagan LM test were conducted to ensure the validity of fixed and random effects estimations. The results of the F-test for the model (31) (F statistic=5.05, p-value=0.00) indicated that the fixed effects estimation method used for the model (31) was unbiased and valid. The results of the Breusch–Pagan LM tests for the model (32), (33), and (34) indicated that the null hypotheses were rejected, which meant that using random effects estimation method was more appropriate for the model (32), (33), and (34) than the pooled OLS method. Furthermore, the Durbin–Wu–Hausman test was conducted

again, and the results indicated no significant issue of endogeneity in the model (31) (F=0.139, p-value=0.710).

Table 4.16 Estimation results of the moderating effect of market structure

Estimation Variables	ROA-FE	Tobin's Q-RE	ROA-RE	Tobin's Q-RE
	31	32	33	34
PD	0.045*	0.238**	0.004	0.272*
	(0.021)	(0.094)	(0.011)	(0.140)
MC	0.834*	4.224	0.218	1.633
	(0.447)	(4.170)	(1.043)	(11.890)
PD×MC	2.319**	11.766*	1.373	15.822
	(0.777)	(5.373)	(1.461)	(14.545)
PD^2			0.051	-0.062
			(0.023)	(0.143)
PD^2×MC			0.478	-2.145
			(0.820)	(8.325)
SIZE	0.002	-0.225**	0.012*	-0.225**
	(0.012)	(0.082)	(0.005)	(0.081)
AGE	0.025	0.355	0.002	0.366
	(0.035)	(0.343)	(0.017)	(0.320)
DEBT	-0.151*	0.171	-0.119**	0.163
	(0.060)	(0.185)	(0.045)	(0.198)
CI	-0.034	0.309	-0.055*	0.316
	(0.026)	(0.255)	(0.023)	(0.276)
DIV	-0.003	-0.07	0.002	-0.069
	(0.006)	(0.086)	(0.008)	(0.086)
Constant	-0.137	1.953	-0.031	1.523
	(0.124)	(1.361)	(0.166)	(2.214)
F-value	5.94**			
Wald Chi-sq		20.35**	170.89**	30.07**
Hausman test for model selection	31.78**	21.57	11.83	8.89
R-Square	0.322	0.142	0.302	0.150
Observation	190	190	190	190

Notes: * denotes 5% significance level; ** denotes 1% significance level; FE represents fixed effects estimation; RE represents random effects estimation; robust standard errors are provided in parentheses; and R-square stands for within R-square, which means the variance within the panel units in the models is accounted for.

The estimations of the model (31) revealed that the coefficients of *PD* (0.045) and *MC* (0.834) were positive and statistically significant at the 5% level, suggesting that as *PD* and market concentration increases by one, *ROA* increases 0.045 and 0.834,

respectively. The coefficient of the interaction variable was positive and statistically significant at the 1% level, which indicated that the positive moderating effect of market concentration on the relationship between *PD* and *ROA* was supported. The coefficient of *DEBT* was negative and statistically significant at the 1% level, which was in agreement with the results from previous models. It implied that an increase in *DEBT* leads to a decrease in *ROA* in Chinese tourism firms. Among the coefficients of the model (32), the coefficient of *PD* was positive and statistically significant at the 1% level, suggesting that *Tobin's Q* increases while *PD* increases. The coefficient of the interaction variable in the model (32) was positive and statistically significant at the 5% level, which indicated that the positive moderating effect of market concentration on the relationship between *PD* and *Tobin's Q* was supported. *SIZE* was negative and statistically significant at the 1% level, which implied that large firms do not gain good *Tobin's Q*. The overall explanatory power (R-squared value) of the models (31) and (32) was 32.2% and 14.2%, respectively. The models (33) and (34) focused on investigating the moderating effect of market concentration on a non-linear relationship between product diversification and firm performance. The insignificant coefficients of interaction variable were found in the models (33) and (34), which concluded that the moderating effect of market concentration on a non-linear relationship between product diversification and firm performance was not supported.

Figure 4.3 demonstrated the moderating effect of market structure (measured by market concentration on the linear relationship between product diversification and firm performance.

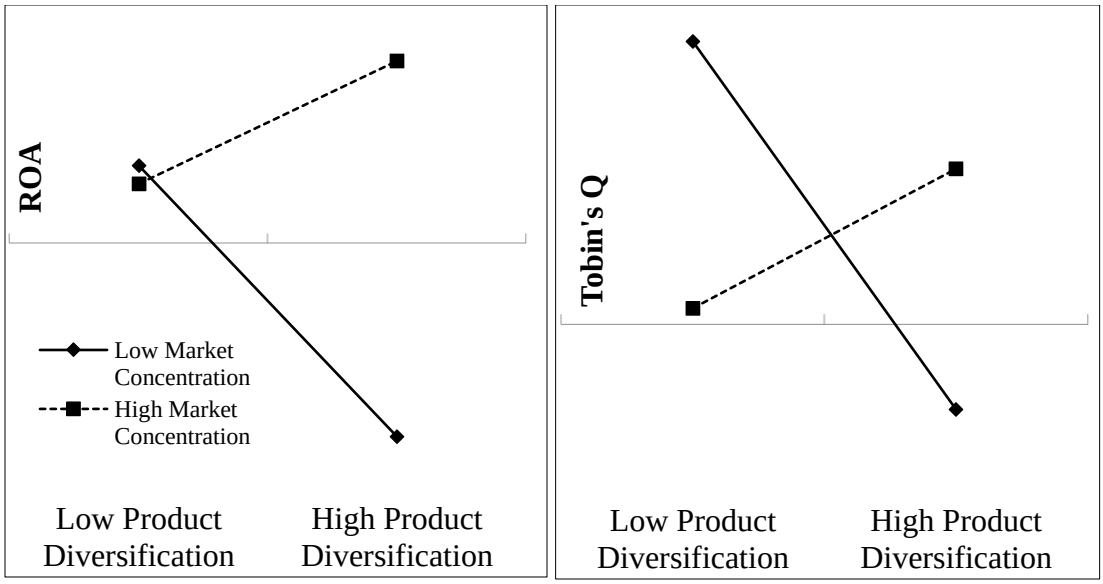

Figure 4.3 moderating effect of market structure (measured by market concentration) on the linear relationship between product diversification and firm performance

Market structure (measured by market concentration) as a moderator affecting the linear relationship between product diversification and firm performance measures, *ROA* and *Tobin's Q*, it changed the directions of the *PD–ROA* and *PD-Tobin's Q* relationships. Figure 4.3 shows that under the high market concentration, the positive relationship between product diversification firm performances was supported. By contrast, under the low market concentration, the negative relationship between product diversification and firm performance was observed.

In conclusion, market structure (measured by market concentration) changed the positive relationship between product diversification and firm performance into a negative relationship. As shown in Figure 4.3, high market concentration increased the positive effect of product diversification on firm performance; low market concentration reinforced the negative effect of product diversification on firm performance. The positive moderating effect of market structure (measured by market concentration) on the

linear relationship between product diversification and firm performance was supported. The model (33) and (34) were conducted to examine the moderating effect of market structure on the nonlinear relationship between product diversification and firm performance. Insignificant coefficients of interaction items were found in those models. In short, the market structure had no moderating effect on the nonlinear relationship between product diversification and firm performance.

4.5 Summary of the chapter

This chapter presents the results pertaining to the six hypotheses in the previous chapters, as shown in Table 4.17.

