Unlocking the Twilight Treasury: An Empirical Study on Night-time Economy Policies in China

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(Preliminary and incomplete)

Abstract

Night-time economy has become China's crucial driver for promoting domestic demand. According to the Ministry of Commerce, 60% of the consumption happens at night in China. To boost regional economy through diversified night-time activities including night markets, night-time tourism, and entertainment, a number of policy guidelines have been introduced across various cities. Existing literature is either from western perspectives or mostly focuses on qualitative discussion in tourism in China, leaving a paucity in solid quantitative evidences on the impact of city-level night time economy policies on local economic development. We quantify the contextual contents of night-time economy policies by different categories across all cities and uses prefecture-level panel data from 2014 to 2021 to conduct multi-period difference-in-differences analysis on the impact of city-level night time economy policies on regional development. Our results show that night-time economy policies have a significant and positive effect on local nightlight intensity, and this positive effect is driven by increasing local tourism revenues (rather than the number of visitors). Through further investigation in different policy instruments, we find that supply-oriented policy instruments (financial and information support, public services, etc.) exhibit stronger effectiveness.

Key Words: Night-time economic policy, regional development, tourism.

JEL Codes: R11, Z32, O18

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1. Introduction

Night-time economy has become China's crucial driver for expanding domestic demand and promoting consumption. According to the Ministry of Commerce, 60% of the consumption happens at night in China.[2] As an important initiative to "stimulate the potential of a new round of consumption upgrading",[3] the night-time economy has developed from only night markets to diversified night-time consumption platforms that include night-time tourism, night-time entertainment, and other products. In 2019, China's General Office of the State Council has proposed to boost the night-time business and market and develop the night-time culture and tourism economy by building more than 200 national night-time culture and tourism consumption agglomeration areas by 2022.[4] Consequently, to boost regional economy by seizing the opportunity of night time economy development, a number of policy guidelines have been introduced at various levels of government on the night-time economy. Meanwhile, night-time economic policy is not only macroscopic regulations and controls on the direction, but also focused on the organized cultivation of innovation, business management, and industrial standardization to pursue the diversified, healthy and sustainable development of the night-time economy (Wang et al., 2021; Yu, 2021).

Contingent on the government's orchestration of an assortment of policy instruments, guidelines have quickly switched from conceptual frameworks to pragmatic implementations (Flanagan et al., 2011). Many cities, depending on their geographic positioning, human landscape, and other features, have deployed a unique selection of policy tools that are intricately linked to their prioritization of night-time economy development. Given China's specific circumstances where the development of the night-time economy involves relatively late initiation, limited experiences, and precarious foundations when compared to western developed countries, there are ample needs to evaluate the outcomes and mechanisms to provide references for policy makers in both China and other developing countries. The implication of evaluating existing experiences in adopting night time economic policies lie

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[2] "Consumption Habits of Urban Resident", **Xinhua News Agency report** http://www.news.cn/food/20230616/bc65cd23ee534879acf847ef9ae0290c/c.html

[3] **Beijing Government Work Report** https://www.beijing.gov.cn/zhengce/zcjd/201907/t20190712_101453.html

[4] General Office of the State Council , "Opinions of the General Office of the State Council on Accelerating the Development of Circulation Industry and Promoting Consumer Spending" (see https://www.gov.cn/zhengce/zhengceku/2019-08/27/content_5424989.htm) and "Opinions on Further Stimulating the Consumption Potential of Culture and Tourism" (see https://www.gov.cn/zhengce/content/2019-08/23/content_5423809.htm).

beyond the future policy formation to facilitate steady night-time economic growth, and is also relevant to explore a new economic development model in many developing countries. Therefore, this paper conducts empirical investigations concerning whether the implementation of night-time economy policies is conducive to the development of the city's economy and their mechanisms, as well as the heterogeneous effects across different policy instruments.

We quantify the contextual contents of night-time economy policies by different categories across all cities and uses prefecture-level panel data from 2014 to 2021 to conduct multi-period difference-in-differences analysis on the impact of city-level night time economy policies on regional development. Our results show that night-time economy policies have a significant and positive effect on local nightlight intensity, and this positive effect is driven by increasing local tourism revenues (rather than the number of visitors). Through further investigation in different policy instruments, we find that supply-oriented policy instruments (financial and information support, public services, etc.) exhibit stronger effectiveness. The robustness of our regression results is further demonstrated by placebo test, parallel-trend test, and different subsamples.

Compared to existing literature, our paper provides solid quantitative evidences on the impact of city-level night time economy policies on local economic development and the mechanisms. The sample and our collection of policy variations comprehensively covers the entire country, and consequently excels in its generalisability compared to other related studies that focus on specific industries or specific regions. In addition, we also explore the prevailing opportunities and challenges of China's night-time economy and delves into the intricacies in detailed local operations of night-time economic policies.

The remainder of this study is structured as follows. The Background and Hypothesis section describes the opportunity for night time economy development and the history of policy implementation from central to local, thus grounding the research hypotheses in reality; The Literature Review section provides a comprehensive summary of night time economy studies; The Data and Methodology section describes the data resources and processing method, and model used for analysis; The Results Analysis discusses key findings, mechanism test and heterogeneity test based on different policy instruments; The Conclusion

and Discussion section concludes the research outcomes, outlining several limitations and possible future research directions, and trying to provide several guidelines for policy formulation.

2. Background and Hypothesis

2.1 Night-time Economy Policy Background

Throughout the development of the night-time economy, people's behavior, although not directly dictated by policy or regulation, still experienced significant influence and modulation (Tiesdell and Slater, 2006). To cope with the increasing enthusiasm for developing the night-time market and promote multi-dimensional economic growth, local governments have promulgated a wide range of regulations and plans over the past 20 years. As shown in Table 1, since 2019, the number of city-level related policies has increased rapidly, and its identity as a critical booster for economic expansion has been practiced and promoted nationally.

Table 1: The number of policies related to night-time economy from 2004 to 2023

Year	Number of Policy	City
2004	1	Qingdao
2012	1	Chuzhou
2014	1	Wenzhou
2017	1	Nanjing
2018	1	Tianjin
2019	35	Dalian, Longyan, Chengdu, Ji’nan, Beijing, Foshan...
2020	62	Yancheng, Nanning, Rizhao, DaLian,Lincang...
2021	8	Zibo, Liuzhou, Wuhu, Suzhou...
2022	11	Lasa, Guiyang, Yinchuan...
2023	6	Shenzhen, Fuyang, Huangshan...

In August 2019, according to the "Opinions on Accelerating the Development of Circulation Industry and Promoting Consumer Spending," the central government first listed "the creation of an active night-time business and night-time market" as one of the twenty opinions on promoting urban and rural consumption at the national level. Local governments have started developing the night-time economy as their core mission to facilitate economic growth. They are introducing various policy measures to support and optimize the night-time business environment, improve supporting infrastructure, and promote the local characteristic industry to forge a distinct night-time business card. In a series of systematic projects to build the city's night-time economy, the guidance and promotion of policy act as a crucial guarantee to light up the city at night. Thus, this paper first proposes Hypothesis 1.

Hypothesis 1. Night-time economy policy is conductive to further developing the local night-time economy.

Specifically, night-time economy policy may influence the economy development through following several channels.

2.2 Influence Mechanisms

The different supplementary industries support the sustainable development of the night-time economy. Being the pioneer country to develop a local night-time economy and introduce corresponding policies, the lack of suitable industrial supply in the United Kingdom has resulted in the over-expansion of the cheap alcohol industry, leading to severe social problems. Meanwhile, with people’s growing pursuit of better lives, the key features of the night-time economy are no longer limited to the traditional areas represented by bars or restaurants but rather to the continuous diversified development of culture, art, tourism, and other fields. Tourism, as a representative of the high-end service sector in the core industry of the night-time economy, its promotion is associated with the synergistic development of related industries, including catering and hotels, which will facilitate the optimization and upgrading of the industrial structure of the national economy (Mao et al., 2020).

