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A Study of Elements for the Success of Underground Shopping Mall in China

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Abstract

China's underground shopping mall has gradually transformed from one with a very high degree of government intervention into a more market system. The underground shopping malls in China have undergone rapid evolution, development and growth. To investigate the performance of the shopping centers in China, some shopping centers are successful while a lot of them are failed in term of average rental income and rental occupancy rates. The success of underground shopping centers depends on a lot of external and internal factors, to find out the reasons for that, case studies will be used to analysis what factors influence their respective outcomes and subsequently examine the factors and elements which make for the successful shopping centers in term of average rental price. In this study, we can discover that among all the factors influencing the success of the underground shopping center, management level is the main determinant for the business of underground shopping center; the lack of management experience has lead to high vacancy rate in many underground shopping centers.

Key words: Development pattern; Sustainable; Management level; Underground shopping malls; China

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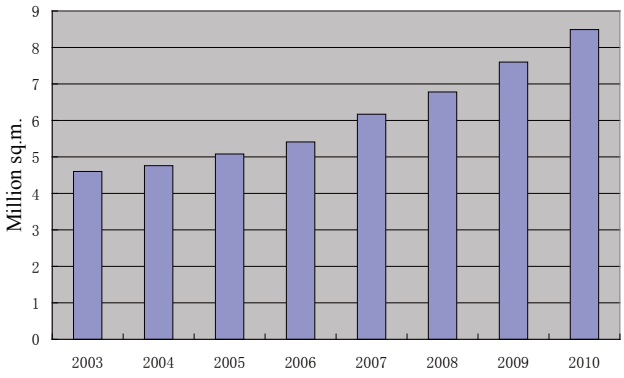
INTRODUCTION

Underground space is an important part of urban space resource. Cities all over the world consider the exploration and utilization of underground space as an important means to solve urban problems. Since 1990s, especially this century, Due to the rapid increase in population and the economic growth in China, the exploration and utilization of underground space has been greatly reinforced. The total scale of underground space has increased 37.11 million square meters in 2003 to 132.96 million square meters in 2010. The annual growth rate is about 20.7% (Source: National Bureau of Civil Air Defense), Take Beijing for example, the area of underground space which has been built in the city is 30 million square meters and about 3 million square meters is expected to increase per year, as a result, the area of underground space will reach 90 million square meters in 2020. (Qian, 2009)

With the further development of urban underground space and use of underground construction, more and more underground malls appear constantly in China. Since the Chinese government exempts developers of underground shopping malls from land-use right premiums and land appreciation tax that are levied on developers of aboveground properties, the underground developers are able to price shopping space at a discount. The total scale of China's underground shopping malls has increased from 4.6 million square meters in 2003 to 8.49 million square meters in 2010. The annual growth rate is about 7.5% (Figure 1).



Source: National Bureau of Civil Air Defense

Figure 1
Total Underground Shopping Mall Areas in China

The definition of a successful underground shopping center is high occupancy rate and relative high rental value of the shops in the underground shopping center. To investigate the performance of the shopping centers in China, some shopping centers are successful while a lot of them are failed in term of average rental income and rental occupancy rates. What are the reasons for that? Studies on factors that will impact on the success of shopping centers in the context of a developed country have been the focus of many researchers, but these have not been done in a transitional economy such as China. The goal of this study is to determine and examine the general factors which contribute to the success of underground shopping centers.

1. METHODOLOGY

There are many factors impact on the success of underground shopping malls, which are not isolated, but often interact with each other (Tong Linxu, 2005). Case studies will be used to analyze the factors affecting the success of the underground shopping centers, bases on the case studies and the analytical findings, the factors performance and their significance in affecting the success of the underground shopping centers will be explored. The research method is as following (Figure 2).

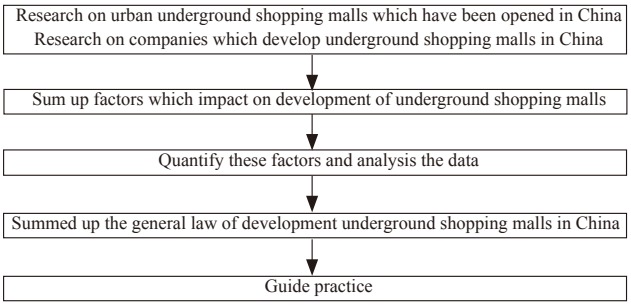


Figure 2
Methodology

Table 1
The Statistics of the Underground Business Area of Main Districts Center in Chongqing City, 2005