Table 4.17 Summary of the results with estimation methods

	ROA	Tobin's Q	ROA	Tobin's Q
	A linear relationship (H1a)		Inverted U-shape (H1b)	
	H1a: Product diversification positively influences firm performance.		H1b: Quadric product diversification negatively influences firm performance.	
	Fixed effect 2SLS Supported	Fixed effect 2SLS Supported	Random effect Supported	Fixed effect supported
H2	Geographic diversification positively moderates the relationship between product diversification and firm performance.			
	Not applied	Two subgroups Supported	Not applied	Two subgroups Not supported
H3	Product relatedness positively moderates the relationship between product diversification and firm performance.			
	Two subgroups Not support	Two subgroups Against hypothesis	Two subgroups Not supported	Two subgroups Not supported

H4	Human capital (measured by the average number of years of education of employees in a firm) positively moderates the relationship between product diversification and firm performance.			
	Random effect Not supported	Random effect Not supported	Random effect Not supported	Random effect Not supported
H5	Flatness in organizational structure positively moderates the relationship between product diversification and firm performance.			
	Two subgroups Not supported	Two subgroups Supported	Two subgroups Not supported	Two subgroups Not supported
H6	Market structure (measured by the level of market concentration) positively moderates the relationship between product diversification and firm performance.			
	Fixed effect Supported	Random effect supported	Random effect Not supported	Random effect Not supported

In order to test hypotheses 1a and 1b, fixed effects models were used to investigate the influence of product diversification on firm performance (*ROA* and *Tobin's Q*). Fixed effects instrumental variable estimations were carried out due to the existence of endogeneity. Ultimately, the positive influences of product diversification on *ROA* and *Tobin's Q* were identified, and hypothesis 1a was fully supported. A negative influence of quadric product diversification on *ROA* and *Tobin's Q* were found, which meant hypothesis 1b was supported with the dependent variables of *ROA* and *Tobin's Q*. The optimal points of product diversification were calculated in maximizing *ROA* and *Tobin's*, which were 1.24 and 1.54. These implied that while product diversification ranged from 1.24 to 1.54, the values of *ROA* and *Tobin's Q* reached the maximum. Furthermore, the moderating effect of geographic diversification on the relationship between *PD* and firm

performance was examined by using two subgroups. A significant difference in *Tobin's Q* was found across the two subgroups, and the positive moderating effect of geographic diversification on *PD* and *Tobin's Q* was supported. Hypothesis 3, which posited that product relatedness positively moderates the relationship between product diversification and firm performance, was tested by dividing into two subgroups: related versus unrelated diversification-oriented tourism firms. The negative and significant moderating effect of product relatedness on the relationship between product diversification and *Tobin's Q* was supported, which was contrary to the third hypothesis. Moreover, the fourth hypothesis was not supported based on the subgrouping method. The fifth hypothesis was supported by dividing into two groups and comparing the equality of coefficients of the product diversification variable. Lastly, positive and significant moderating effect of market structure (measured by market concentration ratio) on the relationship between *PD* and firm performance measures, *ROA* and *Tobin's Q* (sixth hypothesis) was supported. In short, hypothesis 1a was supported by accounting-based and market-based performance measures (*ROA* and *Tobin's Q*), and hypothesis 1b was supported based on both firm performance measures (*ROA* and *Tobin's Q*). Hypothesis two was supported by the market-based performance measure (*Tobin's Q*). The results for testing hypothesis three were against what was originally hypothesized based on the market-based performance measure (*Tobin's Q*). Hypothesis four was not supported, hypothesis five was supported based on the performance measure (*Tobin's Q*), and hypothesis six was supported by both performance measures (*ROA* and *Tobin's Q*). Overall, the moderating effects on the nonlinear relationship between product diversification and *both* firm performance measures were not supported.

Guided by the research objectives of the current study, the next chapter offers a comprehensive discussion of these results based on the previous literature review, builds connections between the findings and the applied theories, and discusses the results through a comparison with those of relevant previous studies to delineate the theoretical contributions and practical implications.

CHAPTER 5. DISCUSSIONS

5.1 Chapter introduction

This chapter provides discussions on the results regarding the research objectives and how this study connects to prior studies. The results discussed in this study were obtained based on secondary data derived from 26 publicly-traded Chinese tourism firms traded on Chinese stock exchanges (Shang Hai or Shen Zhen Stock Exchange). A total of 190 observations were collected and used for panel regression analysis to achieve the objectives stated in the first chapter. The research objectives were discussed and presented in line with the matched results in the current chapter.

The main purpose of this study, which is to investigate the factors that influence the relationship between product diversification and firm performance in publicly-traded Chinese tourism firms, was revisited. Investigations on the product diversification- firm performance relationship and the geographic diversification-firm performance relationship were elaborated respectively. For recapitulation, the four research objectives that were developed to achieve the purpose of the study were restated as follows:

1. Identify the relationship between product diversification and the performance of publicly-traded Chinese tourism firms.
2. Identify the influence of geographic diversification on the relationship between product diversification and the performance of publicly-traded Chinese tourism firms.

3. Identify the influences of organizational factors on the relationship between product diversification strategy and the performance of publicly-traded Chinese tourism firms.
4. Identify the influence of market structure on the relationship between product diversification strategy and the performance of publicly-traded Chinese tourism firms.

These research objectives were developed on the basis of the SCP paradigm, modern portfolio theory, resource-based theory, and resource dependence theory which also provided theoretical support for the hypothesis development. Among the four research objectives, only the third one included three organizational factors, namely: level of relatedness, human capital, and level of organization flatness. Thus, these three factors were included and utilized to discuss the results with respect to the third objective.

Furthermore, the discussions of the findings was linked with the findings of previous literature involving relevant theories and existing studies. Given that this study was conducted in the Chinese tourism context, relevant existing studies conducted in the context of China were particularly discussed and explicated with the findings of this study. Afterward, similar studies conducted in other contexts were also included in the discussions because possibly different results from studies under different contexts may provide valuable insights for the current study. Moreover, this chapter elaborates both the theoretical and the practical implications.

To summarize the results of this study, a positive effect of product diversification on *ROA* and *Tobin's Q* was identified. The nonlinear relationships between product

diversification and firm performance measures (*ROA* and *Tobin's Q*) were also found, which implied that the positive effect of product diversification on ROA becomes negative after a certain level (while the level of diversification exceeds 1.24 based on the diversification measure of entropy index) of product diversification; and that the positive effect of product diversification on *Tobin's Q* becomes negative after a certain level (while the level of diversification exceeds 1.54 based on the diversification measure of entropy index) of product diversification. Hitt et al. (1997) found that 1.88 was the optimal point of product diversification in maximizing ROA in the manufacturing firms of Standard & Poor's COMPUSTAT Database. Since there was a limited literature that explored the effect of product diversification on firm performance in the tourism industry, the optimal range from 1.24 to 1.54 of product diversification provided significant references in maximizing firm performance. Furthermore, a positive effect of geographic diversification on *Tobin's Q* was found after comparing two subgroups (one group of firms with geographic diversification and another group of firms without geographic diversification). Regarding the effect of an organizational factor, the level of relatedness in a product did not positively moderate the relationship between product diversification and firm performance. However, based on two subgroups (related oriented firms versus unrelated oriented firms), product diversification positively affected a firm's Tobin's Q in the group of firms that are unrelated oriented, which implies that the level of relatedness negatively moderated the relationship between product diversification and Tobin's Q. Moreover, the factors of human capital exerted insignificant effects on the relationship between product diversification and firm performance. A significant and positive effect of product diversification was found in the groups of firms with a high level of structure

flatness, while a significant and negative effect of product diversification was found in the groups of firms with a low level of structure flatness, indicating that the positive effect of product diversification on Tobin's Q becomes negative if the flatness in structure decreases. Lastly, the results showed that market structure positively and significantly moderated the relationships between product diversification and firm performance measures (ROA and Tobin's Q).

5.2 Relationship between product diversification (PD) and firm performance (P)

5.2.1 Linear relationship

A positive effect of product diversification on firm performance was found among China's publicly-traded tourism firms, implying that the benefits from product diversification with regard to a firm's value and profitability are created from a synergy bysharing the firm's tangible resources and managerial /technological knowledge (Penrose, 1959; Tanriverdi & Venkatraman, 2005). A positive effect of product diversification on firm performance was also observed by many prior studies in other contexts (e.g., Bodnar et al., 1997; Han et al., 1998; Kuppuswamy & Villalonga, 2010; Morck & Yeung, 2003). In the Chinese context, several similar studies on China's publicly-traded tourism firms have also been conducted. Although the positive relationship between product diversification and firm performance has been found in prior studies (e.g., Duan & Zhou, 2012; Fan, 2009; Huang & Huang, 2011; Liu & Wang, 2007; Wang & Xu, 2008, 2009), among them, limited studies (e.g., Wang & Xu, 2008, 2009) were related to tourism industry and analyzed data after 2008. As we known, after 2008 Beijing Olympic Games, there were some big tourism firms that launched on

Shanghai and Shenzhen Exchanges, such as the China International Travel Service Co., Ltd (Stock code 601888) and the Songcheng Performance Development Co., Ltd (Stock code 300144), which suggests that how the link of diversification-performance is affected by contextual factors might be quite different from that of before 2008. This study extended the prior literature and included the more giant tourism firms in the research group, thus providing an updated research regarding the diversification-performance relationship. The findings concerning the effect of product diversification on firm performance were consistent with the prior study.

