



Impact of semi-obnoxious facilities and urban renewal strategy on subdivided units

Eddie C.M. Hui^a, Cong Liang^{b,*}, Tsz Leung Yip^b

^a Department of Building and Real Estate, The Hong Kong Polytechnic University, China

^b Department of Logistics and Maritime Studies, The Hong Kong Polytechnic University, China

ARTICLE INFO

Keywords:

Subdivided units (SDUs)
Semi-obnoxious facilities
Spatial-temporal model
Housing market
Urban renewal

ABSTRACT

This paper presents pioneering research investigating the effects of semi-obnoxious facilities on subdivided units (SDUs) via a spatial econometric method. It overcomes the shortcomings of previous studies by employing a spatial-temporal model with the best fit. The paper also considers the effects of the Hong Kong Urban Renewal Authority's proposed urban renewal strategy on SDUs. The study's key findings are in following folds. Initially, the tenants of SDUs pay 39% more in rent than the tenants of market rate housing. Subsequently, accessibility of schools is a primary concern for SDU residents. Thirdly, SDU tenants are willing to live close to disamenities in exchange for lower rent and convenience services provided by semi-obnoxious facilities. Last but not least, proximity to urban rehabilitation projects increase the rehabilitation chances of SDUs. These findings have important implications for urban planners and policymakers in wider geographical areas.

1. Introduction

Subdivided units (SDUs) are special housing units created from domestic flats that have been subdivided into two or more smaller units for rental purposes (CSD, 2016a). According to a recent report released by the Hong Kong Government (CSD, 2016a), old residential buildings in Kowloon account for 58.4% of the SDU market. The number of people living in SDUs accounts for nearly 2.5% of the Hong Kong population, totalling roughly 171,300 in 2013 (Ma, 2014). The majority of SDU residents are members of low-income families, new immigrants, the unemployed or single elderly people (CSD, 2015, 2016a). One of the major forces driving people into SDUs is the inadequate public housing supply in Hong Kong (Fung, 2014). The average wait for public housing allocation currently stands at 4.1 years (HKHA, 2016). Another driver of SDU rentals is cost, with the rents on private flats having risen by almost 50% from 2011 to 2015 (RVD, 2016). In the same period, average incomes increased by only roughly 20% (CSD, 2016b). The combination of a lack of public housing and high rents in the private sector is thus pushing those on low incomes into SDUs.

Housing is a basic human need, and has been identified as a determinant of health and quality of life (Braubach & Fairburn, 2010). SDU tenants face potential health and safety risks arising from both structural problems within the unit and poor external environmental quality. The major internal risk/safety issue stems from the original non-structural partition walls being removed and new ones being

erected, the installation of new toilets and kitchens, and the addition or alteration of internal drains (CSD, 2016a). Poor external environmental quality arises from the overcrowding neighbourhoods in which SDUs are generally located, with many located in the vicinity of public facilities such as hospital, police station, fire service station, hawker bazaars, public markets and public refuse collection points. Though living closer to such public facilities enables tenants in SDUs to have better access the public services, higher walkability and active living, yet the proximity from the SDUs to public facilities generate some undesirable disamenities to the SDUs tenants such as noise annoyance, poor sanitary conditions and potential exposure to contagious disease. Such public facilities generate both desired and undesired effects to the public are called semi-obnoxious facilities (Ohsawa & Tamura, 2003; Song, Morrison, & Ko, 2013). As Hong Kong follows a high-rise high-density city development, SDUs are distributed in high clustered areas with high density population and aging buildings, which are closer to the public facilities than tenants of other types of accommodation. As a result, SDU residents are exposed to disamenities for longer periods than the residents in other areas in Hong Kong.

To deal with the internal risk of SDUs, Urban Renewal Authority (URA) – one of Hong Kong government agents – adopts a large scale of building rehabilitation in urban decays areas. The rehabilitation projects mainly cover the works of concrete repairing and building improvements, which not only wipe out some safety risks of SDUs, but also improve built environment. On the other hand, the external

* Corresponding author.

E-mail addresses: bscmhui@polyu.edu.hk (E.C.M. Hui), liang.cong@hotmail.com (C. Liang), t.l.yip@polyu.edu.hk (T.L. Yip).

environmental quality of SDUs, including the amenities and disamenities of proximity semi-obnoxious facilities excerpt great fascination upon scholars and urban planners. Hong Kong is a good place to conduct the research for the tenants in high-rise high-density areas because the Hong Kong city boasts with high density of population, short supply of land and urban decays with aging buildings. However, there are very few previous studies investigation of relationship between the willingness to pay of tenants and proximity of semi-obnoxious facilities in urban decays areas.

The study reported herein has been carried out to fill this knowledge gap. It has two main objectives: to investigate the effects of semi-obnoxious facilities, including amenities and disamenities on SDUs and to explore the influence of urban rehabilitation projects on SDUs. Investigation of the first objective enables an understanding of the difficulties of living in an SDU, whereas that of the second provides information on the SDU-related effects of the URA's urban renewal strategy (URA, 2011). A spatial model incorporating both spatial and temporal information has been adopted to investigate the spillover effects of semi-obnoxious facilities.