Consumption is the critical engine for economic growth. In 2023, the amount of yearly total sales of consumer goods reached 47.15 trillion yuan, representing a 7.2% year-on-year

increase. The contribution of final consumption expenditure to economic growth covered 82.5%, driving economic expansion by 4.3%[5]. To stabilize the rise of consumption confidence and incentivize consumers' enthusiasm, cultivating a rich and diverse consumer market became more and more important. The new consumption patterns and abundant scenarios in the night-time economy have gradually made it a new point of consumption growth.

Accordingly, Hypothesis 2 is proposed under these two circumstances.

Hypothesis 2. Night-time economy policy takes effect through facilitating local tourism development and stimulating consumption.

2.3 Heterogeneous Effect

However, geographic differences exist in people's preference for night-time activities and consumption. Based on the data published from the TikTok big data platform[6], differences in the frequency of POI (points of interest) posts by users from various cities on TikTok suggest substantial variations in their night-time lifestyles, which are largely shaped by unique city characteristics and climatic conditions. Meanwhile, the existing legal and policy frameworks is based on the day-time industry, which may cause potential barriers to the improvement of the night-time industry(Mao et al., 2020). Therefore, due to the various temporal and spatial features of the local night-time economy, the choice of policy instruments differs among cities. As a systematic project, policy formulation requires regional governments to customize policy practices according to various regional specifics, utilize their macro-control policies to balance the social cost and benefit, thereby, addressing the rising diversity of consumer needs. Correspondingly, Hypothesis 3 is proposed:

Hypothesis 3. The effect of different night-time economy policy instruments varies.

3. Literature Review

Since its initial proposal in the UK during the 1990s (Montgomery, 1990), the night-time economy has been employed as a significant measure to facilitate urban rejuvenation (Lovatt

[5] **Report of the Division of National Economic Accounts of the National Statistical Office** https://www.stats.gov.cn/sj/sjjd/202401/t20240118_1946694.html

[6] **Ocean Engine Case Study Report** https://trendinsight.oceanengine.com/arithmetic-report/detail/956?source=bgyq421

and O' Connor, 1995) and invigorate urban vitality (Bianchini, 1995). Due to the potential for stimulating economic growth, creating job opportunities, and fostering cultural engagements, the night-time economy has caught the interest of scholars, policy designers, and urban strategists (Son et al., 2023). Simultaneously, the dual economic and social characteristics of the night-time economy endow the research on the night-time economy with profound social value and economic connotation.

3.1 Economic Attributes

Drawing upon the theoretical findings of Mao (2020), the short-term boost for the whole economy attributed to the night-time economy primarily lies in its growth, synergistic, and agglomeration effects. Specifically, by prolonging economic activity hours (Bianchini, 1995), utilizing the potential of core night-time industries (Hobbs et al., 2005; Fuller et al., 2018), and fostering economies of scale in night-time economic agglomerations (Wen and Wang, 2004; Roberts, 2004), economic growth as a whole could be spurred. Meanwhile, the multifaceted impacts of the night-time economy also contribute to urban economic prosperity by diversifying consumption options (Hobbs et al., 2005) and enhancing the city's image (Heath, 1997). These economic benefits are reflected in various aspects of a city's economic life. Partners (2014) portrayed the night-time economy as a productive measure for increasing employment, exemplified by the London night tube, which has provided 2,000 permanent jobs and 17,000 indirect jobs. By selecting the Yangtze River Delta region as the study object, Yan et al. (2014) pointed out that the advancement of the night-time economy is a primary stratagem employed by the Chinese government to stimulate urban consumption and enhance capital mobility.

Meanwhile, the night-time economy, in conjunction with other factors, is also employed to investigate economic development disparities, specifically in sectoral and regional imbalances. Utilizing data on the intensity of housing imbalance, Li et al. (2022) examined the unequal development between Shanghai's night-time economy and its housing sector. In a case study of the transaction of the post-industrial urbanity of Lanzhou towards a nightlife economy, Hu et al. (2022) highlighted the development disparities among its urban elements. Based on the night-time light data, Zhao and Zhu (2023) explored the uneven

regional economic development that may result from China's long-term marketization process.

The duality of social impacts brought about by developing industries related to the night-time economy is also a popular topic that scholars constantly explore. Chang and Chun (2006) pointed out that differentiated night markets are a spur for international tourism in the Taiwan region. Through online questionnaire distribution, Jiang and Hong (2023) investigated night-time traveling preferences among the Z generation in China. People, especially young people, are more focused on night-time leisure activities that are associated with alcohol (Rowe and Bavinton, 2011). Predominantly concentrated within the tertiary sector, the distinct characteristics of the night-time economy ensure that any beneficial developments in this sector will subsequently lead to enhanced progression of the night-time economy (Hollands and Chatterton, 2003; Hobbs et al., 2005).

3.2 Social Attributes

The impact of the night-time economy on social aspects is reflected in three main areas: social relations, social composition, and social environment. From the social relations perspective, the night-time economy creates a social life space that is more accessible for building intimate relationships with a sense of identity and belonging while increasing the likelihood of exposure to strangers (Eldridge, 2021). Meanwhile, night also has a more pronounced social advantage, which increases the chances of forming and maintaining social relationships (Yeo et al., 2016). Beyond building intimate relationships, the more critical value of the night-time economy is reflected in promoting pluralistic participation and providing warmth and a sense of belonging to marginalized members of society (Yeo and Heng, 2014). Regarding social composition, Rowe et al. (2008) define a successful night-time economy as bringing together diverse population groups to foster a city’s vibrancy. As for the social environment, infrastructure construction, such as lighting equipment, promotes street security to fulfill individuals’ perceived safety (Heath, 1997). Compared with shops alongside gloomy tiny streets, those equipped with light-filled public facilities are more attractive to customers (Rowe et al., 2008).

3.3 Night-time Development Problem

However, with the expansion of the night-time economy, problems encountered in this process have attracted the attention of scholars. Firstly, the increment of social costs. Smith and Raymen (2018) explored the potential correlation between the night-time economy and the dramatic rise in violence. Noise from nightlife degrades the livability of the community and seeds instability in friendly neighborhoods (Nofre, 2018). Bromley et al. (2000) reveals that highly localized night-time crime promotes functional segregation of night-time economic development. Urban night-time light pollution is also one of the dilemmas caused by the development of night-time economy. Secondly, the unsustainable development of related industry. Smith and Raymen (2018) discovered that the alcohol industry, considered by academics to be an integral part of the night-time economy (Tutenges, 2013; Thurnell-Read, 2015), derives 60% of its profits from the act of drinking detrimentally. There are also related researches pointing out that many businesses closely linked to the night-time economy develop at the expense of the environment (Gaston et al., 2013).

In the face of the problems arising from the night-time economy, city managers expect to alleviate these conflicts by formulating relevant policies, with scholars proposing rationalization suggestions for city managers by examining the effectiveness of these regulatory strategies. Kypri and Livingston (2020) concluded that there was a dampening effect on local assaults in Sydney, via five-year restrictions on alcohol trading hours; however, it highlighted the potential displacement of such incidents to other areas. Tiesdell and Slater (2006) explored the possibility to provide a more proactive approach to night-time economy management in the United Kingdom, focusing on the strategic role of two predominant control measures, planning and liquor licensing. Regarding time mobility and transport planning, by analyzing London night-time policies, Smeds et al. (2020) derived the lack of consideration for the differentiated needs of its participating subjects; by summarizing existing research, Lin and Fearn (2003) suggested that restrictions on night driving would be effective in reducing the proportion of teenage drivers involved in accidents. Certain scholars have revisited the fundamental principles of urban management, examining the dichotomy between the governance of the night-time economy and the allure of cities coupled with consumption driven by business interests (Crawford and Flint, 2009).

