Chapter 6
Income Inequality, Urban Development and Smoking

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Abstract Neoliberal reforms have economically transformed China, increased income inequality and changed the nature of the built environment. This chapter first develops a conceptual framework for examining patterns of intra-urban change and their effects on health behaviour and health outcomes. Using this framework two major themes are addressed: the growth of income inequality and its association with health outcomes and smoking and ways in which the pattern of urban development has affected the social distribution of smoking and increased health inequalities. While the evidence is fragmentary, there is some suggestion that social differences in urban smoking are beginning to conform to those expected from the western diffusion model.

Keywords Income inequality · Migrant enclaves · Neoliberalism · New urban poverty · Pathways · Post-socialist housing transition · Smoking · Stigmatisation · Stress · Tunnel effect · Urban development

6.1 Introduction

Since the 1990s China has experienced unprecedented economic growth which raised its World Bank classification to an upper middle-income economy. This growth is most manifest in the remarkable change in the built environment of Chinese cities. In Shanghai, for example, the new global financial centre in Pudong stands in marked contrast to some remaining traditional 'hutong' neighbourhoods

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which, as in Beijing, have largely been eradicated unless they have been deemed necessary for heritage and tourism purposes. Underlying this physical and economic transformation have been profound socio-economic changes which, despite notable reductions in regional levels and differences in poverty, have been accompanied by marked increases in income inequality. This increase has been so persistent in the last two decades that China is now among the most unequal countries in the world (Jain-Chandra et al. 2018).

Smoking, along with other health behaviours, needs to be considered in the context of the neoliberal reforms that have altered patterns of income distribution and the urban fabric of China. With this in mind, this chapter first develops a conceptual framework for examining patterns of intra-urban change and their effects on health behaviour and health outcomes (Sect. 6.2). Using this framework two major themes are addressed. First we examine the growth of income inequality in China, its major dimensions and contributing factors (Sect. 6.3). We then consider the links between income inequality, health outcomes and smoking (Sect. 6.4). Given the neoliberal emphasis of the Chinese economy in recent decades, widening divisions between rich and poor come as no surprise, but, as Wan and Zhang (2006) first noted over a decade ago, there has been a lack of academic attention to the urban and health implications of such trends.

The second theme explores some of the different ways in which the pattern of Chinese urban development has contributed to smoking and increased health inequalities. Two particular questions are addressed: (1) within cities what particular urban socio-economic processes are likely to lead to an increased social concentration of smoking? (Sect. 6.5); (2) to what extent has increased urbanisation affected the social distribution of smoking? (Sect. 6.6) Is there any evidence that urban smoking patterns are beginning to conform to those expected from the western diffusion model? Because changes in health behaviour have not been central to research into either of these concerns, many of our comments are speculative, but highlight the need for more research into the links between changing urban environments, smoking and health. In order to understand the importance of these two issues, we first briefly provide a general framework for understanding the growth of urban inequality and its links to changes in the built environment and behavioural and health outcomes.

6.2 A General Framework on Urban Income Inequality, Urban Change and Health Outcomes

Income inequalities have increased in many parts of the world, leading to highly politicised debate concerning the link between these inequalities and poor health outcomes (Townsend and Davidson 1992; Wilkinson and Pickett 2011). Since the 1980s a voluminous literature has evolved on the links between the growth of state neoliberal policies and their social impacts, especially by theorists such as David

Harvey (1989) and Bob Jessop (1994) and more recently by researchers such as Brenner and Theodore (2002) and Storper (2016). Much of this work has focused on the impact of neoliberalism in deregulating markets, on the privatisation or marketisation of public services and on curbing union power in a variety of institutional settings. But it has also been highly ethnocentric, largely focusing on urban changes in more mature western economies with long histories of state intervention. Pinson and Journel (2016) are critical of the 'shallow attention' given to (other) 'contexts' that are equally deserving of analysis. There have also been a variety of theoretical and methodological debates, not only over the pathways linking increased inequality to health but also over the relative influence of the effects of absolute and relative inequality on health outcomes (Truesdale and Jencks 2016; Kragten and Rözer 2017).

Such debates are relevant to China which underwent its own economic reforms beginning in 1978. Typical of many other transition economies, the impacts of neoliberalism were manifest in the dismantling of former state enterprises, the deregulation of markets, an increased focus on marketisation and improved efficiency in productive sectors. The push for increased economic growth saw cutbacks in state support for public services, such as health care, with increased self-reliance increasingly replacing state support (Mullins-Owens 2015). These policies were not uniformly applied but affected rural regions to a greater extent than their urban counterparts. As shown in Fig. 6.1, such reforms led to adverse social consequences, particularly increased poverty and income inequality. While both had health and other social impacts (Yang et al. 2019a), it is only recently that increased attention has focused on the effects of income inequality on health behaviour.