The center of main districts	Guanyinqiao business circle	Jiefangbei business circle	Shapingba business circle	Yangjiaping business circle	Nanping business circle	total
Area(m^2)	76000	61000	29000	26000	16000	208000
Origin	Underground space of central square	Civil air defense projects and light rail stations	The Reconstruction Project of Civil Air Defense			Basally with air defense works
Characteristics	(1) The Underground Business is basically built on the civil air defense projects, the spatial has been limited, their basement is generally to the 10 -20 meters underground, and with two floors at most. The size of individual projects is basically from 3000 to 10000 square meters, the largest one is only 450 million square meters. The form of this underground business is Monotonous, and the indoor environment is depression, unable to adapt to the needs of modern commercial. (2) Of scattered distribution, and rely on the Ground transport.					

Source: ACUUS, 2009

With ease of international relations and boost of comprehensive national strength, China gradually shifted the purpose of underground space utilization from air defense projects to overall consideration of national defense and economic construction (Table2). Currently, the guiding principle for utilization of underground space has taken shape to combine the demand in peace and in war, and benefit common people. In recent years, the development and utilization of urban underground space resource in China experienced the process of focusing on construction of civil defense underground projects, and is gradually moving onto the track of combining urban redevelopment and construction. The underground shopping malls in China have undergone rapid evolution, development and growth. In more than 20 large and medium sized cities such as Beijing, Shanghai and Shenzhen, underground development planning focused on underground shopping is started or completed.

Table 2
A Brief Timeline of Key Reforming Activities

Time	Reforming activities
1983	The PRC government promulgated rules relating to the development and use of underground civil air defense shelters during peace time.
1993	The PRC government promulgated rules to explicitly permit the development of underground civil air defense shelters funded by private and foreign capital.
1997	The PRC government promulgated rules providing for the favorable tax treatment for foreign invested enterprises engaged in the underground civil air defense shelters sector.
2001	The PRC government issued a notice requiring that the ownership and operation rights of underground civil air defense shelters be separated and that operation rights be transferable in a market-based system.
2003	The PRC government promulgated rules regarding the approval process for and the administration and supervision of the development and construction of underground civil air defense shelters using private and foreign capital.

Source: Renhe Commercial Holdings Company Limited

Harbin, Shanghai and Guangzhou rank as the top 3 cities where underground shopping malls are mostly located. In terms of geographic extension, cities located in the North and Northeast China, such as Harbin, Beijing, Changchun, Shenyang and Dalian, are believed to be the dominant region where underground shopping malls are located. East China follows in the 2nd rank with Shanghai, Qingdao, Jinan and Nanjing being the primary areas of underground shopping centers. In South China, Mid China and Southeast China, Guangzhou has the largest number of underground malls. (Euromonitor, 2008)

Renhe Commercial Holdings Company limited (1387. HK), established in 1992,it focuses on the development and operation of underground shopping centers for wholesale and retail apparel /accessories stores by building civil air defense shelters in China. The revenue generated from transfer of operation rights and lease income. In 2009, the average selling price from transfer of operation rights is about RMB 33000-38000/ square meter (Figure 3).the annual lease income is about RMB 900-1200/ square meter (Figure 4). The investors sell 47.5% of the operation rights of shopping center units for a one-time. Its gross margin was 74.6%, much higher than the average level of 30-50% of the property industry (Source: Bloomberg, BOCI).

	Revenue from operation rights transfer		Transfer of gross floor area realized		Average transfer price realized	
	2009	2008	2009	2008	2009	2008
	(RMB'000)		(sq.m.)		(RMB per sq.m.)	
Project						
Phase I of Shenyang Project	**1,321,003**	–	**31,148**	–	**42,411**	–
Wuhan Project	**674,025**	–	**26,130**	–	**25,795**	–
Phase I of Guangzhou Project	**374,154**	1,344,129	**8,252**	28,729	**45,341**	46,786
Phase I of Harbin Project	**214,613**	80,224	**6,267**	2,101	**34,245**	38,184
Phase II of Harbin Project	**7,078**	39,308	**265**	1,922	**26,709**	20,452
Phase III of Harbin Project	–	408,672	–	18,433	–	22,171
Phase I of Zhengzhou Project	–	995,863	–	22,792	–	43,694
Phase VI of Harbin Project	**1,253,876**	–	**40,748**	–	**30,771**	–
Harbin Youyi Road Project	**188,825**	–	**6,448**	–	**29,284**	–
Total	**4,033,574**	2,868,196	**119,258**	73,977	**33,822**	38,772

