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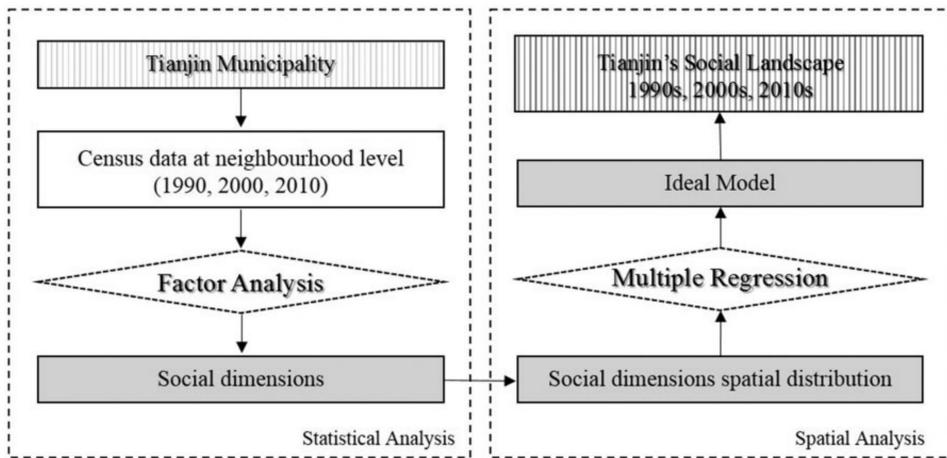
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## ◆ Introduction

Tianjin has seen dramatic changes in its social landscape since China's economic reforms of 1978. Given this context, this study aims at understanding the different urban socio-spatial patterns of Tianjin and their mechanisms in three distinctive economic contexts by adapting both statistical and spatial approaches.

## ◆ Methodology

- Tianjin's Year Books 1980 – 2013.
- The 1990, 2000 and 2010 Tianjin censuses at the neighborhood level.
- Research workflow:



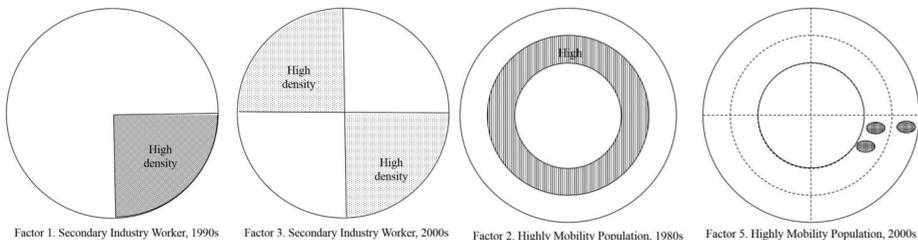
## ◆ Results

### 1. PCA statistical results

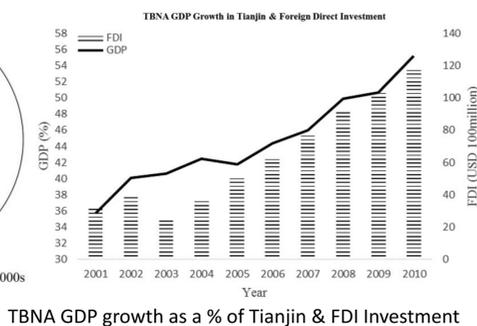
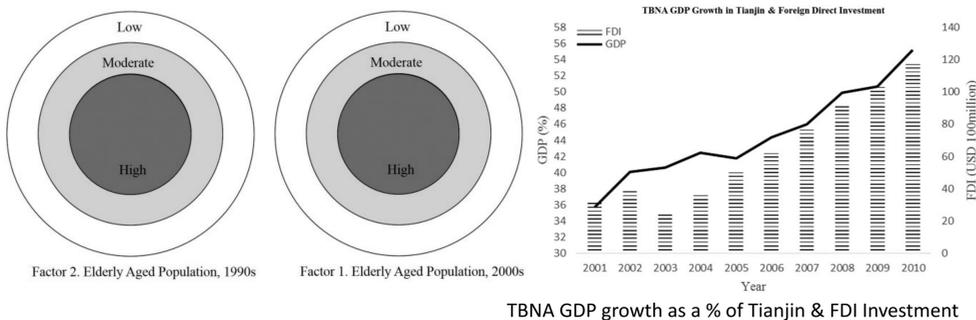
	1980s	%	1990s	%	2000s	%
Factor 1	Urban labour force	44.00	Secondary industry workers	21.84	Urban elderly population	22.79
	Nonagricultural population	0.957	Age group 15-64	0.797	Nonagricultural population	0.793
	Higher education level	0.918	Secondary industry workers	0.795	Age group 65 and over	0.775
	Tertiary industry workers	0.890	Temporary population	0.763	Family with 1-3 persons	0.659
	Family with 1-3 persons	0.857	Family with 1-3 persons	0.642	Unemployment rate	0.611
	Secondary industry workers	0.838			Higher education level	0.603
	Married rate	0.822				
	Illiteracy rate	-0.787				
	Unemployment rate	0.612				
				Urban elderly population	20.83	Married population
Factor 2	High mobile population	12.81	Unemployed rate	0.781	Illiteracy rate	0.807
	Single rate	0.873	Age group 65 and over	0.761	Married rate	0.761
	Temporary population	0.857	Nonagricultural population	0.706		
			Minority	0.591		
Factor 3	Middle aged population	10.99	High socio-economic status population	19.96	Secondary industry workers	12.33
	Age group 65 and over	-0.875	Higher expenditure on houses	0.758	Single rate	0.670
	Age group 15-64	0.777	Higher education level	0.685	Secondary industry workers	0.578
			Tertiary industry workers	0.631		
			Higher monthly rent	0.617		
Factor 4	Ethnic minorities	8.98	Illiteracy rate	-0.593	Tertiary industry workers	10.46
	Minority	0.957	Single population	12.45	Higher monthly rent	0.780
			Married rate	-0.926	Tertiary industry workers	0.610
Factor 5			Single rate	0.750	High mobile population	9.11
					Temporary population	0.855
					Minority	0.556

