Advanced Materials Research *Online: 2012-01-03*
ISSN: 1662-8985, Vols. 433-440, pp 1967-1970
doi:10.4028/www.scientific.net/AMR.433-440.1967

The Empirical Research for the Expansion of Chain into the Third and Fourth Tier Cities in Guangdong Province

Chen Jun[1,a], Tang Deshan[2,b]
[1]Business School of Hohai University, Nanjing, China
[2]The College of Water Conservancy and Hydropower Engineering of Hohai University, Nanjing, China
[a]e-mail: chenjun9090@126.com,be-mail:tsd808@126.com

Keywords: Retail chain enterprises, Tier cities, Expansion of chain Factor analysis

ABSTRACT. The Retail Chain Enterprises implement the strategy of channel to sink to set up shops in third and fourth cities. A reasonable and scientific choice of order of priority must be made when the enterprises entering those cities. This article adopts the approach of the Factor Analysis and duster Analysis the analysis 72 cities (including county-level cities) according to purchasing power index, and to explore how Retail Chain Enterprises to make the market of third and fourth their cities in Guangdong province. The conclusion that is the order of decision ——making to enter into the third and fourth tier cities, which has important guiding significance.

1 Preface

The imbalance of regional economic development in China, that provide a tremendous market place for the Retail Chain Enterprises to develop and expand their scale. Through decades development, various kinds of Retail Chain Enterprises have completed the basic work of the cloth paint in major developed economic cities, they have never dabbled in. These third and fourth tier cities are supported and spurred by various policies such as “construction of new countryside” , “plan of regional economic development ” and “overwhelming home appliances in countryside ”, and so on. All of these could stimulate these cities’ economic development in a rapid speed in the future. Objectively, this provide is a correct guidance for the Chain enterprises’ expansion and extension.

There will be two questions when Retail Chain Enterprises conducting the task of cloth point, that is how to divide third and fourth tier cities correctly and how to decide the order of priority to enter into the third and fourth tier cities. The most important issue for Retail Chain Enterprises is giving priority to consider how to allocate the limited resources to the most efficient place when they face some similar third and fourth tier cities. This paper tries to research and analyze the priority order of the access to these cities when Retail Chain Enterprises begin to set up shops and expand their scale there.

2 Empirical Study on Site Selection of Retail Chain Enterprises

This paper chose 72 cities in Guangdong province as the study object, and adopt the approaches of PCA (Principal component Analysis) . Factor analysis and cluster analysis to classify and research these cites. Furthermore , these cities will be make a reasonable and scientific analysis on these selected cities in order.

2.1 The Choice of Data and Figures

First of all, classifying all economic variables as four categories, which constitute a target block. i.e. macroeconomic indicator, demographic indicator, income level indicator and the condition of housing and durable goods. According to the availability of the data and the representativeness of the index and indicator, this paper made a factor analysis on selected 17 economic indicators which could reflect the city’s comprehensive level of economic development. The concrete economic indicator is as follows.

Chart 1 The economic indicator

number	economic indicator	variable	code
1	macroeconomic indicator	GDP	GDP
2		the total retail sales of social consumer goods	SXFP
3		area	MJ
4	demographic indicator	urban population	CZRK
5		rural population	NCRK
6		total population by the end of the year	ZRK
7		total staff by the end of the year	ZGRS
8		savings deposits of urban and rural residents	CXCK
9		household devices and services	JTSB
10	income level indicator	per capita total income of urban households	CZSR
11		per capita total income of rural households	NKZP
12		per capita total income of urban and rural residents	CXKZP
13		urban per capita disposable income	CKZP
14		rural per capita disposable income	NKZP
15		urban and rural per capita disposable income	CXKZP
16	condition of housing and durable goods	salable area of commercial houses	SPFS
17		total social investment volume of fixed asset	GDZC

2.2 Empirical Research on Major Economic Variable Selection

Marking use of the SPSS 16.0 statistical software and calculate the contribution rate of each component, then calculate the loads of each variable on each component, then calculate the loads of each variable on each principal components. At last, we can obtain the load matrix of principal.

Chart 2 Contribution rate and the load matrix of principal components

	Initial Eigen values			Component		
	Total	% of Variance	Cumulative %	Z-score	FAC_1	FAC_2
1	10.087	59.336	59.336	CXCK	0.952	0.212
2	4.893	28.78	88.116	SXFP	0.929	0.331
3	0.857	5.044	93.16	GDP	0.918	0.355
4	0.367	2.16	95.32	ZGRS	0.887	0.439
5	0.315	1.853	97.173	CZRK	0.853	0.482
6	0.213	1.251	98.424	CXKZP	0.814	0.558
7	0.104	0.614	99.037	SPFS	0.81	0.437
8	0.072	0.424	99.462	GDZC	0.78	-0.619
9	0.043	0.251	99.713	CXZSR	0.795	-0.613
10	0.027	0.161	99.873	CKZP	0.788	-0.588
11	0.01	0.058	99.931	NKZP	0.779	-0.62
12	0.007	0.04	99.971	CZSR	0.775	-0.614
13	0.004	0.022	99.993	JTSB	0.727	-0.534
14	0.001	0.007	100	NZSR	0.722	-0.544
15	1.45E-10	8.51E-10	100	MJ	-0.441	0.059
16	5.03E-16	2.96E-15	100	NCRK	0.38	0.855
17	2.81E-18	1.65E-17	100	ZRK	0.624	0.851

The chart 2 shows us that the accumulated contribution rate of the first two factors has been up to 88.12 %, and the Eigen values are all greater than 1, here chose two factors.