3.4 Research Gap

By summarizing existing research on the night-time economy, there is clear evidence that the majority of studies are established from a western perspective (Yeo and Heng, 2014), resulting in a dearth of localized research focused on China. Additionally, studies related to China's night-time economy tend to concentrate on its more economically developed region, such as the Yangtze River Delta (Yu et al., 2021; Lu et al., 2018), or specific industries, like tourism (Zhang et al., 2023), thereby under-reporting the economic development of cities nationwide; Moreover, the examination of night-time economy policies often leans towards theoretical approaches (Yu, 2021; Wang et al., 2021; Mao et al., 2020), with a noticeable inadequacy of quantitative analyses of their impact; The exploration of the underlying role mechanisms of policy remains largely untouched (Mao et al., 2020), creating a substantial knowledge gap.

4. Data and Methodology

The introduction of policies about China's night-time economy commenced in 2004 when Qingdao published China's first dedicated document on night-time economic policies. For more than a decade after that, the night-time economy remained a small-scale development in China until 2019, when a large number of night-time economy special policies sprung up across the country. Hence, considering the development characteristics of night-time economy policy in China and data availability, the sample interval for this study was set from 2004 to 2022, and on this basis, the annual data of 288 prefectural-level cities were selected for the study to examine.

4.1 Variable Selection and Data Processing

1) Night-time Light Intensity (NTL). In this research, average night-time light intensity data are utilized to represent the level of night-time economy. From the spectrum of active human behavior, the greater the intensity of the night-time lights, the more frequent the human activities at night (Jiang et al., 2018). Meanwhile, from an economic intensity perspective,

Wang et al. (2010) shows that there exists a significant linear relationship between GDP per unit area and the average value of night-time light intensity. These studies provide preliminary evidence of the feasibility of using night-time light data to reflect regional economic performance. Compared with traditional economic indicators, night-time light data are accessible from human interference (Xu et al., 2015), highly objective and comparable, and are able to reflect hard-to-capture data in traditional economic data (Sutton and Costanza, 2002).

Night-time light data obtained from NPP-VIIRS and DMSP-OLS have been extensively utilized in many studies. However, due to technological and other constraints, the former suffers from low data resolution and data saturation (Letu et al., 2010; Cao et al., 2019; Elvidge et al., 2014; Levin et al., 2020), while the latter is plagued by background noise and a paucity of annual data (Chen et al., 2020). Most critically, a temporal discontinuity exists between these two types of data, posing a challenge for enhancing the scope of the study by extending the timeline. To avoid the bias and deficiencies caused by above data flaws, NPP-VIIRS-like NTL data were obtained from Chen et al.'s research, which demonstrates a reliable quality in spatial patterns and temporal consistency.

The original data were primarily retrieved from the Harvard Dataverse[7]. Following this, ArcMap was utilized to delineate the administrative boundaries of prefecture-level cities according to the vector map of administrative districts. Subsequently, each city's average night-time luminance (DN) was computed. Additionally, according to the overview from China's government's official report[8], the night-time economy encompasses nearly all tertiary industries, such as tourism and commerce. To better analyze the policy impact on the night-time economy and exclude the interference from non-economic activities, the interaction terms of "value-added of tertiary sector as a share of GDP (%)" and "night-time light intensity" are added to the baseline regression.

2) Night time Economy Policy. First, search for relevant policies on the PKU LAW database by using the keywords "night-time economy," "night-time consumption," and "moonlight economy." Given that local governments' focus on developing the night-time economy varies

[7] https://dataverse.harvard.edu/dataset.xhtml?persistentId=doi:10.7910/DVN/YGIVCD
[8] https://www.gov.cn/xinwen/2022-09/30/content_5713967.htm

according to specific regional characteristics, associated policies have been given diverse names to represent their unique development features. Consequently, the policy search conducted within this study will not be constrained to the term "night-time economy." Instead, it will encompass all specifically tailored policies promoting the night-time economy. Second, further search on the government portal for examination. Third, manually collate and screen policy entries to prevent duplication and omission, consolidating the results into a table for subsequent heterogeneity analysis.

Throughout the time frame of this study, 121 city-level night-time economy policies were successively introduced, involving 58 prefecture-level cities across the country. Several cities, such as Ningbo, Longyan, Jinan, and Linyi, implemented multiple night-time policy entries in separate years. For Ningbo, the first was implemented in 2014; the last was in 2020; for Longyan, two successive night-time economic policies were issued in 2019; for Jinan and Linyi, the first was in 2019, and the last was in 2020. Considering the delay in policy effectiveness and the enactment of the subsequent policy towards the end of the study time frame, the year of policy firstly issued will be recognized and recorded as the initial year of policy implementation.

3) Control Variables. To ensure the credibility of the regression results and the accuracy of the policy effect measurements, reference to existing literature on the night-time economy(Zhang et al., 2023; Mao et al., 2020; Doll et al., 2006; Zhou et al., 2015; Roberts, 2006), five control variables are chosen: ①Industrial Structure Level: use Value added of primary sector as a share of GDP to represent; ②Level of Economic Aggregation: use Population Density to represent; ③Level of Public Transportation: use Passenger volume of road transportation to represent; Natural logarithm are taken for some of the control variables to reflect the level of change when doing empirical analysis. Furthermore, by calculating the annual mean of control variables for each city prior to policy implementation, new time series of control variables are generated. This approach effectively reduces the potential interference of city-level heterogeneity and time trends, ensuring more precise and reliable estimates of the policy effect.

Given the above object and scope of this study, four major sources of data are used in this paper:① Local night-time economy policies from 2004 to 2021 are collected from the PKU Law Database, which covers PRC legislation, policies, regulations, cases, and journal articles since 1949 ② Secondary verification of policies on the local government portal. ③ The raw night-time light intensity data for prefecture-level cities were obtained by referring to Chen et al.(2020) 's research and recalculating the average DN value through ArcMap.④ Other economic data at the prefecture-level city level are available through the Statistical Yearbooks of each province and China Urban Statistical Yearbook.

The category and unit of the variables are summarized in Table 2, and the descriptive statistics of all variables are reported in Table 3.

Table 2: Variable Definitions

Category	Variable	Unit
Explanatory Variable	Nighttime Light Intensity	DN average
	Value added of Tertiary sector as a share of GDP (%) * Nighttime Light Intensity	DN average
	GDP	100 million
Explained Variable	Treat*Post	0 or 1
Control Variables	Population Density	People/km^2
	Passenger volume of road transportation	10 thousand
	Value added of primary sector as a share of GDP	0 - 100%
Mechanism Test	Domestic Tourism Revenue	10 thousand
	Domestic Tourism Population	10 thousand
	Retail Sales of Consumer Goods per capita	yuan/person
Heterogeneity	Supply-oriented Policy Instrument	0 - 100%

Tests	Environmental Policy Instrument	0 - 100%
	Demand-based Policy Instrument	0 or 1

Table 3: Descriptive Statistics

Variable	Obs	Mean	SD	Min	Max
Light	5453	0.963	2.128	0.001	25.911
Tertiary(%) * Light	5422	0.464	1.163	0.001	16.308
GDP	5421	21319701	34222216	31806	4.465e+08
Average GDP	5412	49449.79	51641.917	698.138	532351.13
Value added of primary sector as a share of GDP (%)	5422	46.184	11.475	6.275	90.97
Total Retail Selling	5411	8220535.4	13743557	238	1.808e+08
Local Budget Revenue	5422	1870485.6	4738114.8	12235	77718002
Local Budget Expenditure	5422	3304199.8	5856466.5	39065	93931600
Saving Balance	4558	13296401	23105582	226567	3.731e+08
Road Passenger Traffic	5335	6880.765	12580.392	1	286557
Domestic Travel Population	5453	962.773	995.183	1	2991
Domestic Travel Revenue	5453	1656.227	1314.607	1	4032
Population Density	5369	0.551	1.571	0	20.286