Figure 3
Operation Rights Transfer (Renhe Commercial Holdings Company Limited, Annual Report 2009)

	Lease income in 2009		Lease income in 2008		Leaseable GFA at the end of year 2009	2008
	(RMB' 000, except for percentage)				(sq.m.)	
Project						
Phase I of Harbin Project	**25,118**	**19.4%**	30,082	16.5%	**7,552**	13,819
Phase II of Harbin Project	**21,595**	**16.7%**	23,768	13.1%	**19,446**	19,711
Phase III of Harbin Project	**5,249**	**4.1%**	30,120	16.5%	**2,582**	2,582
Phase I of Guangzhou Project	**30,443**	**23.5%**	98,115	53.9%	**5,587**	13,839
Phase I of Zhengzhou Project	**13,001**	**10.0%**	–	0.0%	–	–
Harbin Spring	**18,077**	**14.0%**	–	0.0%	**16,800**	–
Phase I of Shenyang Project	**15,886**	**12.3%**	–	0.0%	**79,352**	–
Total	**129,369**	**100.0%**	182,085	100.0%	**131,319**	49,951

Figure 4
Lease Income (Renhe Commercial Holdings Company Limited, Annual Report 2009)

3. FACTORS AFFECTING THE SUCCESS OF THE SHOPPING CENTERS

The factors affecting the success of the shopping centers includes background study, evolution, concepts and characteristics of shopping centers in various theoretical versions as well as literature reviews on the definitions and the factors in the success of shopping centers in term of average rental income and tenants occupancy rate. In this paper, the success of shopping centers depends on a lot of external and internal factors (Figure 5).

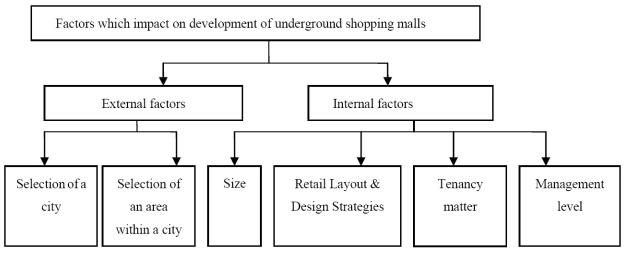


Figure 5
Factors Impact on Development of Underground Shopping Malls in China

Selection of a city: When selecting a city for development underground shopping malls, factors we need to consider include its population and population

trends, total purchasing power, total retail potential, number and size of competitors, and aggressiveness of the competition. Other factors we need to consider include distance to suppliers and raw materials, providers, environmental restrictions, labor pool & market, major economic activity, media channels, municipal services, and trade support.

Selection of an area within a city: Selection of an area is a very important factor for development underground shopping mall. It must be convenience for customers to visit and visibility for reminding customers that the center is there. Once a city has been chosen, factors you need to consider within the various areas or neighborhoods of the city include: the power of the shopping district to attract customers, the number and quality of competitive stores, the general appearance of the area, the expansion and rebuilding potential of the area and so on. Successful shopping mall must be connected with effective transport system, large catchments' areas and attraction in the nearby neighboring areas.

Size of underground shopping malls refers to its Gross floor area .The size of the underground shopping centre should be relevant to the size of the market that it intends to serve (Gorman1989 and Leasing Retail Space 1990).

Retail Layout & Design Strategies – In general, every good retail floor plan allows for an ample entrance, preferably opening into an unobstructed view of the selling area; aisles that comfortably permit customer traffic to flow freely; and room for store displays to be located for maximum shopper exposure. As a retailer, we need to strive to project not only a particular store image but also a merchandising environment.

Tenancy matter is another factor affecting the performance of the underground shopping centers. Factors we need to consider within the tenancy matter include: the tenant and trade mix, leasing negotiation and rental policy, landlord and tenant relation. Tenants would take the advantages of anchor tenant in attracting customers in the underground shopping center. Moreover, an effective and comprehensive trade mix is of importance in achieving leasing success and maintaining pedestrian flow and shops' sales volume for sustainability of future development.

Management is responsible for a successful shopping center that the shopping center is keeping 'good fit' with a clean and attractive environment for both merchants and shoppers. An effective and efficient management service is both beneficial to shoppers and tenants. Management level should take care to the hardware and facilities provided inside the underground shopping centre and the method of maintenance such as the accessibility of high level, stock control of material, the method of cleaning and maintenance, and launch various types of promotion campaign to advertise the centers to the public. As maintenance cost bore a large portion of management expenditure, better management would result in a better cost control.