Arguments are made based on the perspectives of market power, portfolio theory, and resource-based theory to explain the beneficial effect of product diversification on firm performance. Publicly-traded Chinese tourism firms can achieve conglomerate power if they increase product diversification within their business units. Firms with product diversification may operate their businesses in a dominant position so that many opportunities are made available for them to use their dominant position to set and raise prices of products or services and earn monopolistic profits (Hill, 1985; Montgomery, 1994, Kang & Lee, 2014). From the perspective of market power, firms with product diversification may gain more competitive advantages than non-diversified firms because of conglomerate power (Hill, 1985). In China, scores of attraction management organizations operate their businesses depending on nature reserves, scenic spots, and historical and tourist attractions; hence, they are unique and possess natural monopolistic power in the tourism market (Wang & Xu, 2009). Once attraction management firms generate continual cash flows, most of them diversify their businesses according to their value chains, such as the businesses related to accommodation, transportation around

attractions, merchandise, and real estate (Wang, 2008). Product diversification helps Chinese tourism firms build market power and economies of scope, which in turn improves firm performance.

From the perspective of modern portfolio theory, the effect of product portfolio can stabilize the overall return of a firm and reduce risk and bankruptcy costs (Kang & Lee, 2014). In China, travel service-related firms can offer different travel products to avoid the negative effect of seasonality on certain destinations. Chinese attraction management firms normally face risks related to the issues of carrying capacity, lack of sustainable development, and seasonal distribution of tourist flow. The portfolio effect brings potential benefits of maintaining stable firm performance. Local-branded hotel firms in China often diversify into unrelated businesses with excess cash flows. For example, Huatian hotel groups also operate the businesses regarding real estate and electronic products. In 2014, particularly, the real estate business generated nearly 40% of its total revenue and its increase rate was 39% comparing with that of in 2013. In 2015, although the growth rate was down to 17%, the gross margin reached 30% (Huatian Hotel Group, 2014, 2015).

The positive effect of product diversification on firm performance can be explained by resource-based theory. With an increase in product scope, an internal market can be built so that firms may successfully deal with the challenges posed by environments (Wan & Hoskisson, 2003). Furthermore, a significant increase in product diversification is an effective and suitable corporate strategy for dealing with market imperfections in institutionally weak environments (Nachum, 2004). These arguments may be fit for the Chinese context. Economic benefits can be obtained from the creation

of internal markets by increasing the scope of firms (Lee, Peng, & Lee, 2008; Wan & Hoskission, 2003). Firms can also acquire financial advantages by using internal markets for capital allocation and other resources (Berger & Ofek, 1995; Palich et al., 2000). Furthermore, the resource-based view provides an internal perspective that emphasizes the intention of firms to maximize the utilization of their common resources and capabilities by diversifying into related businesses (Wan et al., 2010). For example, China's attraction management firms can leverage their continual cash flows generated from natural reserves and scenic spots to expand their businesses into merchandise, accommodation, and transportation. The key revenue source of Emei Mountain attraction management firm was from the entry ticketing fee of its scenic spots, occupying 43% of total revenue in 2015. The fast growth rates in generating revenue for this firm can be seen from its hotel and cable car business segments, 16 % and 7%, accounting for 45% of total revenue together (Emei Mountian, 2018).

5.2.2 Nonlinear relationship

A nonlinear relationship between product diversification and firm performance was also identified in this study, which is consistent with prior studies conducted in other contexts (e.g., Palich et al., 2000; Ruigrok & Wagner, 2003, Tallman & Li, 1996). In the hospitality industry, this nonlinear relationship is also supported in the U.S. context (e.g., Kang et al., 2011; Lee et al., 2011; Park & Jang, 2012). In the Chinese context, Shen, Wang, and Su (2011) examined 200 random publicly-traded Chinese firms in 2007 and found that the relationship between product diversification and firm performance has an inverted U shape.

While studies on product diversification and performance were conducted in emerging and transitioning countries such as China, a new perspective viewing corporate strategy had been fostered as the institution-based view that emphasised the importance of institutional factors for the understanding of competitive advantage (Benito-Osorio, Ángel Guerras-Martín, & Ángel Zuñiga-Vicente, 2012; Hoskisson et al., 2000; Peng, & Delios, 2006). Basically, the institutional environment may influence the strategic decisions of firms. Garrido, Gomez, Maicas, and Orcos (2014) confirmed that institutional environment affects the behavior of firms on the basis of which firms consider how to select entry modes and make product diversification decisions. Garrido et al. (2014) also found that firms tend to conduct acquisitions and greenfield entries instead of joint ventures under the contexts of a low development of formal institutions.

The higher transaction costs may be generated for firms under an institutionally weaker environment than those under an institutionally stronger environment due to the market imperfections in terms of labor, external capital, and product markets (Wan & Hoskisson, 2003). From the perspective of transaction cost theory, the costs of product diversification tend to outweigh the benefits once the scope of product and operations increases (Markides, 1995; Williamson, 1981). In Chinese tourism firms, an increase in transaction cost occurs when a product or service is transferred from one stage to another. For example, this situation commonly occurs in Chinese tourism firms that provide travel, accommodation, and transportation services together. A tour package can be fully arranged internally by a firm's subsidiary business divisions that operate travel, accommodation, and transportation services. However, additional costs may be incurred when several external parties offer cheaper accommodation and transportation services

at the same standard (e.g., cheaper air tickets and the same level of standard of hotels offered by external firms) than internal arrangements. The tariffs on air tickets and hotels vary significantly based on different suppliers, which is a natural feature of the tourism industry in China.

From the perspective of resource-based theory, a firm tends to diversify into related businesses so that its core competencies, capabilities, and common assets can be shared among its business units until the maximum level is reached. The benefits of diversification are derived from the creation of synergy among business units and economies of scope in related areas. Palich et al. (2000) mentioned that after a firm reaches the maximum utilization of its common resources and core competencies in related areas, it tends to look for additional growth and diversify into unrelated business areas. As business size increases, the farther the business endeavor is from a firm's core business, the more challenging it is to control and manage. The results of this study suggested that after a certain level of diversification, the positive effect turns to be negative. Overinvesting in unrelated businesses, lack of relevant expertise and specific knowledge, and having a business scope that may be beyond management and control capabilities are the reasons for the negative effect of diversification (Park & Jang, 2012). For example, the Tibet Tourism Co., Ltd may be a case of overinvesting in unrelated businesses but based on their four consecutive annual reports from 2014 to 2017, it may be a case that the firm lacks relevant expertise and specific knowledge in their diversified unrelated businesses (i.e. media and advertising). The Tibet Tourism Co., Ltd's media and advertising segments lost both in revenue and its profit since 2015 and there was only 2% growth in generating revenue in 2014 comparing 2013. One of the major reasons

highlighted in their annual reports was that since the demand of traditional media has been decreasing, such as magazine and newspapers, the lack of development of emerging and digital media was concluded as the direction of its future improvement.

An inverted U-shape relationship between product diversification and firm performance was identified in the current study, which is in line with the results of Shen et al. (2011). China is still at the stage of transition. Available resources from the external environment are limited in the transition economy. When a firm increases its product diversification at a high level, the possible failure of gaining resources for product diversification exists. Delios, Xu, and Beamish (2008) emphasized that resource scarcity is the key constraint in implementing product diversification successfully; thus, competition for resources leads to high additional costs of control and coordination among different products.

5.3 Effect of geographic diversification on PD-P

A positive moderating effect of geographic diversification was identified in this study by comparing the results of two subgroups: a group of firms with geographic diversification and another group without geographic diversification. The positive effect of product diversification on firm performance was supported in the group of firms with geographic diversification and was not supported in the group of firms without geographic diversification. These results are consistent with many prior studies (e.g., Barney, 1991; Buckley & Strange, 2011; Kang & Lee, 2014) indicating that the benefits of geographic diversification may originate from market power, economies of scales, learning effects, and risk reduction that firms have gained across different geographic locations.