There is a positive correlation between the principal component and savings deposits, total retail sales of social consumer goods, GDP, total staff by the end of the year, urban and rural per capital disposable income, urban population and so on. Among these, the principal component has a closer connection with savings deposits, which is up to 95.2 %.The second principal component has a closer positive association with rural per capita disposable income and total population.

According to the principle that choose the correlation which is greater than 85% with the principal component as the major economic indicator, and some major economic variable should be selected: GDP, residents' savings deposits, total retail sales of social consumer goods, the number of workers (reflect employment status), urban and rural per capital disposable income and total population.

2.3 Empirical Research on Specific Site Selection

This paper took 72 cities in Guangdong province as the study object and chose the approach of cluster analysis to analyze these cities and above-motioned 6 variable, then classified the 72 cities as four types:

The first-tier cities are Shenzhen and Guangzhou; the second-tier cities are Dongguan, Zhongshan, Zhuhai, Foshan; the fourth-tier cities and county towns are listed in chart three; the third-tier cities and county towns are listed in chart four.

2.4 The Calculation of Each City's Purchasing Power Index

We used the urban purchasing power index as reference to enter into those cities in order. According to the calculation formula which is published in the American magazine named "management of sale and marketing" and allowing for the convenience of calculation, we have made adjustments accordingly on the formula of purchasing power index: ID=A * 50% +B * 30% +C * 20%. Among these, A means regional total disposable income, B means regional sales volume, C means the total population with purchasing power.

Obviously, the bigger the purchasing power factor is, the stronger the regional purchasing potential and desire will be. This will provide a valuable reference for the Retail Chain enterprises to some extant when enterprises entering into the third and fourth tier cities. This paper mainly analyzed the third and fourth tier cities, and calculated these cities' purchasing power index. The results is as follows.

Chart 3 The fourth-tier cities' purchasing power index (descending order)

city	purchasing power index	city	Purchasing power index	city	purchasing power index
Zengcheng	2095340.2	Fengkai	279570.1	Yunnan	341001.7
Kaiping	1312712.8	Wenyuan	275978.6	Guangning	333497.2
Heshan	862415.3	Deqing	270839.6	Dapu	331478.8
Conghua	699586	Longmen	262730.3	Nanxiong	309961.4
Enping	637140.6	Heping	242324.1	Yangshan	304091.2
Sihui	612206.7	Dongyuan	239950.8	Fogang	287027.2
Mei	602755	Lianping	219090	Xinfeng	162834.8
Xinxing	437443.6	Jiaoling	214553.1	Yunan	146949.9
Lianxing	415627.8	Renhua	201987.9	Luyuan	143763.4
Lechang	404668.2	Shixing	193926.4	Liannan	98097.2
Yangdong	394221.7	Pingyuan	183295.4	Nanao	73258.5
Yangxi	346530.9	Luhe	180049.4		71800.7

Chart 4 The third-tier cities' purchasing power index

city	purchasing power index	city	purchasing power index	city	purchasing power index
Puning	1761392	Leizhou	803558	Yangchun	881965
Taishan	1357953.6	Xingning	752784.6	Hedong	831689.6
Gaozhou	1199558.6	Haifeng	744087	Yingde	808384.5
Caoan	1071773.7	Gaoyao	688062.6	Lufeng	803993.3
Huazhou	967626.6	Luoding	685147.3	Raoping	616350.3
Lianjiang	960696.1	Wuchuan	682071	Longchuan	541228.7
Dianbai	951762.5	Wuhua	643790	Huilai	534695.1
Huidong	933567.8	Hexi	626695.9	Huaiji	429996.5
Xinyi	914741.1	Suixi	618481	Zijin	371035.8

From chart 3, we can make a conclusion that we should enter into Zengcheng firstly and enter into Lianshan lastly. From chart 4, we know that we should give top priority to enter into Puning and the next is taishan and the last one is Zijin .

3 Conclusion

This paper aimed to the Retail Chain Enterprises' implantation of Channel to sink strategy to set up shops in third and fourth tier cities, and used the basic approach of multivariable statistics to build a analytical framework to make a choice of the order of priority when the enterprises entering into those cities. First of all, this paper has categorized the cities by using the approaches of principal component analysis, factor analysis and cluster analysis, and used the empirical analysis to analyse the 72 cities in Guangdong province through calculating the third and fourth tier cities' purchasing power index. The primary outcome is made: first, the 72 cities in Guangdong province are classified into 4 types theoretically. Secondly, giving priority to choose Puning and Zengcheng when the company entering into the third and fourth tier cities respectively. This conclusion provides a valuable theoretical reference for the Retail Chain Enterprises to choose the third and fourth tier cities in Guangdong province to set up shops. Moreover, it can also provide a theoretical basis for the enterprises to allocate the expanding resources reasonably.

References

[1] Dong Yueqing. Study on China's retail enterprise inn location selection strategy [D]. University of International Business and Economics,2002.

[2] Gao Hui. Analysis of foreign retail store location skills and program [J]. Commercial, 2004(2).

[3] Wan Zhenqin. Analysis of retail business location decisions affect the population factors analysis[J]. Market and Demographic,1997(7).

[4] Yang Wuyang, Cai Yuping. The central place in the initial theory and its application and regional planning[J]. Urban planning,1985(5).

[5] Willian J.Reilly. Methods for the Study of Retail Relationships[J]. Austin:Brueau of Business Research, University of Texas,1929.