4. QUANTIFY THESE FACTORS AND ANALYSIS THE DATA

Many factors are relatively conceptual and abstract in nature. It is challenging to convert such intangible ideas into concrete quantitative terms. In this study, we have attempted to adopt measurement approach with questionnaire; primary quantitative data will be collected from questionnaires surveys to identify the major factors of the successful of underground shopping centre. To achieve a numeric result on the questionnaire, most of the questions are set by five point scales ranging from 0 to 1 to quantify the perception and rating of the interviewees to different question setting. Statistical results of the questionnaire would be analysis, which could facilitate implementation and analysis of research results.

In order to measure performance of shopping centers, the effective method is to evaluate average rental price. Landlords and shop operators, however, are usually defensive and reluctant to disclose sensitive operational information, which increase the difficulties of data collection. Due to limited resource, a total of 18 underground shopping canters are selected in this study, Research on the selected underground shopping malls, quantify these factors and normalized all the data (Table 3).

Table 3
Quantify Factors Which Impact on Development of Underground Shopping Malls

Underground shopping malls	Selection of a city	Selection of an area within a city	Size	Retail Layout & Design Strategies	Tenancy matter	Management level	Average rental price
Fashion Avenue Xuzhou center	0.325	0.673	0.226	0.963	0.932	0.695	1.331
Underground Fashion Street, Taiyuan	0.24	0.812	0.833	1	0.843	0.439	0.644
Shanghai People's Square	1	0.785	0.808	0.367	0.643	0.621	0.61
Shanghai Jungian Temple Square	1	0.858	0.133	0.768	0.796	0.672	1.79
Commercial Street, Wenzhou Xinxiang	0.192	0.236	0.295	0.457	0.654	0.861	0.86
Deduce District, Chongqing, nine temples underground commercial	0.349	0.565	0.191	0.753	0.742	0.536	0.951
Underground commercial Jiefangbei	0.349	0.671	0.333	0.667	0.694	0.661	0.903
Beijing Xian Cultural Square	0.686	0.623	0.2	0.867	1	0.325	1.0246
Shun Chun under the commercial world	0.385	0.869	0.666	0.351	0.519	0.825	0.6559
Shenyang popular front	0.385	0.629	0.783	0.462	0.771	0.668	0.6335
Shenyang fashion business	0.385	0.893	0.833	0.637	0.695	0.513	0.7109
Gogol Street in Harbin	0.337	0.784	0.333	0.357	0.891	0.625	0.7902
Jiamusi in Heilongjiang Province, underground business street	0.168	0.456	0.221	0.467	0.506	0.514	0.887
Xining, Qinghai Province, Grand Cross Underground Shopping	0.12	0.347	0.366	0.627	0.602	0.895	1.0585
First Avenue, Guangzhou	0.638	0.782	1	0.548	0.819	0.901	0.7629
Jinan, four air defense Mall	0.445	0.402	0.3	0.753	0.385	0.734	0.9779
Jinan Hero Mountain air defense Mall	0.445	0.247	0.583	0.667	0.549	0.911	0.854
Nanjing Fashion Lady	0.506	1	0.733	0.793	0.963	1	1.159

Regression models are used to test the relationship between the performance of underground shopping centre and independent variables. Use Excel's Regression Tool, and Perform the Regression Analysis.

From the printout (Table 4), The adjusted R-squared is 0.994, indicating that about 99.4% of the variation of the dependent variable can be explained by the independent variables in the regression model.

Table 4
Regression Statistics Output

Regression	Statistics
Multiple R	0.994355
R Square	0.988741
Adjusted R Square	0.900717
Standard Error	0.125366
Observations	18

From the printout (Table 5), all estimated coefficients of the structural attributes are statistically significant at the 1% level. (Significance F= 2.86E-10).

Table 5
ANOVA Output

	df	SS	MS	F	Significance F
Regression	6	16.56253	2.760421	175.6375	2.86E-10
Residual	12	0.188599	0.015717		
Total	18	16.75113			

From the printout (Table 6), it is found that average rental price decrease with the size of underground shopping mall, this means that underground shopping mall with larger size has lower average rental price than the smaller one. The coefficients of the five variables, Selection of a city, Selection of an area within a city, Retail Layout & Design Strategies and Management level are positive, This suggested that the five variables have positive impact on average rental price of underground shopping mall.