From the perspective of market power, when Chinese tourism firms operate their businesses in different geographic markets, they gain conglomerate power and establish a dominant position to mitigate competition and increase their bargaining power in diverse geographic markets (Montgomery, 1994). The diverse needs of customers can be satisfied by an increase in product diversity. Particularly, the Chinese tourism industry is characterized by a relatively high degree of product diversification to satisfy different market segments (Gu et al., 2012). Chinese hotel firms offer not only traditional accommodation services but also food and beverage services, meeting and event planning services, and retail businesses. Chinese tourism attraction firms provide a wider range of services or products than hotel firms, such as selling of scenic tickets, transportation and accommodation services, and entertainment activities within attractions. In addition, Chinese travel agencies provide many different travel products with different packages targeting distinct market segments. The combination of geographic and product diversification spreads the effect of the market power on firms. Various services and products can be obtained by different customers across different geographic markets. For example, Chinese hotel firms expand to diverse geographic locations so that their products and services can be reached by local customers. According to Jin Jiang Hotel Group (2016), the number of hotels of Jin Jiang Hotel Group has been over 7,500, located in over 31 provinces and 539 cities in China and its hotel properties across 66 countries. Based on Jin Jiang Hotel Group's corporate strategy, the development strategy of global layout and the increase of transnational businesses, Jin Jiang Hotel Group had two major hotel groups' acquisitions in 2016. It acquired 80% ownership of Viena Hotel Group and 80% ownership of Plateno Group. It becomes one of the famous hotel brands in China

and ranked the fifth in terms of a number of hotel rooms in the world in 2016, according to the magazine HOTELS. The high degree of geographic diversification combined with product diversification helps Jin Jiang Hotel Group improve its dominant position in China's hotel industry because of the effect of market power.

From the perspective of modern portfolio theory, the supportive positive effect of product diversification in a group of firms with geographic diversification can be well explained. Considering that the nature of tourism firms is characterized by the high influence of seasonality and the sensitivity to environment changes and local relevant regulations, a group of firms with geographic diversification can gain better return based on a diversified business portfolio and a diverse geographic location (Barney & Hesterly, 2008; Kang & Lee, 2014). Most prior studies (e.g., Baek, 2004; Borda, Geleilate, Newburry, & Kundu, 2017) focused on international diversification, which is a type of geographic diversification across country borders. However, the present study focused on Chinese domestic market, in which firms implement geographic diversification across different provinces in China. Several uncertain contingency factors, such as exchange rate movements, changes in government policies, and taxation, generally affect geographic diversification when businesses are operated across country borders. In this study, the general institutional environment tends to be less influential on Chinese tourism firms in operating businesses domestically than firms that have geographic diversification across country borders. Tourism firms can mitigate the effect of seasonality by increasing product and service diversity and expanding their business to different domestic geographic locations. For example, the BTG Hotels Group Co., Ltd. operates hotel businesses and tourist attractions. The tourist attractions that BTG Hotels Group Co., Ltd

operated are located in Hainan province of China, the high seasons of tourist visiting Hainan province are the golden weeks and spring festival break. In 2015, the BTG Hotels Group Co., Ltd acquired 67% ownership of Home Inns Group that has over 3,500 hotels over 20 provinces of China. The influences of varied tourist demand and seasonality on tourist attraction can be diversified by hotel businesses that have expanded in over 20 provinces in China.

5.4 Effect of level of relatedness on PD-P

The effect of relatedness on firm performance was investigated in this study by dividing the sample into two subgroups: one group of firms that are related diversification oriented and another group of firms that are unrelated diversification oriented. As revealed by the results, the positive effect of product diversification was supported in the group of firms that are unrelated diversification oriented. The positive effect of product diversification on the firms' Tobin's Q was supported while firm decreased relatedness in the product. These results contradict the results from prior studies (e.g., Palich et al., 2000; Penrose, 1959; Rumelt, 1982; Wrigley, 1970), which posited that relatedness among businesses within a firm is a key factor in implementing successful product diversification.

From the perspective of internal capital efficiency, unrelated diversification can facilitate a firm to allocate its capital resources efficiently because of the heterogeneity of its investment options (Scherer, 1980). Meyer et al. (1992) argued that unrelated diversification allows a firm to access inexpensive external funds and inject capital into its business portfolio. Many previous empirical studies reported that unrelated diversification enhances firm performance (e.g., Liu, 2010; La Rocca & Staglianò, 2012;

Scharfstein & Stein, 2000). Unrelated diversification generally requires firms to acquire external resources to build a competitive advantage for unrelated businesses. In China, firms acquire another firm that operates unrelated businesses as a form of unrelated diversification or invests heavily in the unrelated businesses with an important reason that they possess available financial resources. For example, in 2015, Songcheng Performance Development Co., Ltd, as one of the most successful tourism firms in terms of the growth of revenue and the growth of net income (increased by 81.2% and 76.9% comparing 2014), spent 2.6 billion RMB to acquire *6.CN Live Platform* which conducts online live video chats. To develop unrelated businesses, although uncertain business risks are normally higher than those in investing in related businesses, the efficient utilization of internal capital in diverse investment opportunities regarding unrelated businesses benefits the overall performance of a firm (Meyer et al., 1992). This echoed the finding of this study that product diversification benefited firm performance among firms that were unrelated diversification orientated.

From another angle of resource-based theory, the positive effect of product diversification on firm performance was not supported among firms that are related diversification oriented can be attributed to the potential issue of internal competition for acquiring internal resources among business units (Kumar, 2013). Porter (1989) emphasized that competition that appears at the business units' level in diversified firms leads to a failure of corporate strategy. Therefore, an increase of sharing activities within all divisions and business units leads to an increase of internal competition for acquiring common/ scarce resources among all business units, and an increase of exercise power may influence the sharing activities within the firms. Some divisions or business units

may acquire internal resources by sacrificing the benefits of other divisions or business units (Kumar, 2013). The resource-based theory advocates a synergy effect of sharing common resources across firms' business units, which also can lead to an increase of internal competition in acquiring resources among the business units. Such a dilemma deserves further attentions from both the academia and the industry, because the increase of internal competition may be a potential and unique characteristic for firms that particularly engage in related businesses. In general, the resource-based view focuses on internal resource optimization for achieving competitive advantages in different related businesses. However, efficient allocation of strategic resources among all business units within a firm has been a challenge that is not easy to address

Jiang et al (2005) stated that firms with low profitability tend to expand by entering new business, and diversification acts as a way of shifting business from less profitable and negative growth industries to the growing and promising industries. China, as a rapid growth and emerging economy, contains new industries and expansion opportunities. As the tremendous market potential of the new and growing businesses appear, the risks of entering that business, even not related to the core business of firms, are relatively low. Firms may also tap the advantage of being the first mover in those new and growing industries.

The results also showed that the positive effect of product diversification on Tobin's Q, which is a market-based performance measure, was supported by firms engaged in unrelated diversification. Hotel and travel service-related firms in China had a higher degree of unrelated diversification than tourist attraction firms. This result echoes those of Wei (2008), who found that firms in competitive and unprofitable industries have

a propensity to diversify into unrelated industries for pursuing additional growth. Furthermore, firms with unprofitable or competitive focal industries are likely to operate related unprofitable businesses under a competitive business environment because the degree of specificity of their internal resources is low (Montgomery, 1994). Therefore, acquiring specific resources to diversify into profitable businesses or industries is the key to the success of diversification. Unrelated diversification is a means to acquire diverse investment opportunities, and several profitable industries can be selected. For example, several Chinese tourism firms have diversified into the real estate industry, which has been a growing industry with promising returns since 2003. Other Chinese tourism firms have diversified into the retail business of selling duty-free products in airports, which is also a niche market and profitable business. China International Travel Service Co., Ltd as a successful example of merchandising duty-free products and operating duty-free products shopping centers generates additional revenues from its unrelated businesses. Based on the annual reports of the China International Travel Service Co., Ltd from 2013 to 2016, the average gross margin of duty-free product sales was over 40% and the average annual growth rate of sales in this specific business segment was 17 % (China International Travel Service Co., Ltd, 2017). The stock price of China International Travel Service Co., Ltd from Jan of 2013 was nearly 2.5 times up to May of 2018, from 26.90 RMB to 63.50 RMB per share (Sina Finance, 2018). Such successful unrelated businesses are operated by Chinese tourism firms. Hence, their share price is positively affected, which can be considered as an appropriate explanation for the positive effect of product diversification on market-based performance in the group of unrelated diversification-oriented firms.

5.5 Effect of human capital on PD-P

In this study, human capital did not exert a moderating effect on the relationship between product diversification and firm performance. However, human capital exerted a direct positive effect on the firms' ROA, which is consistent with prior studies (e.g., Chandler & Lyon, 2009; Manev, Gyoshev, & Manolova, 2005). Hitt et al. (2001) identified the positive moderating effect of human capital on the relationships between service diversification and firm performance and between geographic diversification and firm performance in professional service firms such as law, accounting, and auditing firms. However, in China's tourism industry, the moderating effect of human capital on the relationship between product diversification and firm performance was not supported on the basis of the results.