### 2. PCA spatial results

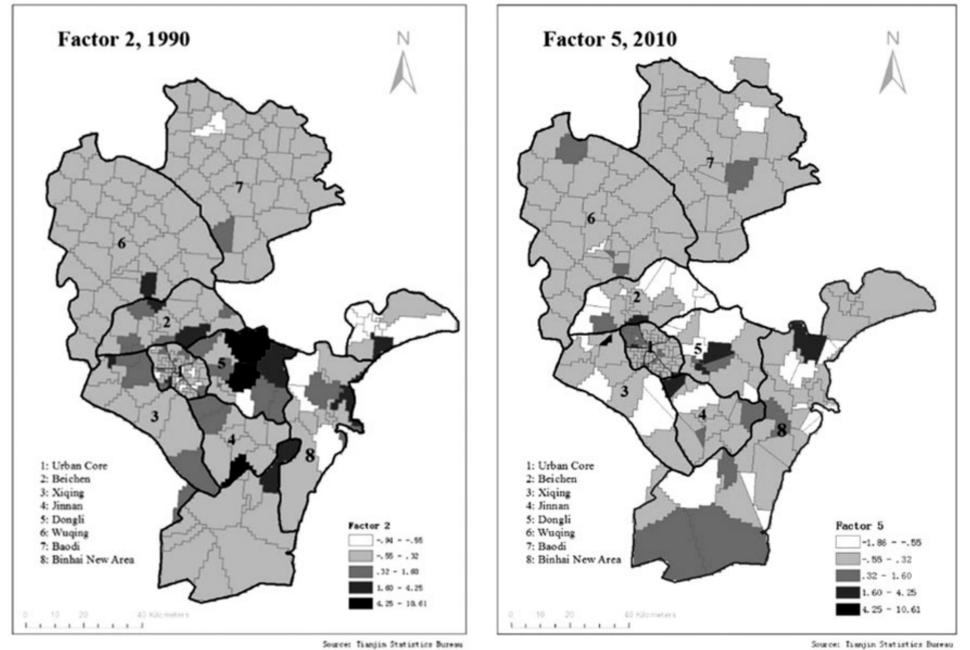
- 1990s and 2010s: secondary industry workers appeared.
- 1980s and 2010s: highly mobile population.



- 1990s and 2010s: urban elderly population.



TBNA GDP growth as a % of Tianjin & FDI Investment

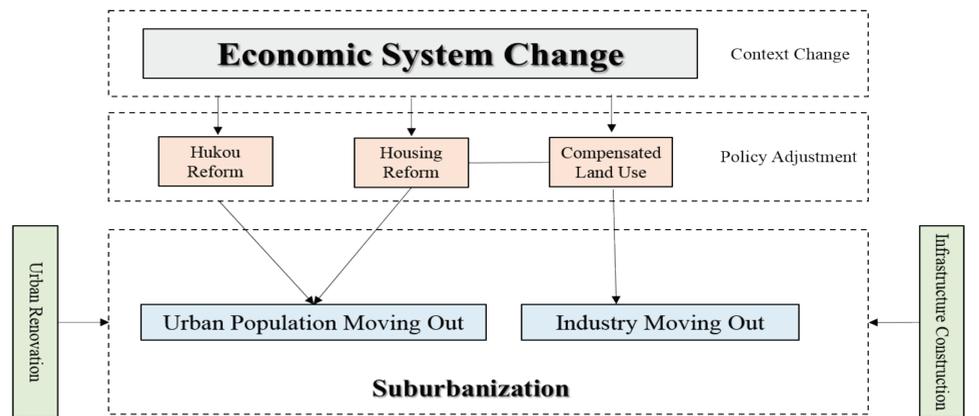


## ◆ Discussions

### 1. A distinctive "dual-core" city

- In addition to the traditional Urban Core located in the center of the city, the Binhai New Area (TBNA) in the southeast is forming the second core of Tianjin.

### 2. An asymmetric suburbanization process

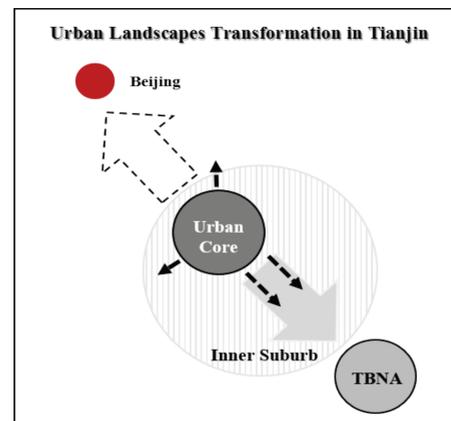


### 3. From under the shadows of Beijing into the limelight

- Beijing had a "shadow casting" effect on Tianjin's development (1990 – 2000).
- Tianjin has gradually recovered from under Beijing's shadow. (2000 – 2010).

## ◆ Conclusion

- The urban social landscape of Tianjin can be characterized as "one axis, two nuclei" urban morphology.
- Urban core's expansion and population movements in Tianjin is asymmetric.
- Tianjin is now taking advantage of its close connectivity with Beijing to flourish.



## ◆ References

Liu, Z.W. & Ca, H. (2017). Spatio-temporal urban social landscape transformation in pre-new-urbanization era of Tianjin, China. *Environment and Planning B: Urban Analytics and City Science*, 44(3): 398-424.