The consideration of effects of semi-obnoxious facilities and URA's urban renewal strategy would enhance the housing literature in several ways. First, we cover a broader range of semi-obnoxious facilities including hospital, police station, fire service station, hawkers bazaars, public markets, which are unaddressed in the previous literature yet. Second, we adopt spatial-temporal model in this paper, which well incorporates two-dimensional information (e.g. space and time) of property transactions. Third, the empirical results in this paper do not just provide some information for Hong Kong or Asian cities only. Instead, the empirical findings in this paper provide further implications for urban planners and policy makers in wider geographical areas. The planning and allocation of semi-obnoxious facilities is a vital problem of all high-density cities worldwide but the findings from Hong Kong are applicable to other high-density cities.

The remainder of the paper is organised as follows. Following this brief introduction, Section 2 presents a review of the literature on effects of semi-obnoxious facilities in the housing context. Section 3 then addresses the urban rehabilitation in Hong Kong. Section 4 describes the data sample and study area. Section 5 illustrates the research method. Section 6 discusses the study's results, whilst Section 7 draws conclusions.

2. Literature review

The impact of disamenities on property value has long been a topic of research interest (Morello-Frosch, 2002; Page, 1995). In particular, the topics as regards disamenities are classified into the two groups: obnoxious facilities and semi-obnoxious facilities (Golpayegani, Fathali, & Moradi, 2017; Song et al., 2013; Yapicioglu, Smith, & Dozier, 2007).

Obnoxious facilities are also known as undesired facilities, which generate the health risk to the residence nearby. Many previous studies clustered in investigating the impact of the toxic and hazardous waste on housing value. For example, McCluskey and Rausser (2003) identified a lower premium for housing in the vicinity of a Superfund site, whereas Greenstone and Gallagher (2008) found Superfund site proximity to exert only trivial effects on residential property values and rental rates, and Kiel and Williams (2007) reported the effects to be largely localized. Mhatre (2009) used spatial econometric models to consider the effects on property values in Miami-Dade County, Florida before and after the remediation of Superfund sites. The results indicated that low-income minority groups were more likely than other demographic groups to live close to contaminated Superfund sites.

In addition to the obnoxious facilities, a number of public facilities are called semi-obnoxious facilities (e.g. fire station, police station, hospital) providing desirable and undesirable effects to the neighbouring residents (Ohsawa & Tamura, 2003; Song et al., 2013). However, semi-obnoxious facilities are barely discussed in housing studies

possibly due to the tendency of dichotomising facilities into desirable or undesirable ones (Peng & Chiang, 2015). Exceptions include the research of Peng and Chiang (2015), Li et al. (2016) and Dronyk-Trosper (2017).

In the study of Peng and Chiang (2015), quantile regression is applied to examine the potentially effects of hospital spline distance on quantiles of property prices in Taipei city. They found that people are not willingness to pay for the properties if the properties are either too close (0–500 m) or too far (over 2,000 m) from the hospital. For the investors/buyers, they are more likely to pay for the properties where the distance between property and hospital is between 500 m–1000 m. Their findings also indicated that living too much closer to the hospital definitively brings about inconvenience such as ambulance siren noise, traffic congestion, the potential risk of medical waste disposal, and the potential exposure to contagious disease.

Another concern is the impact of semi-obnoxious facilities on property value. In the research work of Li et al. (2016), they employed the assessed property value data and spatial models to examine preferences of housing investors/buyers for various amenities and accessibility factors in Salt Lake County. They found that the distance to fire stations has significantly negative influences on house values. Such reason would be probably ascribed to fire stations are supported by local revenue in Utah. High-income group incline to live closer to the police station and fire station, as they are able to receive more attention from public service providers. They also found that hospital performs a negative influence on house values. They explained that high-value homes are more prevalent in the suburbs, which are far away from large hospitals in urban centre.

Similarly, Dronyk-Trosper (2017) examined the effect of distance on residential property values of three different types of semi-obnoxious facilities (e.g. fire station, police station and hospital) in the state of Florida. The study suggested that such three semi-obnoxious facilities provide both amenity and disamenity effects on local housing values. Specifically, the researcher disclosed that housing value would be reduced if the properties are located either too close or at extremely large distance to the three semi-obnoxious facilities, leading to lower property tax.

In summary, there are dearth of studies concerning about the impact of semi-obnoxious facilities on housing value. The above exceptional studies mainly consider three semi-obnoxious facilities (e.g. fire stations, police stations, and hospitals), which are ubiquitous to public. Distinguished to the above studies focus on US or city of Taipei, Hong Kong follows high-rise high-density city development due to the scarcity of land and its hilly topography (Cartier, 1997). In so doing, there are a great number of public facilities make themselves as semi-obnoxious facilities providing favourable and unfavourable aspects to the residents nearby. Such facilities include hawking bazaar, public market, public refuse collection points. Such facilities are of particular interest for the urban planners and policy makers as these semi-obnoxious facilities on one hand provide benefits and convenience for the residents/neighbourhood communities. On the other hand, these public facilities are considered to be detrimental to the housing value as the residents living adjacent to such semi-obnoxious facilities bear economic costs. On reviewing the impact of semi-obnoxious facilities on housing value, we have our first two hypotheses, in the high-rise high-density city:

H1. Benefit (expressed by rental price) among market-rate housing tenants is negatively related to the distance to semi-obnoxious facilities.

H2. Benefit (expressed by rental price) among SDU tenants is positively related to the distance to semi-obnoxious facilities.

3. Urban rehabilitation in Hong Kong

As Hong Kong adopts high-rise high-density city development strategy, residents in Hong Kong are able to enjoy the convenience and

Download English Version:

<https://daneshyari.com/en/article/6538338>

Download Persian Version:

<https://daneshyari.com/article/6538338>

[Daneshyari.com](https://daneshyari.com)