4.2 Empirical Models

The primary objective of the model construction in this study is how to cleanly separate the effects of night-time economic policies. Meanwhile, it is also required to meet the multiple time-point observation requirements brought about by the different years of policy implementation in each city. Therefore, on the basis of traditional double difference model, multi-temporal difference-in-difference modelling is constructed:

$$Light_{i,t} = \beta_0 + \beta_1 Treat_i \times Post_t + \sum_\gamma X_i + \mu_t + \lambda_i + \varepsilon_{i,t}$$

Specifically, $Light_{i,t}$ represents city night-time light intensity. $Treat_i$ indicates whether the city has implemented the night time economy policy and takes the value of 1 if the policy has been implemented and 0 otherwise. $Post_t$ is set up according to the different years of the policy in different cities to indicate whether it is before the implementation of the policy, and takes the value of 1 if it is in the year of policy implementation and later, and 0 otherwise. The coefficient on the interaction term β_1 indicates the pure policy effect. With reference to the research hypothesis mentioned previously, we expect the coefficient to be significantly positive, indicating a significant promotion of night-time light intensity in the treatment group compared to the control group after the implementation of the policy. X_i is a series of control variables. Meanwhile, regarding the research methods used by previous scholars to assess the effects of policy implementation(Li, Hu, and Cao, 2018), a two-way fixed-effects model is used, controlling for city fixed effects μ_i and year fixed effects λ_t. $\varepsilon_{i,t}$ is the random error term.

5. Results

5.1 Benchmark Regression Results

The benchmark regression results are reported in Table 4, with column 1, 3 and 5 represents the regression outcome with year fixed effect and city fixed effect, controlled value added of primary sector as a share of GDP; column 2, 4 and 6 added passenger volume of road transportation and population density on this basis. The empirical results shows that regardless of adding different control variables, the estimated coefficient of explanatory variable is significantly positive on 1% level. The coefficient of the interaction term indicates that the average value of night-time light intensity in city with night-time economy policy is 3.363 unit higher than those without conducting policy. It is evident that the implementation of night-time economic policy is conductive for the further development of local night-time economy. Hypothesis 1 is verified.

5.2 Parallel Trends Test

The parallel trend test is carried out based on Regression (3). Specifically, set 15 years before the policy implementation as the base year and event study method is used. As shown in Figure 1, the coefficients of estimated policy dummy variables are insignificant before the year of policy operation, indicating that there is no statistically significant variation in the night-time light intensity between the treatment group (city with night-time economy policy) and control group (city without such policy), satisfying the parallel trends assumption. After policy introduction, the coefficients are significantly positive with an obviously rising trend, showing the significant positive impact of night-time economic policy on night-time light intensity. Notably, the Figure reflects a delay in the impact of policies. The reason for this phenomenon possibly due to the fact that the policy for the construction of infrastructure, the upgrade of industries takes time and resources for the establishment and the layout; and the people's consumption psychology and the adjustment of the expectations for the future, similarly requires a certain period of time. All these are reflected in the delayed impact of policies on the night-time economy. Meanwhile, the trend of the policy variable coefficient also shows the time-sensitivity of policy effect, which requires a series of supplementary policies to guarantee the long-term sustainable development of night-time economy.

Table 4: Benchmark Regression Results

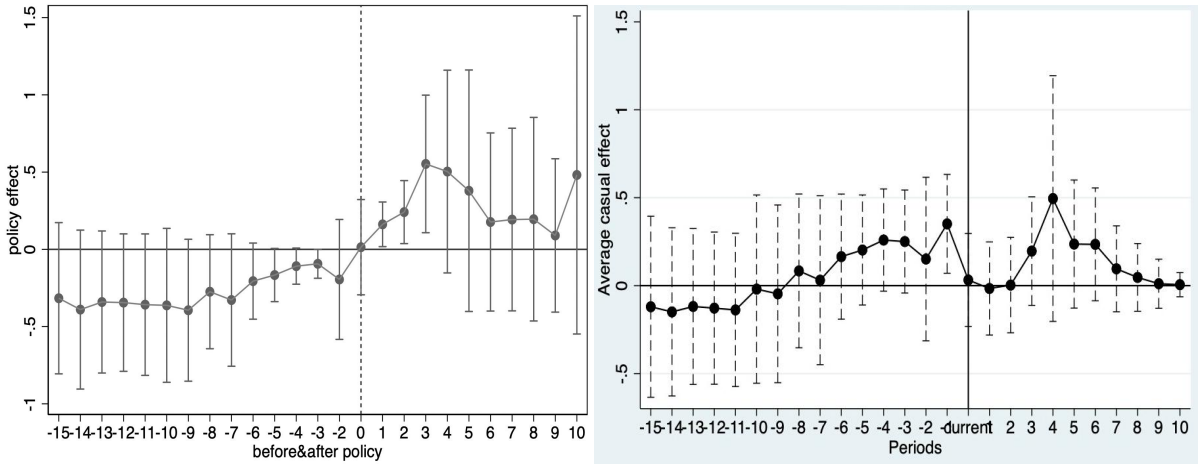
Variable	Night-time light intensity		Tertiary Share* Night-time light intensity		GDP per capita	
	(1)	(2)	(3)	(4)	(5)	(6)
Night-time Economy Policy	0.555***	4.398***	0.457***	3.363***	13,132***	46,552**
	(0.202)	(1.116)	(0.146)	(1.107)	(4538.761)	(2.0e+04)
City- and year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industrial structure	Yes	Yes	Yes	Yes	Yes	Yes
Population density and road traffic	-	Yes	-	Yes	-	Yes

Number of Observations	5453	5453	5422	5422	5412	5412
Adjusted R^2	0.877	0.883	0.837	0.848	0.860	0.863

Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

Figure 1: Parallel Trends Tests on Night-time Light Intensity

Panel A: Regular Event Study **Panel B: Adjusted via Sun & Abraham(2021)**



Note: The consecutive lines reflect the marginal effects of the implementation of the night-time economic policy, and the short vertical solid lines above and below are confidence intervals at the 95 % level.

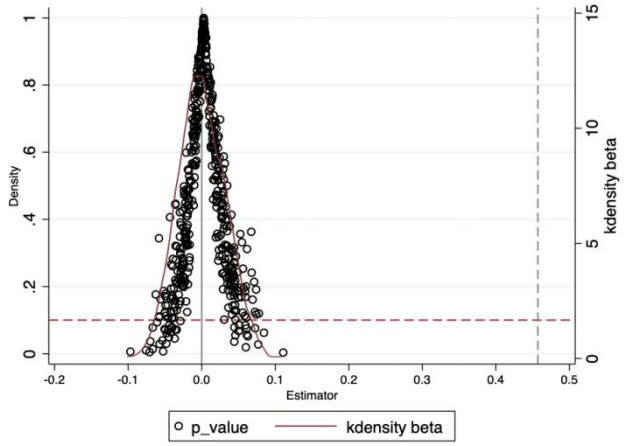
However, when there is heterogeneity in the impact of policy shocks on different individuals, traditional two-way fixed effects models may suffer from estimation bias when identifying the average treatment effect. To address the potential impact of this issue on the baseline regression results, this paper uses the S-A statistic proposed by Sun and Abraham (2021) to conduct a dynamic effect test. As shown in the figure, after applying S-A statistic, the dynamic effects remain consistent with the pre-treatment trends, further confirming the robustness of the regression results presented in this paper.