The nature of the industry needs to be regarded as one of the influential factors when investigating the moderating effect of human capital. From the resource-based view, human capital refers to knowledge, skills, and experience that can be leveraged by firms to build firm-specific resources for creating values. The tourism industry is a labor-intense industry, in which the personal interaction of employees may be the most important aspect of the service encounter in operations (Crick & Spencer, 2011). However, from the perspective of workforce characteristics in China tourism industry, employment in relevant industries, such as hotels and travel agencies, cannot be recognized as high status jobs. Acquiring a high level of education has traditionally been poorly encouraged by tourism employers (Cooper & Shepherd, 1997), because the nature of relevant jobs is not technical. In fact, in this study, most employees from half of the sampled firms were merely high school graduates, and most of the other half of

employees were junior college graduates. The low level of education in the tourism industry is caused by the fact that most tourism and hospitality management educational institutions are at the junior college level in China.

The nature of products and services in the tourism industry is different from that of other industries, such as IT, law, and accounting. The tourism product is defined as a bundle of activities, services, and benefits that build up the entire tourism experience (Smith, 1994). In service-oriented industries (e.g., tourism and hotel industries), selling experience is one of the key attributes of their products or services. Therefore, in the stage of developing products and services in the tourism industry, an employee may not be able to develop a product for firms because he or she is a part of creating the overall experience for customers. Understanding the nature of products and services in the tourism industry may explain why the effect of human capital on the relationship between product diversification and firm performance does not exist in Chinese tourism firms.

5.6 Effect of the level of organization flatness on PD-P

The results indicated that organizational structure flatness influenced the relationship between product diversification and firm performance on the basis of two subgroups of firms: one group of firms with a flat structure and another group of firms with a taller structure than the former. The positive effect of product diversification on firm performance (Tobin's Q) became negative in the group of firms with a taller structure. This result is consistent with those of prior studies (e.g., Zhang et al., 2014; Zhu & Jiao 2013), which suggested that a flat structure reduces hierarchical loads and improves decision-making efficiency.

From the perspective of the efficiency of decision-making and implementation of a corporate strategy, passing accurate information, coordination among different levels of management teams, and responsiveness to market environment changes are the key facets in ensuring success. The results indicated that the negative effect of product diversification on firm performance in firms with a tall organizational structure might explain the potential issues in the abovementioned aspects. Given that an increase in product diversity means an increase in the scale of firms' operated businesses, which may increase the managerial and monitoring costs from principals to agents, decentralization may be easily facilitated by a flat organizational structure (Stein, 2002). For example, several Chinese public-traded tourism firms have many subsidiaries that have their own subsidiaries in different cities and provinces. A flat organizational structure helps firms facilitate power decentralization, which means rendering a degree of freedom for subsidiaries to run their local business. By contrast, a tall organizational structure may entail a complex communication process with the style of power centralization. The positive effect of product diversification on firm performance may not exist in firms with a tall organization structure because the efficiency of running local business may be encumbered by the asymmetry of passed information, delayed responses to local business environment changes, and inefficient coordination in resource sharing among business units for developing and promoting new products.

From the perspective of resource-based theory, a flat organizational structure reduces barriers associated with the cross-functional communication to share internal resources and create synergy among business units. By contrast, a tall organizational structure increases communication and coordination costs among business units within a

firm (Child, 2015; Galbraith, 1977). The negative effect of product diversification with a tall organizational structure may be explained by the increase in communication and coordination costs, which reduces the benefits of product diversification with regard to firm performance. The upside of the resource-based theory is the creation of synergy among business units, such that product diversification occurs in the form of creating synergy in firms as the internal resources may be fully and efficiently used and shared in increasingly diverse products. However, a tall organization structure increases the barrier of sharing resources within firms because the decision-making process may be more complex than that in a flat organizational structure.

From the perspective of the efficiency of allocation of internal capital, the results of the study can be explained as follows: the negative effect of product diversification may be caused by inefficient internal capital allocation. While a flat structure encourages internal activities and interactions among business units, a tall organizational structure is limited in the flexibility of shared activities as power distribution may be hierarchical rather than equal (Rishipal, 2014). Morck, Wolfenzon, and Yeung (2005) found that pyramidal structures significantly affect capital allocation, financial development, and investments of R&D in emerging markets. Holod (2012) echoed that firms with a tiered organization structure are less efficient in allocating internal capital than firms with a non-tiered organization structure. Efficient allocation of internal capital is important in maintaining business growth for firms and developing new products. From the perspective of agency theory, Holod (2012) also highlighted that agency problems are the root of the inefficiency of allocating internal capital. Therefore, the amount of available cash may not be used efficiently in potential and promising projects in firms with tiered

organization structure because the potential agency problems may delay promising investment opportunities based on agents own interests.

5.7 Effect of market structure on PD-P

The market concentration ratio was used as the measure of industry structure in this study. The results showed that market concentration positively moderated the relationship between product diversification and firm performance. The market concentration ratio changed the relationship between product diversification and firm performance (See Figure 4.3). The positive effect of product diversification became negative when the market concentration was low. Market concentration positively moderated the relationship between product diversification on firm performance (ROA and Tobin's Q). More specifically, the positive effect of product diversification on firm performance was found in the context of high market concentration. By contrast, the negative effect of product diversification on firm performance was found in the context of low market concentration. No similar study has been conducted to investigate the moderating effect of market concentration on the relationship between diversification and firm performance. However, the relationship between market concentration and profitability has been investigated by prior studies (e.g., Christensen & Montgomery, 1981; Feeny & Rogers, 1999; Porter, 1981), which supported the positive relationship between the two. In this study, a consistent outcome was obtained; market concentration was positively related to firm performance in the tourism industry, which was also consistent with the result of Pan (2005) who found a positive relationship between concentration in room and food and beverage businesses and profitability in Taiwan hotel industry.

From the perspective of SCP paradigm to explain the result regarding the relationship between market concentration and profitability, Porter (1981) emphasized that the highly concentrated market encourages and facilitates collusive behaviors among incumbents so that the firms under the context of high market concentration enables to make positive earnings as the profitability preserved by the incumbents. Lipczynski et al., (2013) echoed that the market is likely to be a monopoly because of the high market concentration, and the products in a highly concentrated market tend to be completely differentiated thus making a profit. In China, the nature of tourism products that Chinese tourism firms offer is unique and differentiated. For example, different tourist attraction operation firms in China have their own distinctive tourism resources, such as unique natural sceneries, themes, and cultural and entertainment activities within attractions. Their wide range of unique products offered can satisfy tourists who always look for novelty and amusement during trips.

In this study, market concentration only reflected the market structure in operating tourism-related businesses. In the context of low market concentration, firms face a greater competition from their competitors than firms in the context of high market concentration (Lipczynski et al., 2013). A possible explanation for the negative relationship between product diversification and firm performance in the context of low market concentration is that firms operate unprofitable products tend to diversify or launch new products to generate additional revenue (Montgomery, 1994). However, since the degree of specificity of their internal resources to create differentiated products is low, it is hard to make profits with limited competitive advantage of products (Montgomery, 1994).

From the perspective of the increasing of internal transaction cost, firms in the context of the low-concentration market environment may confront competition from all products they tend to offer, thus the internal transaction cost and the costs of developing new products may outweigh the benefits (Kang & Lee, 2014). Unlike those in a low-concentration market, firms in a high-concentration market environment may find a potential demand for developing new products that are likely differentiated with a competitive advantage because of limited competition under the context of high market concentration. The study echoed that that under the high market concentration, the positive relationship between product diversification firm performances was supported (Figure 4.3). By contrast, under the low market concentration, the negative relationship between product diversification and firm performance was observed.

5.8 Contribution of the study

Through a comprehensive review of the prior literature and the empirical findings of the study, both the theoretical and the practical implications were provided. Although the literature on the effects of diversification on firm performance has provided extensive evidence in regard to the implementation of diversification strategies, management involvement, motives of being diversified, and so on, less effort has been exerted to investigate the relationship between product diversification and firm performance in a developing economy and to determine the factors that influence the relationship between diversification and performance. This study extends current literature on diversification in a developing economy and delves into the influential factors from the internal (organizational factors) and external (market factor) sides. The findings also offer valuable managerial implications for management teams in Chinese tourism firms.

5.8.1 Theoretical contribution

For its foremost contribution to the academia, this study enhances our understanding of the effect of product diversification on firm performance and the moderating effects of geographic diversification, level of relatedness, human capital, level of flatness in organizational structure, and market structure on the relationship between these two constructs.