It would, however, be a simplification to attribute adverse social outcomes purely to the impact of neoliberal policies. As Le Galès (2016) and others have noted, neoliberalism will not explain everything about the current transformation of urbanisation processes as cities may change for a variety of reasons, of which neoliberalism is only one. For example, urban change can also occur as a result of strategic policy actions which predate neoliberalism. In China the classic case is the *hukou* system, discussed in the previous chapter, which was a fundamental force in limiting state responsibility for migrant welfare in the face of rapid urbanisation (Lu and Wan 2014).

Nevertheless there is a close relationship between neoliberal reform and the nature of urban development. The partial dismantling of state monopolies, housing privatisation and the encouragement of an individualistic consumerist culture, for example, have all had impacts on health. In recent years there has been a renewed interest in the relationship between urbanisation-associated changes in patterns of human activity and lifestyles and the rise of chronic diseases such as cancer and diabetes (Gong et al. 2012; Miao and Wu 2016; Li and Wu 2016). Many studies have commented on the health penalties of urbanisation (Fang et al. 2009; Li et al. 2016; Hou et al. 2019), but apart from a focus on dietary change (Zhou et al. 2017) have seldom considered the impacts of urbanisation on smoking (Chen et al. 2018b), in particular how patterns of neighbourhood change may have an impact on the smoking prevalence of different social groups. Because neoliberalism is a social polarizing process, it might be expected that the negative effects of urban change

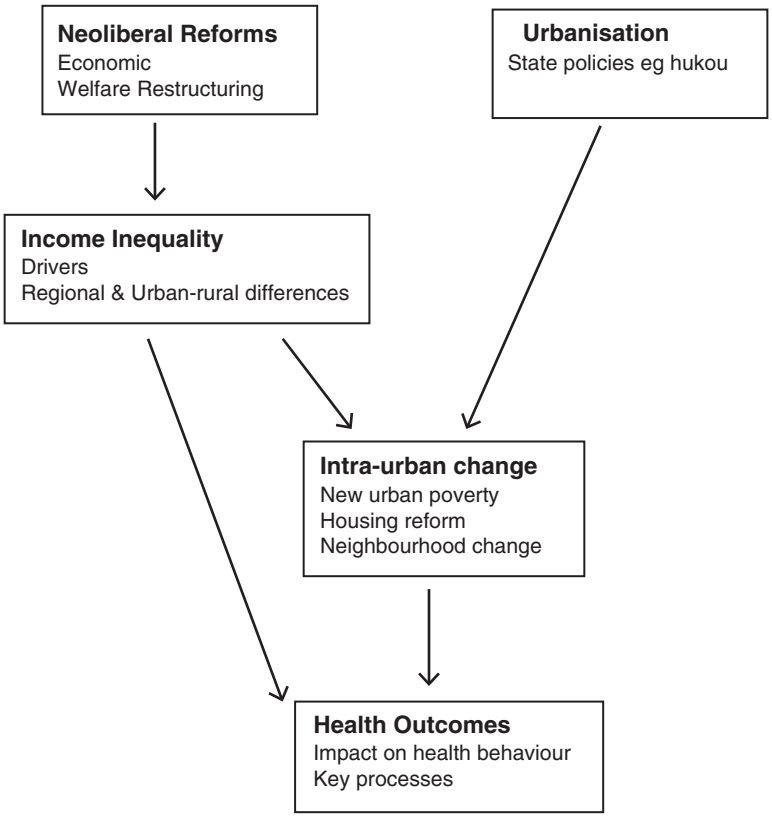

Fig. 6.1 Linkages between inequality, urban change and health outcomes. (Credit: Authors)

will have a greater impact on smoking prevalence of more disadvantaged groups, a pattern so common in the western world (Barnett et al. 2017). With these broader processes in mind, we now turn to an analysis of the growth of income inequality, internationally and in China and its health and smoking outcomes.