5.3 Robustness Test

1) Placebo Test. The placebo test is carried out to test whether the night-time light intensity increment effect is resulted in other unobserved factors. Specifically, create fictitious city with night-time economy policy and randomly generate implementation year. Repeat this process for 500 times and run the regression to obtain the coefficients. Figure 2 shows the density distribution of the coefficients. The fictitious coefficients are normally distributed around 0, with the benchmark regression coefficient(0.457) lying outside the entire

distribution and most of them are not significant. Therefore, excluded the influence of possible unobserved factors and proved the robustness of the baseline regression.

Figure 2: Placebo Test on Night-time Light Intensity



2) Reducing study sample. By excluded municipalities and remote area cities to control the possible outcome bias caused by special sample cases. As shown in Table 5, after adding control variables, the estimated coefficient of policy dummy variable still positively significant at 1% level with no dramatically fluctuating on its value, which again indicates robustness of the benchmark conclusion.

Table 5: Regression Results 2

Variable	Tertiary Share* Night-time light intensity	Tertiary Share* Night-time light intensity
	(1)	(2)
Night-time Economy Policy	0.317**	0.404***
	(0.127)	(0.147)
City- and year-fixed effects	4736	4736
Industrial Structure	Yes	Yes
Population density and road traffic	-	Yes
Number of Observations	4736	4736
Adjusted R^2	0.846	0.846

Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

5.4 Mechanism Tests

From the solid empirical evidence we obtained before, night-time economy policy have a significantly positive effect on city's night-time economy. Additionally, the importance of developing night-time economy goes beyond simple commercial activities, reflecting a multiplier effect on driving the progress of tourism, culture, consumption, even the economy as a whole. Table 6 reports the regression outcome of night-time economy policy effect on GDP. Regardless of adding control variables, the coefficient of policy variable in column (2) is significantly positive at 5% level, suggesting that night-time economy policy can improve the expansion of the aggregate economy. However, we still need to determine its influence mechanisms behind this phenomenon.

As mentioned earlier, the development of night-time tourism, as a representative industry at the heart of the night-time economy, has the effect of driving the progress of related sectors, and the stage of the local night-time tourism industry growth reflects the level of night-time infrastructure and supporting services in a region from another aspect. On the other hand, night-time economic development is essential to stimulate consumption and expand domestic demand. The impact of night-time economy policies on the retail sales of consumer goods indicates the change in people's willingness to consume at night. Meanwhile, as a necessary tool to boost the night-time economy, strengthening infrastructure, in turn, supports the development of the whole economy. For these reasons, the mechanism will be tested from three perspectives: the level of tourism development, retail sales of consumer goods, and city infrastructure construction.

In Table 7, from column (3) and (4) we can see, the coefficients for policy effect on logarithm of Tourism Revenue is significantly positive on 1% level, however, is not significant for the logarithm of Tourism Population. On the one hand, the urban tourism expenditure is more susceptible to fluctuations due to the local real situation of tourism, and is more clearly affected by policy advocacy; Take Zibo as an example. From the data from Baidu index[9], during the 2024 Qingming holiday, Baidu users' searches for Zibo-related information exceeded one million, representing an increase of more than 200% year-on-year; Benefiting from Zibo Tourism Bureau's quick response to trending topics and the

[9] Baidu Index: https://index.baidu.com/v2/main/index.html#/trend/淄博?words=淄博

government's efforts in stabilizing prices and enhancing the reception capacity of tourist attractions, the popularity of Zibo barbecue has continued to grow. These series of actions has successfully sustained tourists' willingness to stay in Zibo, and their perception of this city has shifted from a transit station within Shandong province to a tourism city, willing to extend their length of stay. On the other hand, for most people, travel is a medium to long-term plan, with trips being constrained by factors such as public holidays. Therefore, even if there is a strong desire to travel in the short term, it is difficult to increase the number of travelers within a short period significantly.

Table 7: Mechanism Test 1

Variable	ln Domestic Travel Population	ln Domestic Travel Population	ln Domestic Travel Revenue	ln Domestic Travel Revenue
	(1)	(2)	(3)	(4)
Night-time Economy Policy	-0.217	-1.751	0.838**	5.051***
	(0.290)	(1.173)	(0.409)	(1.487)
City- and year-fixed effects	Yes	Yes	Yes	Yes
Industrial structure	Yes	Yes	Yes	Yes
Population density and road traffic	-	Yes	-	Yes
Number of Observations	5453	5453	5453	5453
Adjusted R^2	0.612	0.612	0.348	0.350

Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

In Table 8, from column (2) we can see, the coefficients for policy effect is not significant for the logarithm of Retail Sales of Consumer Goods. Due to the popularity of mobile phones and the Internet, residents are no longer bound by the constraints of time and space and have the flexibility to engage in consumption behaviour at any time and place. Likewise, People’s consumption habitats are shaped by multiple factors and cost lengthy time to change, challenging to be remodeled by single policy in short period.

Table 8: Mechanism Test 2

Variable	ln Total Retail Selling	ln Total Retail Selling
	(1)	(2)
Night-time Economy Policy	0.158	0.0944
	(0.174)	(0.308)
City- and year-fixed effects	Yes	Yes
Industrial structure	Yes	Yes
Population density and road traffic	-	Yes
Number of Observations	5411	5411
Adjusted R^2	0.959	0.959

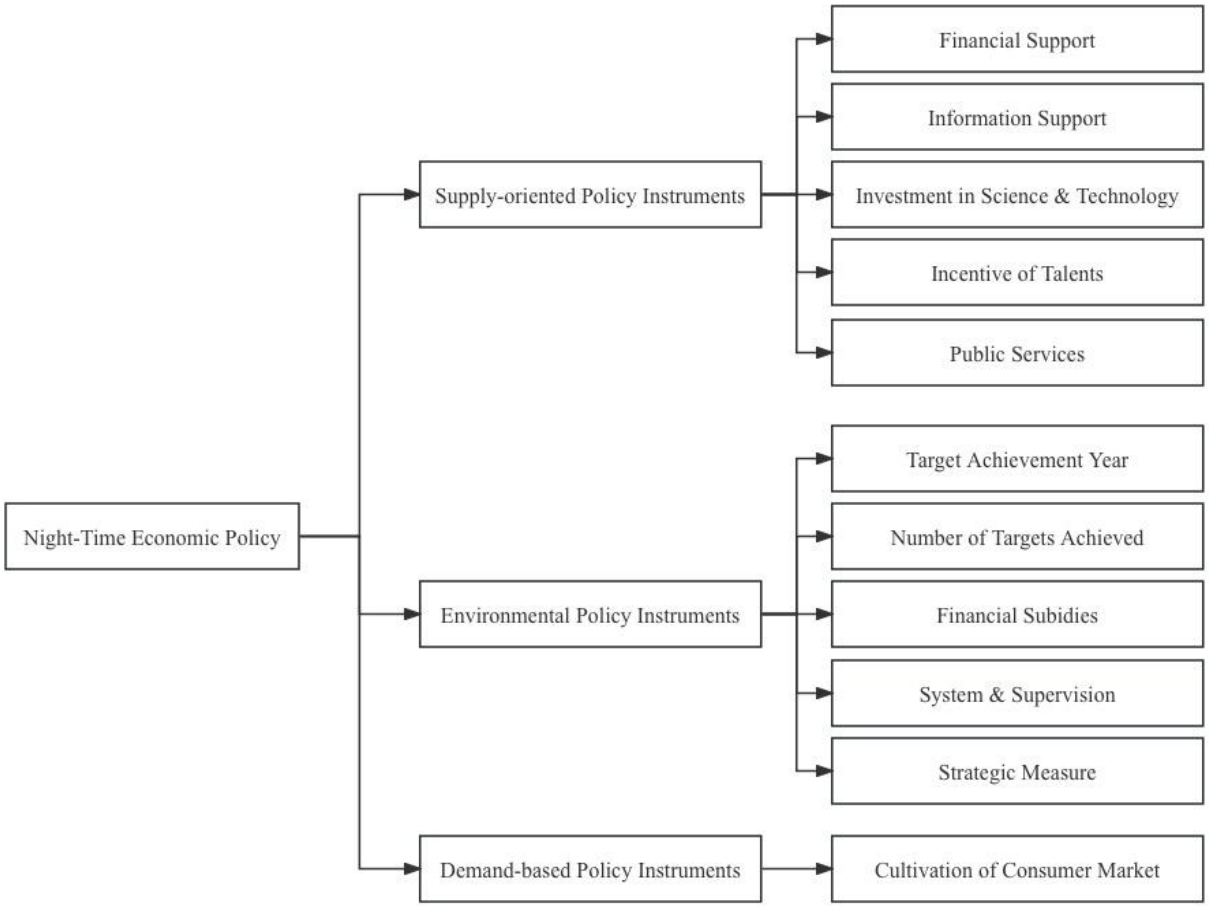
Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