First, this study empirically validated the positive effect of product diversification on firm performance in Chinese tourism firms. This effect on Chinese tourism firms was also observed by many other relevant studies (e.g., Duan & Zhou, 2012; Huang & Huang, 2011; Fan, 2009; Liu & Wang, 2007; Wang & Xu, 2009). However, this study is among the first to identify the nonlinear (inverted U-shape) relationship between product diversification on firm performance in the context of Chinese tourism firms. Several Chinese scholars also identified a negative effect of product diversification on firm performance (e.g., Chen, 2013). Therefore, the nonlinear relationship found between these two constructs is meaningful because the optimal point of product diversification was captured in the study under the Chinese tourism context.

Second, this study contributes to the literature on diversification in a tourism context. Although many studies have investigated geographic and product diversification in industrial multinational enterprises (e.g., Mrork & Yeung, 2003; Tallman & Li, 1996), empirical studies in the tourism industry are limited. Moreover, given that the moderating effect of geographic diversification on the relationship between product diversification and firm performance in the context of tourism has been rarely explored, this study enriches the existing literature on by shedding light on geographic diversification as a

moderating factor. This study also focused on geographic diversification domestically, that is, crossing different provinces within China. This study differs from other studies that focused on geographic diversification across country borders, which is known as international diversification or geographic diversification of multinational enterprises. Without the intervention of different institutional factors of geographic diversification crossing country borders, the effect of domestic geographic diversification is also meaningful because the Chinese economy is large and known as the world's second-largest economy. This study fills the gap in the literature on geographic diversification in China.

Third, the study applied the SCP paradigm that originally represents the nexus of the industry structure affecting firm behavior, which in turn influences firm performance. The finding regarding the positive moderating effect of market structure (measured by market concentration) on the relationship between product diversification and firm performance can be leveraged to propose a new nexus in which market structure, as a moderator, may serve as a novel nexus in the SCP paradigm. Furthermore, the study also applied resource-based theory to examine the moderating effect of organizational factors and the resource dependency theory that posits that the market factor may affect the outcome of firms' strategy. The integration of these two theories in investigating the effect of diversification on the tourism industry sheds new light on the application of theories in the Chinese context.

Finally, the involvement of the element of human capital, flatness of organizational structure, and market concentration in investigating the relationship between diversification and firm performance provide new insights. Although many

studies have been conducted to determine the direct effects of these factors on firm performance (e.g., Bontis & Serenko, 2007; Pan, 2005; Tsai, 2002), their roles as moderators on the relationship between strategy and performance have rarely been studied. The involvement of these influential factors on the relationship between product diversification (PD) and performance (P) may contribute to the literature to provide possible explanations of non-consensus results of the PD-P relationship. The reasons why the relationship between diversification and performance is inconsistent warrant further attention. This study sheds new light on the factors that affect the PD-P relationship.

5.8.2 Practical implications

Regarding practical implications, this study helps hotel owners and management teams of Chinese tourism firms achieve an improved understanding of the effect of product diversification on firm performance in general. Product diversification benefits firms with regard to financial performance. Increasing product diversity is still a good strategy for pursuing additional business growth. However, the finding of the significant inverted U-shape relationship between product diversification and Tobin's Q suggested that the costs of product diversification may outweigh the benefits with regard to firm value when the degree of product diversification is beyond the optimal level. The management needs to monitor the degree of product diversification. The given practical example of entropy diversification index is shown in Table 5.1.

Table 5.1 The practical examples of entropy index of diversification.

Percentage of a firm 's sales in 2-digit industry					Index of diversification
I		II			
4-digit industry		4-digit industry			Entropy
I-1	I-2	II-1	II-2	II-3	

95	5	-	-	-	0.2
90	10	-	-	-	0.32
80	10	10	-	-	0.64
70	20	10	-		0.8
60	40	-	-	-	0.67
60	10	10	10	10	1.23
50	20	20	10	-	1.22
40	20	20	10	10	1.47
30	20	20	20	20	1.56
20	20	20	20	20	1.61

Adopted from Jacquemin and Berry (1979)

This study has identified the range of degree of diversification for optimizing both accounting-based performance measure (ROA) and market-based performance measure (Tobin's Q), from 1.24 to 1.54. Table 5.1 presents an example of how the entropy diversification index is calculated with specific percentages of a firm's sales in different business segments. For instance, Table 5.1 assumes a firm with five business segments from two 4-digit industries. The distributions of the firm's core business and its related and non-core businesses are demonstrated. While the sales percentage of the core business reaches about 60% of the total sales and the entropy index is calculated as 1.23, the firm's ROA is very close to 1.24 and nearly optimal. While the sales percentage of the core business decreases to 30% and the entropy index is calculated as 1.56, the firm's Tobin's Q is very close to 1.54 and nearly optimal. In short, the more diverse business segment firms operate, the more they can boost their Tobin's Q, and the less diverse business segments, which comprise up to 60% of the total revenue, can optimize the firm's ROA. Furthermore, Chinese publicly-traded tourism firms can also learn that they may need to invest in or diversify other businesses to further maximize ROA and Tobin's Q, if their core businesses occupy over 60% of the total sales revenue. At the same time,

the core businesses being less than 30 % of the total sales revenue may be considered as a case of over-investing and excessive diversification.

Furthermore, level of relatedness is one of the influential factors on the PD-P relationship. Traditionally, implementing product diversification in related businesses is superior to diversifying into unrelated businesses. The empirical results of this study suggested that product diversification positively influences firm market-based performance in a group of firms that are unrelated diversification oriented, which implies that unrelated diversification-oriented tourism firms exert a better effect on product diversification than related diversification-oriented tourism firms with regard to market-based performance. Firms that are unrelated diversification oriented can consider implementing product diversification strategy because the efficiency of internal capital allocation in unrelated diversification-oriented firms may be better than that in firms that are related diversification oriented. For decision makers in selecting investment options, maximizing the efficiency of internal capital allocation is one of the key factors for diversifying into unrelated areas. The positive effect of product diversification was not supported in the firms that are related diversification oriented, which implies that the relatedness of businesses may not be able to build competitive advantages for Chinese tourism firms in related businesses because they can be as competitive as local businesses due to the relatively low barriers to entry of the industry. However, the results of T-test between two subgroups of related diversification oriented and unrelated diversification-oriented firms presented that related diversification-oriented firms still provided better firm performance than unrelated diversification-oriented firms, which implied that related diversification is still a superior means to boost firm performance. Lastly, it is also

important for firms' decision makers that product diversification has a positive effect while firms focus on unrelated businesses. To increase the diversity of products in unrelated businesses can improve firm performance.

The significant and positive effect of product diversification on firms' market-based performance in a group of firms with domestic geographic diversification implies that diverse geographic locations or local markets benefit firms with regard to market-based performance. For the management of Chinese tourism firms, operating businesses in different provinces in China can improve the firms' market-based performance, and stock prices may be positively influenced as well. Furthermore, human capital (measured by average years of education) exerted no significant moderating effect on the PD-P relationship, which implies that the education level of employees has no effect on the consequence of product diversification. However, a direct effect of year of education on firm performance was found with regard to ROA, which implies that years of education may have a direct effect on firm performance but not a moderating effect on the relationship between strategy and performance. Many studies have confirmed that human resources exert a direct positive effect on firm performance because of accumulated knowledge, skills, and experience. Managers in tourism firms need to be aware of the learning ability of employees, which may be the most important aspect of human resource management.

With regard to the empirical result of the moderating effect of flatness of organizational structure, a significant and positive effect of product diversification was found in the group of tourism firms with flat structures rather than tall structures, which implies that a flat structure is beneficial to implementing product diversification because

of the ease of the creation of synergy, coordination, communication, and information dissemination among all business units. For founders of new firms, this research provides good reference information for setting up their organizational structure. Even firms that already have tall organizational structures need to be aware of and control the costs of synergy creation, coordination, communication, and information dissemination among the firms' business units. Ensuring the efficiency of the decision-making process is also an essential aspect that management should be aware of.