Table 6
Estimated Regression Equation Output

	Coefficients	Standard Error	t Stat	P-value	Lower 95%	Upper 95%
Intercept	0	#N/A	#N/A	#N/A	#N/A	#N/A
Selection of a city	0.363655	0.134613	2.70149	0.019256	0.07035	0.656951
Selection of an area within a city	0.375869	0.194298	1.934496	0.076978	-0.04747	0.799207
Size	-0.83431	0.130526	-6.39189	3.44E-05	-1.1187	-0.54992
Retail Layout & Design Strategies	0.596937	0.160569	3.717638	0.00294	0.247087	0.946786
Tenancy matter	0.0306	0.219997	0.139094	0.891683	-0.44873	0.509932
Management level	0.761689	0.129057	5.901977	7.23E-05	0.480499	1.042879

5. ANALYSIS THE RESULTS

The findings in this study provide that the size and management level affect average rental price of underground shopping mall more often than other factors. The size and management level effect of the success of underground shopping mall should be about -0.83 and 0.76, In general. With the size effect, the average rental price of underground shopping mall has generally decrease 83% in value. With the management level effect, the average rental price of underground shopping mall has generally increased 76% in value.

The results are as expected and consistent with the status of China's underground shopping mall. China's underground shopping mall has gradually transformed from one with a very high degree of government intervention into a more market system. Lack of experience in underground shopping mall development and management has lead to high vacancy rate in many underground shopping centers. There are two mainly development pattern of underground shopping malls in China. One form is by building civil air defense shelters and using them as underground shopping centers during peace time (civil air defense underground shopping centers), the other form is real estate development pattern (underground commercial real estate). The government has no specific department for managing underground shopping malls; there are two relevant departments without setting up clear duty division. Civil Defense Office manages the civil air defense underground shopping centers while the real estate Department manages underground commercial real estate projects. The only one national regulation about underground development and management is the Regulations for Developing, Utilizing and Managing Urban Underground Space revised in 2001. In order to make better use of underground space of shopping, the reform of underground shopping mall management framework is necessary.

CONCLUSION

To investigate the performance of the shopping centers in China, some shopping centers are successful while a lot of them are failed in term of average rental income and rental occupancy rates. The present study has uncovered six primary factors which impact on development of underground shopping malls in China. It is found that the size of underground shopping mall has negative impact on success of underground shopping mall, The five variables, Selection of a city, Selection of an area within a city, Retail Layout & Design Strategies and Management level have positive impact on success of underground shopping mall. The findings provide that the size and management level affect average rental price of underground shopping mall more often than other factors.

REFERENCES

CHEN, Z.L., WANG, Y.B., LIU, H., XIAO, Q.F. (2007). Prediction of Underground Space Needs. *Planner, 23*(10), 9-13.

Corder, G.W., Foreman, D.I. (2009). *Nonparametric Statistics for Non-Statisticians: A Step-by-Step Approach*. New Jersey: Wiley.

LI, Y. (2009). *The Potentials for Integrated Underground Space Development in Urban Planning: A Case Study of Shanghai City.* The University of Hong Kong.

Lindley, D.V. (1987). Regression and Correlation Analysis. *New Palgrave: A Dictionary of Economics, 4*, 120–123.

Meade, N. and Islam, T. (1995). Prediction Intervals for Growth Curve Forecasts. *Journal of Forecasting, 14,* 413–430.

QIAN, Q.H., CHEN, Z.L. (1997). The Prospect of Development and Utilization of Underground Space in 21th Century. *Journal of Nanjing Engineering Institute, 12*(3), 1-8.

SHUN, Y.D. (2008). Practice of Performance - Based Design and Evaluation for Architecture in Shanghai. *Fire Science and Technology, 27*(11), 804 -806.

TONG, L.X. (2005). The Way of Development of Urban Underground Space in China. *Chinese Journal of Underground Space and Engineering, 3*(1), 27-32.

WANG, S.G., ZHANG, Y.C., WANG, Y.F. (2006). Opportunities and Challenges of Shopping Centre Development in China: A Case Study of Shanghai. *Journal of Shopping Center Research, 13*(1), 19-55.

YUAN, H., LIU, X.R., DAI, Z.Z. (2009). *Research of the Underground Space Planning and Underground Building Design in Mountain City-Take Chongqing City For Example*. Proceedings of 12th International Conference of the Associated Research Centers for Urban Underground Space, China, 188-192.