5.5 Heterogeneity Tests

Take the considerations that the effect of night-time economy policy effect may heterogeneous due to the selection of different policy instruments, this paper will further analyse the possible heterogeneous effect on urban night-time economic development from the perspective of different policy instruments choices.

According to the classification criteria of Rothwell and Zegveld(1985), depending on the focus of the policy instruments, there are mainly three kinds of them: supply-oriented, environmental and demand-based policy instruments. This categorization methodology perceives the government as the creator of the developmental condition, underlining its predominant role in macro-regulation. This view coincides with the current state of the night-time economic policy landscape in China. Specifically, Supply-oriented policy instruments covers the direct investment from government, which mainly includes financial support, human resources, technology skills, public services and regulations; Environmental policy instruments stress the importance of government planning, innovation rewards and other fields; Demand-based policy instruments covers the measures helps to foster market demand. Considering the policy document covered in the scope of the study and applying principles of non-redundancy and strong correlation, the measures that has been adopted within these documents were subsequently classified and the categorization framework is showed in Figure 3.

Figure 3: Policy Instrument Classification



The example of content analysis of the night-time economy policy texts is shown in Table 9.

Table 9: Example of Policy Instruments

Policy Document	Measures Taken	Category	Policy Instrument
Qingdao Municipality's notice on the implementation opinions for expediting the development of the unexplored night economy	Relevant law enforcement departments should open a nighttime complaint hotline to accept and resolve consumer complaints in a timely manner.	Strategic Measure	Environmental Policy Instrument
Chongqing Municipal People's Government's viewpoints on fostering the night market economy	Night markets involving food business should have a person responsible for food safety and fire safety, and implement a stall hygiene responsibility system.	System and Supervision	Environmental Policy Instrument
General Office of Tianjin Municipal People's Government on the Implementation Opinions on Accelerating the Development of Night-time	Developing criteria for and identifying the city's model night-time economy neighborhoods, and awarding the title of model night-time economy neighbourhood to those that meet the criteria.	Incentive of Talents	Supply-oriented Policy Instrument

Economy			
Implementation Opinions of the General Office of Jinan Municipal People's Government on Promoting the Development of Night-time Economy	Promote the establishment of a social co-management pattern for consumer rights protection and smooth consumer complaint channels	Public Services	Supply-oriented Policy Instrument
Implementation Opinions of Nanjing Municipal Government on Accelerating the Development of Night-time Economy	Make 'Night in Jinling' a nationally renowned brand of night-time economy.	Consumer Market Cultivation	Demand-based Policy Instrument

In order to avoid errors in the regression results due to the omission of variables in the regression process caused by multi-collinearity, and to achieve effective differentiation between the roles of three kinds of policy instruments, the promotion effect of each policy instrument in the development of the night-time economy was obtained by analyzing the scope of coverage of each policy instrument, that is to calculate the coverage of the measures taken in the policy documents to each policy instrument.

The regressions results for each policy instruments are demonstrated in Table 10. From the outcomes of column (2), (4) and (6), supply-oriented policy instrument is significant at 1% level and environmental policy is significant at 10% level. The promoting effect also significantly stronger for the city who choose supply-oriented policy instruments.

Table 10: Heterogeneity Test

Variable	Tertiary Share* Night-time light intensity	Tertiary Share* Night-time light intensity	Tertiary Share* Night-time light intensity	Tertiary Share* Night-time light intensity	Tertiary Share* Night-time light intensity	Tertiary Share* Night-time light intensity
	(1)	(2)	(3)	(4)	(5)	(6)
Supply-oriented Policy Instrument	0.664***	1.275***				
	(0.232)	(0.454)				
Environmental Policy Instrument			0.628***	0.605*		
			(0.206)	(0.325)		

Demand-based Policy Instrument					0.387***	0.146
					(0.143)	(0.302)
City- and year-fixed effects	Yes	Yes	Yes	Yes	Yes	Yes
Industrial Structure	Yes	Yes	Yes	Yes	Yes	Yes
Population density and road traffic	-	Yes	-	Yes	-	Yes
Number of Observations	5422	5422	5422	5422	5422	5422
Adjusted R^2	0.833	0.836	0.832	0.835	0.832	0.835

Standard errors in parentheses; * $p < 0.1$, ** $p < 0.05$, *** $p < 0.01$

This phenomenon may be attributed to that the cultivation of the consumer market requiring more time and financial investment compared to direct financial subsidies to the merchants or incentives for talent, thereby making it challenging to manifest substantial effects in the short run. This suggests that during the evolution of the night-time economy, nurturing the consumer market is a task of longevity. Thus, maximizing the synergy of policy tools can only be achieved through persistent analysis of consumer preferences, incorporating local development characteristics, and making continual dynamic adjustments along with reasonable optimization of these policy tools.

6. Conclusion and Discussion

This paper examines the impact of the enactment of night-time economy policies on the development of urban night-time economy based on the night-time lighting intensity data of prefecture-level cities and the related matched data of night-time economy policies from 2014 to 2021. The study reveals that: ① The enactment of night-time economy policies can significantly promote the development of the city night-time economy, though this effect is noticeably delayed; ②By examining the impacts of tourism, retail sales of consumer goods and the level of infrastructure, it is found that the effects of the policies are mainly reflected

in the promotion of the development of the local tourism industry, and lacking in the incentive impacts on the retail sales of consumer goods and infrastructure construction; ③ Taking into account the heterogeneous effect due to different choice of policy instruments, this study further analyses the impact of three kinds of policy instruments covered by the policy documents in the study interval. The results show that environmental and supply-side policy instruments have a stronger promotional effect on the development of the urban night-time economy, which would be the focus of the government's inclination in resource allocation. Based on the above research results, this paper proposes the following policy insights:

① Give early performance to the macro-guiding role of the government to promote the healthy development of the night-time economy. China's night-time economy development suffers from insufficient quality supply, lagging in service facilities, and other problems. It is urgent to give full play to the leading role of policy guidance to regulate and guide the development mode of the urban night-time economy to satisfy the people's growing demands for physical and cultural needs; ② Rationally balancing the contradiction and consistency between the short-term and the long-term goals. From the perspective of the time duration of the role of the night economy policy, the formulation of policy needs to on the basis of current night-time economy situation, according to the development goal in different time period to determine the appropriate priorities. Meanwhile, meeting the requirements of long-term sustainable development, to ensure that short-term input stability has been achieved in the premise of long term development goals; ③ Scientific choice of policy tools, strengthen the co-operations between the policy tools. On the one hand, the integral layout of policies should be promoted, and the organic collaboration between various elements should be improved. On the other hand, it is necessary to promptly determine the degree of match between policy tools and the current night-time economic development and to adjust the choice of policy tools in a time frame by reality to meet the actual requirements of the night-time economic development.