The implications built upon the identified moderating effect of market concentration in this study are three-fold. First, the negative effect of market concentration on firm performance implies that an increase in big industry players may decrease firm profitability due to the low entry barriers to the industry. Policy makers may consider restricting several firm behaviors that increase market concentration, such as acquisition and merger. Second, market concentration changes the positive effect of product diversification into negative effects, thus reminding managers that market concentration plays an intervening role in product diversification and firm performance. Third, product diversification dramatically worsens the performance of firms in a low-concentration market environment. On the contrary, the effect of product diversification on the performance of firms in a highly concentrated market environment tends to remain constant. Given that market concentration was solely based on the tourism industry in this study, managers can consider diversifying into unrelated industries with high entry barriers to help preserve high profitability once they penetrate the industries. Finally, the positive moderating effect of market concentration on the relationship between product diversification and firm performance implies that all the activities that increase market

concentration can bring positive effect on the relationship between product diversification and firm performance. In other words, M&As can somehow strengthen the positive effect of firms' product diversification on their overall performance. Additionally, professional investors can also consider that tourism firms having ability to diversify into another more profitable industry and capability of breaking entry barrier of the industry are worthy to invest in the future as well.

This study also provides knowledge to professional investors in terms of evaluating a corporation's diversification. First, the different performance measures were applied in this study, implying that professional investors' market-based performance measure (Tobin's Q) are significantly influenced by the geographic diversification. Second, while professional investors build their investment portfolios, in China, the unrelated oriented firms may be superior to related oriented firms in the tourism context, thus offering the former an additional reference to make investment decisions. Finally, the optimal point of product diversification toward Tobin's Q is higher than that for ROA. From this, professional investors can learn that the higher product diversification can boost market-based performance more than accounting-based performance. Furthermore, from evaluating firm overall performance, this study provides additional perspectives on how corporate strategy affects firm performance. Product diversification and geographic diversification can serve as additional indicators for professional investors to measure and build their investment portfolios as risks derived from different businesses and geographic locations can be hedged. In general, professional investors can consider that the tourism firms (such as Song Cheng Performance Co. Ltd) stepping into a growing and profitable industry are worthy to invest in the future.

5.9 Summary of the chapter

This chapter presents the interpretations of the results of this study and a discussion of how this study relates to prior research. First, research objectives were reviewed, and a brief explanation of the theories applied in the study was provided. Second, how the study addressed the research objectives were elaborated, and discussions of linear and nonlinear relationships between product diversification were presented, followed by a discussion of the effect of geographic diversification on the PD-P relationship. The influences of the level of relatedness and human capital on the PD-P relationship were also discussed in line with previous research. Furthermore, the effect of the level of flatness of organizational structure and the effect of market structure (measured by market concentration) on the PD-P relationship were discussed in the last part of this chapter. Finally, the contributions of the study were explicated from theoretical and practical perspectives.

The next chapter concludes this study and provides key summaries of the hypotheses with matched findings, contributions of this study, limitations of the study, and room for future research.

CHAPTER 6. CONCLUSIONS

6.1 Chapter introduction

This chapter concludes the study by starting with an overview that consists of summaries of all previous chapters and the current chapter, followed by a recap of the proposed hypotheses and major findings linked with the research objectives. Furthermore, this chapter briefly revisits the contributions and presents the limitations and avenues of future study.

6.2 Overview of the study

This study aims to have a better understanding of the relationship between product diversification and firm performance, by investigating the moderating effects of geographic diversification, level of relatedness, human capital, level of flatness in the organizational structure, and market structure on the relationship between product diversification and the performance of Chinese tourism firms.

Chapter One introduces the background of the Chinese tourism industry and relevant research on this topic. It states the research questions and the reasons why this research is necessary and important. Specifically, considering that product and geographic diversification are two common strategies that are being implemented by Chinese tourism firms, the limited knowledge with respect to them served as the primary motivation for conducting this study. Furthermore, the inconsistent outcomes of the relationship between diversification and performance have been obtained over the past decades in different contexts (e.g., Ayal & Zif, 1979; Christensen & Montgomery, 1981;

Kim & Gu, 2003; Olusoga, 1993; Park & Jang, 2012; Remult, 1974; Tang & Jang, 2010), mainly in Western societies, which pushed forward the motivation to conduct a similar study in a developing economy and in the Chinese tourism industry, which is one of the key contributors to the national service economy. Although few studies have investigated the relationship between product diversification and firm performance based on Chinese tourism firms, the results remain inconsistent. These prior inconsistent results, which are related to the relationship between diversification and performance, also inspired us to examine the factors that may play moderating roles in the relationship between diversification and performance. Following the series of organizational factors that may determine the success of diversification as proposed by Datta et al. (1991), the level of relatedness, human capital, and level of flatness of the organizational structure were all included in this study.

The effects of geographic diversification and market structure have been rarely considered in studies that investigated product diversification and tourism firms' performance in the Chinese context. The effect of geographic diversification on the relationship between product diversification and firm performance was considered in this study, because Kang (2011) proposed that without considering the effect of geographic diversification, the results associated with the relationship between product diversification and performance may be biased. Furthermore, Prescott (1988) pointed out that environment, as measured by market structure, may moderate the relationship between strategy and firm performance. The lack of relevant empirical study is the reason why the effect market structure is considered in this study.

The four research objectives, previously discussed in Chapter One, are revisited as follows: (1) to identify the relationship between product diversification and performance of publicly-traded Chinese tourism firms; (2) to identify the influence of geographic diversification on the relationship between product diversification and performance of publicly-traded Chinese tourism firms; (3) to identify the influences of several organizational factors on the relationship between product diversification strategy and performance of publicly-traded Chinese tourism firms; and (4) to identify the influence of market structure on the relationship between product diversification strategy and performance of publicly-traded Chinese tourism firms.

Chapter Two provides a comprehensive review of the prior literature and determines the definition of diversification, motivations for being diversified, measurements of diversification in prior research, and the relevant diversification studies conducted in the tourism industry. This Chapter also proposed hypotheses and relevant theories that underpinned the formation of this study. Different scholars have defined diversification in various ways. Diversification is generally defined as how a corporation grows its business by entering new markets with new products (e.g., Ansoff, 1957; Pils, 2009; Rumelt, 1974; Wrigley, 1970). Diversification is also commonly defined as being associated with the degree of relatedness within all product segments; it can be classified as related or unrelated depending on resources, including the specificity of a firm toward a particular industry (e.g., Chatterjee & Wernerfelt, 1991; Jacquemin & Berry, 1979). With regards motivations for being diversified for firms, these are presented from the perspectives of market power, resource-based theory, and the principle of modern portfolio theory. A diversified firm may gain more competitive advantages than a non-

diversified firm because of the effect of market power and may create better synergy by sharing strategic resources among its business units than a non-diversified firm from the resource-based view. A well-diversified investment portfolio leads to the elimination of unsystematic risks from the perspective of modern portfolio theory.

The three common measures of diversification, which are the number of business segments based on SIC, the Herfindahl–Hirschman Index (HHI), and the entropy index, are also discussed in Chapter Two. In the literature, no consensus has been reached as to which single measure is the best. However, the measure of the entropy index is more sophisticated in measuring the relatedness among diversified businesses. Many prior studies applied these three approaches, but the relationship between diversification and performance has yet to reach an agreement. Three types of relationship have been found in prior research: positive, negative, and nonlinear. Furthermore, the effect of diversification is explained in combination with the applied theories, namely, modern portfolio theory, resource-based theory, resource dependency theory, and the SCP paradigm. Through the combined literature review, the proposed hypotheses are developed to examine the relationship between product diversification and firm performance as well as the effects of geographic diversification, level of relatedness, human capital, level of flatness in the organizational structure, and market structure on the relationship between product diversification and firm performance.

The core of Chapter Three is devoted to the estimation methods involved in this study, the collected data, and the data collection and analysis. The data were collected from two sources, namely, the financial sections of Sina and Sohu websites, which contained annual financial reports of all publicly-traded Chinese firms. Twenty-six

publicly-traded tourism firms were selected, and their data from 2008 to 2015 were collected for this study. Version 14.0 of Stata, a statistical analysis software, was used to analyze the collected data based on panel models, which included fixed-effects, random effects, and pooled OLS models.

The tests for violations of estimation assumptions for panel data were conducted as the first step to analyze the data. The estimation assumptions focused on testing the existence of unit root, heteroscedasticity, and serial-correlation. A "robust" regression method was then proposed to solve the issue of heteroscedasticity. Furthermore, the Hausman test was applied to select an appropriate model among the three estimation models. The F-test and Breusch–Pagan LM test were conducted to validate the fixed and random effects models. Finally, the Durbin–Wu–Hausman test was used to examine the issue of endogeneity, and 2SLS was carried out to solve the potential issue of endogeneity.