6.3 The Growth of Income Inequality

6.3.1 Global Trends

Research on income inequality and health is not new. Since the Black Report in the United Kingdom in the 1980s (Townsend and Davidson 1992), internationally a wealth of studies have documented the growth of health inequalities and noted the deleterious effects of globalisation, neoliberalism and increased income inequality upon health and other social outcomes. As a universal global issue, income

inequality's toll on health was initially highlighted particularly by the work of Richard Wilkinson and colleagues (Wilkinson and Pickett 2006, 2011) who showed that countries with more unequal income distributions had more adverse health and social outcomes. However, despite a considerable volume of research over the last few decades, knowledge of the mechanisms linking income inequality and health is still incomplete especially since, until recently (Anwar et al. 2017; Vincens et al. 2018; Massa et al. 2018; Odusanya and Agboola 2017; Gugushvili et al. 2020), most work has occurred in western countries.

There is some consensus that there are three pathways linking income inequality and health outcomes: social comparisons, disruption in social capital and lack of investment in public resources. Negative perceptions of social position may be reflected in anti-social behaviour, reduced civic participation, reduced trust and less social cohesion. The loss of social capital can be both detrimental in the sense that more socially isolated individuals may smoke more (Graham 1993) and protective in the sense that it plays an important part in social interactions and the formation of community identity. The latter may encourage increased smoking particularly in those communities trying to cope with higher levels of stress (Stead et al. 2001; Stubbs et al. 2017). Similarly lack of social resources may also have an impact. Neoliberal economic regimes prioritise economic growth and financial performance. One direct consequence of neoliberal positions in governments is austerity and the lack of public institutional resources (Abramovitz et al. 2014; Viens 2019).

6.3.2 The Growth of Income Inequality in China

The growth of urban inequality can be seen as a structural cause linked to the broader processes of globalisation and neoliberal economic and social policies that have transformed social structures and reshaped much of the global economic order (Wan 2008). In China, following the introduction of the 'Open-Door Policy' in 1978, the initial impacts were both social and spatial. Social polarisation rapidly increased, but so did geographic differences in development with coastal provinces experiencing much more rapid growth than inland areas (Kanbur and Zhang 2005).

In recent years, sharp reductions in poverty and improved health outcomes, including life expectancy, have led to greater interest among Chinese economists in income disparities and their effects. In 2018 the International Monetary Fund (IMF) published a working paper on *Inequality in China – Trends, Drivers and Policy Remedies* (Jain-Chandra et al. 2018) which focused on the implications of income inequality for public services investment and economic growth. Consistent with other reports at the time, there were four main conclusions.

First, China has moved from being a moderately unequal country to being one of the most unequal (Piketty et al. 2019). Between 1980 and 2012, the Gini coefficient, an index documenting the level of the unequal income distribution, almost doubled, increasing from 0.30 in 1980 to 0.55 in 2012 (Xie and Zhou 2014). Although

levels of inequality have plateaued in recent years (Zhou and Song 2016), the growth in income inequality has far exceeded the average for other countries at similar levels of development, and even those of some wealthier neoliberal countries, such as Germany, the United Kingdom and the United States (Xie and Zhou 2014; Chan et al. 2019). The reported recent decline in income inequality may be more rhetorical than real, with researchers being suspicious of the accuracy of official data (Chen et al. 2016, p.9).

Second, when viewed in terms of population subgroups, differences in education and skills were significant drivers of the increase and subsequent modest decline in income inequality. Better educated and more highly skilled persons disproportionately benefitted especially during the early years of China's economic boom, but such differences slowly became less apparent after 2007. This was also true of differences in income based on the sector of employment. In the 1990s income inequality rose most for those without work, suggesting an uneven provision of social protection. Recent policy moves, however, such as the *Dibao* system, providing income protection for rural residents, have resulted in a reduction in such differences (Jain-Chandra et al. 2018). More fundamentally, the price equilibrium in the global market has driven up the labour cost of China's shrinking pool of industrial workers. Combined with the oversupply in white-collar labours and an intensive cultural demand placed on education, in recent years China watchers and scholars have started to notice in some areas there is a greater financial return to skilled blue-collar training than professional credentials.

Third, while urban-rural income differences have widened since the mid-1980s (Wang et al. 2014), the contribution of regional disparities to this inequity has declined. In 1995 provincial differences accounted for 35% total income inequality but only 11% by 2013 (Jain-Chandra et al. 2018, p. 9). By contrast the share of total inequality accounted for by the rural-urban gap was 44% in 1995 and, following a further increase up to 2007, declined slightly to 34% by 2013. Compared to the United States, income inequality in China is still far more explainable by urban-rural and regional disparities, whereas such influences are negligible in the United States where family structure and race are more important factors (Xie and Zhou 2014).