Lastly, it is important to note that this paper provides some informative experience for exploring how night-time economy policies affect the regional economic development. Future research could further deepen its understanding of the impact of enacting night-time

economy policies on the performance of different night-time economy areas. For example, the impact of the enactment of night-time economy policies on improving logistics industry could be explored. The classification of night-time economic policy tools in this paper contains some limitations, and different classification criteria can be replaced in the future to investigate better the impact of policy tools on the development of the night-time economy. Due to data availability, this study fails to include night-time economy policies from 2022 to 2023, thus failing to discuss the role of the night-time economy in contributing to the overall economic recovery in the post-pandemic era. These are directions that deserve further refinement and depth in subsequent studies.

Reference

Roberts, M. and Eldridge, A., 2012. Planning the night-time city. Routledge.

Ashton, K., Roderick, J., Parry Williams, L. and Green, L., 2018. Developing a framework for managing the night-time economy in Wales: a health impact assessment approach. Impact assessment and project appraIsal, 36(1), pp.81-89.

Bianchini, F., 1995. Night cultures, night economies. Planning Practice & Research, 10(2), pp.121-126.

Brands, J., Schwanen, T. and Van Aalst, I., 2015. Fear of crime and affective ambiguities in the night-time economy. Urban Studies, 52(3), pp.439-455.

Bromley, R., Thomas, C. and Millie, A., 2000. Exploring safety concerns in the night-time city: revitalising the evening economy. The Town Planning Review, pp.71-96.

Cao, X., Hu, Y., Zhu, X., Shi, F., Zhuo, L. and Chen, J., 2019. A simple self-adjusting model for correcting the blooming effects in DMSP-OLS nighttime light images. Remote sensing of environment, 224, pp.401-411.

Chang, J. and Hui Chiang, C., 2006. Segmenting American and Japanese tourists on novelty-seeking at night markets in Taiwan. Asia Pacific Journal of Tourism Research, 11(4), pp.391-406.

Chen, Z., Yu, B., Yang, C., Zhou, Y., Qian, X., Wang, C., Wu, B. and Wu, J., 2020. An extended time-series (2000–2018) of global NPP-VIIRS-like nighttime light data from a cross-sensor calibration. Earth System Science Data Discussions, 2020, pp.1-34.

Crawford, A. and Flint, J., 2009. Urban safety, anti-social behaviour and the night-time economy. Criminology & Criminal Justice, 9(4), pp.403-413.

Doll, C.N., Muller, J.P. and Morley, J.G., 2006. Mapping regional economic activity from night-time light satellite imagery. Ecological Economics, 57(1), pp.75-92.

Eldridge, A., 2010. The urban renaissance and the night-time economy: who belongs in the city at night?. In Social sustainability in urban areas (pp. 183-198). Routledge.

Eldridge, A., 2021. Strangers in the night: nightlife studies and new urban tourism. In Tourism and the Night (pp. 52-65). Routledge.

Elvidge, C.D., Hsu, F.C., Baugh, K.E. and Ghosh, T., 2014. National trends in

satellite-observed lighting. Global urban monitoring and assessment through earth observation, 23, pp.97-118.

Fadly, D., 2020. Greening industry in Vietnam: Environmental management standards and resource efficiency in SMEs. Sustainability, 12(18), p.7455.

Flanagan, K., Uyarra, E. and Laranja, M., 2011. Reconceptualising the 'policy mix'for innovation. Research policy, 40(5), pp.702-713.

Füller, H., Helbrecht, I., Schlüter, S., Mackrodt, U., van Gielle Ruppe, P., Genz, C., Walthall, B. and Dirksmeier, P., 2018. Manufacturing marginality.(Un-) governing the night in Berlin. Geoforum, 94, pp.24-32.

Gallan, B., 2015. Night lives: Heterotopia, youth transitions and cultural infrastructure in the urban night. Urban Studies, 52(3), pp.555-570.

Gaston, K.J., Bennie, J., Davies, T.W. and Hopkins, J., 2013. The ecological impacts of nighttime light pollution: a mechanistic appraisal. Biological reviews, 88(4), pp.912-927.

Giang, M.H., Trung, B.H., Yoshida, Y., Xuan, T.D. and Que, M.T., 2019. The causal effect of access to finance on productivity of small and medium enterprises in Vietnam. Sustainability, 11(19), p.5451.

Hadfield, P., 2015. The night-time city. Four modes of exclusion: Reflections on the Urban Studies special collection. Urban Studies, 52(3), pp.606-616.

Hayward, K. and Hobbs, D., 2007. Beyond the binge in 'booze Britain': Market-led liminalization and the spectacle of binge drinking. The British journal of sociology, 58(3), pp.437-456.

Heath, T., 1997. The twenty-four hour city concept—A review of initiatives in British cities. Journal of Urban Design, 2(2), pp.193-204.

Hobbs, D., Lister, S., Hadfield, P., Winlow, S. and Hall, S., 2000. Receiving shadows: governance and liminality in the night-time economy1. The British Journal of Sociology, 51(4), pp.701-717.

Hobbs, D., Winlow, S., Hadfield, P. and Lister, S., 2005. Violent hypocrisy: Governance and the night-time economy. European journal of criminology, 2(2), pp.161-183.

Hollands, R. and Chatterton, P., 2003. Producing nightlife in the new urban entertainment

economy: corporatization, branding and market segmentation. International Journal of Urban and Regional Research, 27(2), pp.361-385.

Hollands, R., 2002. Divisions in the dark: youth cultures, transitions and segmented consumption spaces in the night-time economy. Journal of youth studies, 5(2), pp.153-171.

Hu, W., Wu, H. and Wan, W., 2022. Decoding the Multidimensional Structuring of Urban Poles of Growth of Nighttime Economics—An Inter-Discipline Study in Lanzhou City, China, Based on Geomodeling and Big Data. Sustainability, 15(1), p.245.

黄金川, 黄武强 and 张煜, 2011. 中国地级以上城市基础设施评价研究 (Doctoral dissertation).

Jiang, Y. and Hong, F., 2023. Examining the relationship between customer-perceived value of night-time tourism and destination attachment among Generation Z tourists in China. Tourism Recreation Research, 48(2), pp.220-233.

江威, 何国金, 刘慧婵 and 倪愿, 2018. 利用 DMSP/OLS 夜间灯光影像模拟中国经济参量. 遥感信息, 33(1), pp.29-35.

金建清 and 范克危, 2000. 城市基础设施评价的一种方法. 郑州大学学报: 自然科学版, 32(1), pp.34-37.

Kypri, K. and Livingston, M., 2020. Incidence of assault in Sydney, Australia, throughout 5 years of alcohol trading hour restrictions: controlled before-and-after study. Addiction, 115(11), pp.2045-2054.

Letu, H., Hara, M., Yagi, H., Naoki, K., Tana, G., Nishio, F. and Shuhei, O., 2010. Estimating energy consumption from night-time DMPS/OLS imagery after correcting for saturation effects. International journal of remote sensing, 31(16), pp.4443-4458.

Levin, N., Kyba, C.C., Zhang, Q., de Miguel, A.S., Román, M.O., Li, X., Portnov, B.A., Molthan, A.L., Jechow, A., Miller, S.D. and Wang, Z., 2020. Remote sensing of night lights: A review and an outlook for the future. Remote Sensing of Environment, 237, p.111443.