Chapter Four presents the findings in line with the research objectives. For the first objective, the positive and inverted U-shaped relationships between product diversification and firm performance are supported. Regarding the second objective, the positive effect of product diversification on firm performance is supported in the group of firms with geographic diversification. This finding is significantly different from the effect in the other group of firms without geographic diversification. The third research objective is achieved, and the positive effect of the product on firm performance is supported in the group of firms that are unrelated diversification-oriented. This finding is significantly different from the effect in another group of firms that are related diversification-oriented. Furthermore, human capital exerted no significant effect on the relationship between product diversification and firm performance. With regards the level

of flatness in the organizational structure, the negative effect of product diversification on firm performance is found in a group of firms with a tall organizational structure. This finding is significantly different from the effect in another group of firms with a flat organizational structure. For the fourth objective, the effect of market structure significantly and positively moderates the relationship between product diversification and firm performance. More specifically, under the high market concentration, the positive relationship between product diversification firm performances is supported, and under the low market concentration, the negative relationship between product diversification and firm performance is observed.

On the basis of Chapter Four, Chapter Five discusses and interprets the findings in relation to those of prior related studies. Consistent results are achieved for the positive and inverted U-shaped relationships between product diversification and firm performance owing to the effects of creating synergy and internal transaction costs. A consensus on the positive moderating effect of geographic diversification is achieved with prior studies as the benefits of geographic diversification outweigh its costs. Diverse markets can be reached by diverse products in different geographic locations, thus creating synergy and market power for firms. However, the result about the effect of level of relatedness contradicted that of prior research because of the sufficient benefits of unrelated diversification to Chinese tourism firms. Furthermore, human capital did not affect the relationship between product diversification and firm performance from the perspective of received years of education, but it directly affected firm performance because learning abilities varied with different educational backgrounds. For the effect of level of flatness in the organizational structure, the positive effect of product

diversification changed to negative in the group of firms with a tall organizational structure due to several reasons, namely, inefficient information passing, decision making, and increase in costs of coordination and communication. Finally, market structure (measured by market concentration) changes the positive effect of product diversification on firm performance into a negative effect and positively moderates the relationship between the two. This finding is due to the nature of the tourism industry, which is characterized by relatively low entry barriers and the fact that tourism firms may easily encounter competitors in their diversified businesses.

Chapter Six begins with summaries of all chapters of the study and provides a conclusion at the end. Moreover, the major findings and achievement of the research objectives are presented. A brief recap of the contributions of this study is provided, and the study limitations and avenues for future study are presented in the last part of the chapter.

6.3 Summary of achievements of the research objectives

All research objectives are addressed based on the findings of the study. A summary of outcomes regarding the research objectives is delivered as follows. The first research objective is to investigate the relationship between product diversification and firm performance, and two relevant hypotheses were developed. Positive and inverted U-shaped relationships were hypothesized to exist between product diversification and firm performance based on resource-based and internal transaction cost theories. Fixed effects panel regression analysis with robust standard errors and 2SLS estimations were conducted.

Based on the findings, significant coefficients of product diversification in the fixed effects and 2SLS models are found together with a significant coefficient of quadric product diversification. The optimal level of product diversification with regards the firms' ROA was identified at 1.24 (entropy index). According to the measurement of diversification in the entropy index, the benefits of diversification with regard to ROA tend to exhibit a declining tendency once the diversification level exceeds 1.24. The optimal level of product diversification in relation to the firms' Tobin's Q is identified at 1.54, and the benefits of diversification related to Tobin's Q decline once the diversification level exceeds 1.24.

The second objective is to investigate the moderating effect of geographic diversification on the relationship between product diversification and firm performance. The study sets a dummy variable to reflect geographic diversification, which has a value of one for a firm when it makes sales and operates businesses in more than one province in China (zero otherwise). After dividing the selected firms into two subgroups, the positive effect of product diversification is significantly supported in the group of firms with geographic diversification. The test of the equality of the product diversification coefficients in the two groups showed that they significantly vary across the different estimation models, which means that geographic diversification moderates the relationship between product diversification and firm performance. Thus, the proposed hypothesis that geographic diversification exerts a positive moderating effect on the relationship between the two is supported.

The third objective is to examine the moderating effects of three organizational factors, which are the level of relatedness, human capital (measured by the average years

of employees' received education), and the level of flatness in an organizational structure, on the relationship between product diversification and firm performance. The study sets two subgroups to investigate the moderating effect of relatedness: a group of firms that are related diversification-oriented and another group of firms that are unrelated diversification-oriented. The positive effect of product diversification is supported in the group of firms that are unrelated diversification-oriented. This finding is significantly different from the effect in the group of firms that are related diversification-oriented. The proposed hypothesis regarding the positive moderating effect of level of relatedness on the relationship between product diversification and firm performance is contradictory to what the results indicated. The moderating effect of human capital is not supported in the study, but a direct effect of human capital on a firm's ROA is found, which is consistent with many prior studies. Regarding the moderating effect of the level of flatness in organizational structure, the study set two subgroups, namely, a group of firms that have grandson subsidiaries and another group of firms that only have son subsidiaries. The former has a more complex and taller organizational structure than the latter. The negative effect of product diversification is supported in the group of firms that have a taller and more complex organizational structure. This finding is significantly different from the effect in the group of firms that have a flat structure. Thus, the proposed moderating effect of level of flatness on the relationship between product diversification and firm performance is supported based on the findings.

The last research objective is to examine the moderating effect of market structure on the relationship between product diversification and firm performance. An interaction variable of market structure and product diversification is hereby formed. The moderating

effect of the market structure was tested by examining the impact of the interaction variable. A positive and significant coefficient of the interaction variable is found, and as such, the hypothesis on the positive moderating effect of market structure on the relationship between product diversification and firm performance is supported. Furthermore, a positive and significant coefficient of product diversification is also found in the model, thus verifying the positive effect of product diversification on firm performance. The positive moderating effect of market structure meant that the increase of market concentration (a measure of market structure) increases the positive effect of product diversification on firm performance.

6.4 Summary of study contributions

This study contributes to industrial fields and the academia. From the academic perspective, this study enriches the literature on diversification in the tourism industry in the Chinese context. The integration and applications of resource-based theory, modern portfolio theory, resource dependency theory, and SCP paradigm are also part of the academic contribution to the literature related to these theories. The significant moderating effect of market structure sheds new light on the new nexus in the SCP paradigm.

From the practical perspective, this study suggests that product diversification is still a promising strategy for Chinese tourism firms; however, going beyond the optimal level of product diversification may lead to a decline in benefits. Furthermore, the effect of product diversification in firms that are unrelated diversification-oriented may be superior to the effect in firms that are related diversification-oriented. Although the

hypothesis on the moderating effect of employees' received years of education is not supported, its direct effect indicates that practitioners should realize that learning ability varies with different educational backgrounds. Meanwhile, the effect of level of flatness in an organizational structure indicates that firm founders may set a flatter organizational structure, leading to easy information passing, efficient decision making, and coordination. Finally, policymakers may need to consider limiting the M&A rules in the tourism industry because a highly concentrated market environment does helps firm performance.

6.5 Limitations and suggestions for future studies

This study is not free of limitations. Generalizability is one of the limitations because the sample only contained publicly-traded firms in Chinese stock exchanges; thus, untraded firms are not represented. Future studies are advised to examine the topic in private firms, wherein the agency problem may be less influential, and the internal transaction cost may be less obvious, which may lead to different results. Furthermore, the study is only based on Chinese tourism firms; therefore, the findings may not contribute to research on firms in other countries. In this regard, future research can investigate the moderating effects of the different identified factors on the relationship between product diversification and firm performance in other countries or regions. The small sample size is another limitation of the study; hence, more firms can be added in the future. Given the limited sample size of the study, it separately investigated the moderating effect of factors rather than combining them into one model, which is another limitation. The measures of the simultaneous effects of the constructs on the relationship between diversification and firm performance may be considered in a future study.

Furthermore, new ways to measure these factors can be further explored in the future because the measurements of geographic diversification, level of relatedness, and level of flatness involved dummy variables. In addition, only three organizational factors were involved in this study. In the future, the characteristics of firm board compositions may be considered when investigating the relationship between product diversification and firm performance. These characteristics include the number of independent directors; industry experiences; diversity in age, education, and tenure; diversification strategy; and firm performance.

6.6 Concluding remarks

This chapter summarizes the entire study and includes brief recaps of all chapters, how the research objectives are achieved, and the contributions provided by this study. The study's limitations and recommendations for future research are also provided.

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