Fourth, in marked contrast to most developing countries, relative income inequality was initially higher in rural compared with urban areas. Since the mid-1990s there has been some convergence, with the gap between rich and poor rising much faster in cities than in the countryside. Ravillion and Chen (2004, p. 53), for example, showed that by the early 2000s, the absolute Gini index, relative to the 1990 mean, was approximately three times higher in urban compared to rural areas. Chen et al. (2016) have also shown that while urbanisation increased income inequality, its effects were lagged, suggesting that its causal effects on the growth of inequality were not artefactual. The greater growth of income inequality in urban areas is likely to reflect a number of factors including the greater growth of productivity, higher returns to education and increased skills in urban areas and the ballooning of urban-rural migration resulting in a surplus and 'captive' low-wage population. In addition, the effects of institutional biases

imposed by the *hukou* system have trapped migrant groups in segregated places and long-term poverty.

6.4 Income Inequality and Health in China

Of course the important question is to what extent has China's embracing of neoliberal reforms produced social consequences similar to those experienced in western countries (Li et al. 2019; Luo and Xie 2020). We approach this question by first examining general effects of income inequality on different measures of health before turning to a more detailed analysis of smoking.

In recent years an increasing number of studies have revealed the adverse impacts of income inequality on health outcomes (Table 6.1). Apart from three exceptions (Wong et al. 2009; Bakkeli 2016; Ding et al. 2017), two of which relied on medical biomarkers, the evidence suggest that the Chinese experience is similar to that of western countries. Income inequality is generally negatively related to different types of health outcomes, whether these be self-rated health status (Pei and Rodriguez 2006; Feng et al. 2012; Lin et al. 2017) or mental health, well-being and happiness (Sun et al. 2012; Wang et al. 2015a; Du et al. 2019; Fan et al. 2020). Studies using biometrics, such as blood pressure and cholesterol level (Bakkeli 2016; Ding et al. 2017), however, suggest that the relationship between inequality and health is more nuanced and subject to the specific measures of health outcomes.

Second, the relative effects of inequality on health are group dependent. As in western countries, there is increasing evidence that inequality has greater impacts on the health of the poor compared to the nonpoor (e.g. Du et al. 2019; Feng et al. 2012; Tan et al. 2018; Yang et al. 2019c; Zhang and Churchill 2020). The effects are not consistent, however, with some studies indicating that high-income earners are

Table 6.1 Recent studies of income inequality and health in China

Health indicator	Studies 2006–2020
Self-rated health status	Li and Zhu (2006), Pei and Rodriguez (2006), Jin and Yangyang (2007), Wong et al. (2009), Feng et al. (2012), Sun et al. (2012), Fang and Rizzo (2012), Lin et al. (2017), Ding et al. (2017), Yang et al. (2019c) and Inoue et al. (2019)
Subjective Well-being, quality of life/subjective social status	Hu and Lu (2012), Lin et al. (2017), Wu and Li (2017), Rarick et al. (2018); Tan et al. (2018)[a], Du et al. (2019) and Yu et al. (2019)
Happiness	Smyth and Qian (2008), Oshio et al. (2011), Wang et al. (2015b), Huang (2019) and Cheung (2016)
Depression/mental health	Sun et al. (2012), Lin et al. (2017), Zeng and Jian (2018), Fan et al. (2020) and Zhang and Churchill (2020)
Medical biomarkers	Bakkeli (2016) and Ding et al. (2017)
Health behaviours	Li and Zhu (2006), Ling (2009), Sun et al. (2012) and Yao and Asiseh (2019)

[a]Based on the EQ-5D index of health status, including anxiety and depression

also adversely by income inequality (Yu et al. 2019; Fan et al. 2020). Du et al. (2019) suggest that in growing economies, the richest people often suffer from a heavy workload and are more likely to be highly stressed in order to maintain their high socio-economic ranking. Thus, such pressures may exacerbate unhappiness and distress, with higher rates of smoking prevalence and intensity being likely outcomes.

Third, there is also evidence that the relationship between income inequality and health outcomes is curvilinear (Li and Zhu 2006; Jin and Yangyang 2007; Wang et al. 2015a). Known as the 'tunnel effect', this suggests that income inequality, as a marker of economic progress, may initially be viewed positively by certain groups who view it as an economic opportunity. This opportunity, however, may fail to occur, as has been the case in some transition economies (Grosfeld and Senik (2010) as well as in less economically developed regions of China with fewer chances of social mobility (Yao and Asiseh 2019). In such circumstances, the effects of income inequality on social well-being are likely to be reversed and become negative (Zhang and Churchill 2020).