Li, G., Hu, Z. and Cao, J., 2018. Institutional change and tourism economic growth: policy evaluation of replacing the TB with the TDC based on the double difference method. Tourism Tribune, 33(1), pp.13-24.

Li, M., Tu, W. and Lu, F., 2022. Sensing the nighttime economy–housing imbalance from a mobile phone data perspective: A case study in shanghai. Remote Sensing, 14(12), p.2738.

Lin, M.L. and Fearn, K.T., 2003. The provisional license: nighttime and passenger restrictions—a literature review. Journal of safety research, 34(1), pp.51-61.

Lovatt, A. and O'Connor, J., 1995. Cities and the night-time economy. Planning Practice & Research, 10(2), pp.127-134.

Lu, H., Zhang, M., Sun, W. and Li, W., 2018. Expansion analysis of Yangtze river delta urban agglomeration using DMSP/OLS nighttime light imagery for 1993 to 2012. ISPRS International Journal of Geo-Information, 7(2), p.52.

毛中根, 龙燕妮 and 叶胥, 2020. 夜间经济理论研究进展. 经济学动态, (2), pp.103-116.

Miller, P., Droste, N., De Groot, F., Palmer, D., Tindall, J., Busija, L., Hyder, S., Gilham, K. and Wiggers, J., 2016. Correlates and motives of pre-drinking with intoxication and harm around licensed venues in two cities. Drug and alcohol review, 35(2), pp.177-186.

Monaghan, L.F., 2002. Regulating 'unruly'bodies: work tasks, conflict and violence in Britain's night-time economy1. The British journal of sociology, 53(3), pp.403-429.

Montgomery, J., 1990. Cities and the art of cultural planning. Planning practice and research, 5(3), pp.17-24.

Morano, P., Guarini, M.R., Tajani, F. and Anelli, D., 2020, July. Sustainable redevelopment: The cost-revenue analysis to support the urban planning decisions. In International Conference on Computational Science and Its Applications (pp. 968-980). Cham: Springer International Publishing.

Nofre, J., Giordano, E., Eldridge, A., Martins, J.C. and Sequera, J., 2018. Tourism, nightlife and planning: challenges and opportunities for community liveability in La Barceloneta. Tourism Geographies, 20(3), pp.377-396.

Olt, G., Smith, M.K., Csizmady, A. and Sziva, I., 2021. Gentrification, tourism and the night-time economy in Budapest's district VII–the role of regulation in a post-socialist context. In Tourism and the Night (pp. 24-36). Routledge.

Philpot, R., Liebst, L.S., Møller, K.K., Lindegaard, M.R. and Levine, M., 2019. Capturing violence in the night-time economy: A review of established and emerging

methodologies. Aggression and violent behavior, 46, pp.56-65.

Ritzer, G., 2001. Explorations in the sociology of consumption: Fast food, credit cards and casinos. Explorations in the Sociology of Consumption, pp.1-272.

Roberts, M. and Eldridge, A., 2012. Planning the night-time city. Routledge.

Roberts, M. and Gornostaeva, G., 2007. The night-time economy and sustainable town centres: dilemmas for local government. International Journal of Sustainable Development and Planning, 2(2), pp.134-152.

Roberts, M., 2006. From 'creative city'to 'no-go areas'–The expansion of the night-time economy in British town and city centres. Cities, 23(5), pp.331-338.

Rowe, D. and Bavinton, N., 2011. Tender for the night: after-dark cultural complexities in the night-time economy. Continuum, 25(6), pp.811-825.

Rowe, D., Stevenson, D., Tomsen, S.A., Bavinton, N. and Brass, K., 2008. The City after dark: Cultural planning and Governance of the Night-time Economy in Parramatta.

Smeds, E., Robin, E. and McArthur, J., 2020. Night-time mobilities and (in) justice in London: Constructing mobile subjects and the politics of difference in policy-making. Journal of transport geography, 82, p.102569.

Smith, O. and Raymen, T., 2018. Deviant leisure: A criminological perspective. Theoretical Criminology, 22(1), pp.63-82.

Sun, L., and Abraham, S., 2021. Estimating dynamic treatment effects in event studies with heterogeneous treatment effects. Journal of econometrics, 225(2), 175-199.

Sutton, P.C. and Costanza, R., 2002. Global estimates of market and non-market values derived from nighttime satellite imagery, land cover, and ecosystem service valuation. Ecological economics, 41(3), pp.509-527.

Sutton, P.C., 2003. An empirical environmental sustainability index derived solely from nighttime satellite imagery and ecosystem service valuation. Population and Environment, 24, pp.293-311.

Talbot, D., 2016. Regulating the night: Race, culture and exclusion in the making of the night-time economy. Routledge.

Tiesdell, S. and Slater, A.M., 2006. Calling time: Managing activities in space and time in the evening/night-time economy. Planning Theory & Practice, 7(2), pp.137-157.

Turner's, R., 2005. A study in Old Crompton street in London's Soho. J. Urban Des, 10, pp.171-193.

王兰兰, 廖嘉玮 and 徐颖, 2021. 基于政策工具的中国夜间经济政策研究. 资源开发与市场, 4, pp.452-457.

王琪, 袁涛 and 郑新奇, 2013. 基于夜间灯光数据的中国省域 GDP 总量分析. 城市发展研究, 20(7), pp.44-48.

王昀 and 陶建斌, 2019. 基于 DMSP/OLS 夜光数据的中国省域经济发展时空变化. 地理空间信息, 17(11), pp.75-79.

Wolifson, P. and Drozdzewski, D., 2017. Co-opting the night: the entrepreneurial shift and economic imperative in NTE planning. Urban policy and research, 35(4), pp.486-504.

徐康宁, 陈丰龙 and 刘修岩, 2015. 中国经济增长的真实性: 基于全球夜间灯光数据的检验. 经济研究, 50(9), pp.17-29.

Yan, G., Zou, L. and Liu, Y., 2024. The Spatial Pattern and Influencing Factors of China's Nighttime Economy Utilizing POI and Remote Sensing Data. Applied Sciences, 14(1), p.400.

Yeo, S.J. and Heng, C.K., 2014. An (extra) ordinary night out: Urban informality, social sustainability and the night-time economy. Urban Studies, 51(4), pp.712-726.

Yeo, S.J., Ho, K.C. and Heng, C.K., 2016. Rethinking spatial planning for urban conviviality and social diversity: a study of nightlife in a Singapore public housing estate neighbourhood. TPR: Town Planning Review, 87(4).

余构雄, 2021. 夜间经济专项政策研究——基于内容分析法. 当代经济管理, 43(10), pp.24-30.

Yu, M., Guo, S., Guan, Y., Cai, D., Zhang, C., Fraedrich, K., Liao, Z., Zhang, X. and Tian, Z., 2021. Spatiotemporal heterogeneity analysis of Yangtze River Delta urban agglomeration: Evidence from nighttime light data (2001–2019). Remote Sensing, 13(7), p.1235.

张文娟, 明庆忠 and 刘宏芳, 2023, '夜间经济政策对地区旅游经济增长的影响——基于多时点双重差分模型的实证分析', 广西社会科学 / Guangxi Social Sciences, (6), pp. 110–119.

Zhang, Z., Li, H. and Cao, Y., 2022. Research on the coordinated development of economic

development and ecological environment of nine Provinces (regions) in the Yellow River Basin. Sustainability, 14(20), p.13102.

赵建梅 and 祝雨翔, 2023, 市场化进程与地区经济不均衡——基于夜间灯光数据的分析. 中央财经大学学报, (4), pp.105-117.

Zmyslony, P. and Pawlusiński, R., 2020. Tourism and the night-time economy: the perspective article. Tourism Review, 75(1), pp.194-19