6.4.1 Impacts of Income Inequality on Smoking

Despite an increased interest in links between inequality and health, this has not transferred to studies of health behaviour. Internationally, countries, such as China, that have higher levels of income inequality tend to have higher rates of youth smoking (Li and Guindon 2012). Kuo and Chiang (2013) report similar results for Taiwan, where relative deprivation was significantly associated with a higher prevalence of poor self-rated health, depressive symptoms and current smoking in both genders.

Within Mainland China Li and Zhu (2006) found that both smoking prevalence and smoking intensity were higher in more unequal communities; a one standard deviation increase in the community Gini increased the probability of smoking by 2.1% points. Levels of alcohol consumption were also considered but were not significant. Communities were defined as either neighbourhoods within cities or villages within counties. The authors acknowledged that the scale at which inequality is measured is likely to be important, implying that there is a need to consider other geographic scales of income inequality given the likelihood of different pathways linking the latter to smoking outcomes.

In contrast to the standard approach using Gini indexes as a measure of income inequality, Sun et al. (2012) examined perceptions of inequality and their relation to smoking. This is a common approach in western research (e.g. Siahpush et al. 2006). The authors examined the effect of two measures of self-perceived relative income (SPRI) inequality on smoking among Chinese youth: household income relative to peers and relative to their own past (Sun et al. 2012). The relationship between SPRI and smoking was not consistent and differed between girls and boys. Higher income relative to others was a risk factor for smoking among girls but not

for boys. By contrast, both higher and lower incomes relative to the past were risk factors for smoking among boys but not girls. These differences perhaps suggest that rapid changes in family income in either direction caused greater stress among boys and that social comparisons with peers were more salient for girls. This will be particularly evident for men who have traditionally been the main income earners. However, for younger women, smoking may represent a sign of conspicuous consumerism or success.

The effects of relative inequality have also been shown to be important among older adults. In a study of adults over the age of 50, Ling (2009) showed that while changes in relative deprivation increased the probability of ever, but not current, smoking, the former was most typical of the highest-income quartile of older adults compared to other income quartiles. This suggests that higher income inequality was a risk factor for persons with higher incomes, reflecting either peer pressures to smoke or the stresses associated with maintaining a high social position among this group. There was also a much larger effect of relative deprivation on smoking in the urban compared to the rural samples suggesting that the pressures of maintaining one's social position were more acute in urban settings.

The lack of research on the effects of income inequality on smoking is partly compensated by the strong links found between inequality and other health status variables such as depression, which is often higher among smokers (Ni et al. 2017; Luo et al. 2018; Stubbs et al. 2018). Until more research is undertaken on changes in smoking on the part of different social groups in contexts where income distributions have changed significantly, the conclusions drawn will largely have to depend on secondary health indicators which show strong associations to smoking. Given the structural changes affecting Chinese society and the stresses they have generated, there is considerable scope for further research between increased social inequality and smoking and other health behaviour outcomes.

6.4.2 How Relevant Are Western Explanations of the Health Effects of Income Inequality?

Most studies of the effects of income inequality on health have been conducted in western countries especially at a time when socio-economic conditions were markedly different from China. Since lower-income groups and certain ethnic minorities in western countries were disproportionately affected by state economic and welfare restructuring, it is not surprising that the health and well-being of such groups were more affected by high rates of inequality. China presents a different picture. Decades of economic growth and increased social mobility, which helped reduce absolute levels of poverty, have meant that the 'rising tide' did indeed lift all boats, but that some boats lifted faster than others. Under such circumstances the negative effects of inequality on health and smoking may not only exhibit threshold effects but also be context dependent. With this in mind, we briefly evaluate the importance

to China of the three pathways identified previously. Given the paucity of research on smoking, our comments pertain more to general health outcomes, but bearing in mind that many of these such as self-rated health or depression are themselves related to smoking (Stubbs et al. 2018).

6.4.2.1 Social Comparisons

According to the social comparison viewpoint, people compare themselves with others in terms of their place in the income distribution (Festinger 1954). Such comparisons may occur with respect to a variety of reference groups, be these be structured by locality, by age, by occupation/labour force position or by some combination of these factors (Kondo et al. 2008). The extent to which social comparison occurs is also likely to vary according to national context and the history of labour and ethnic relations which, in many western countries, have involved fractious battles for hard-won gains. In China higher egalitarian preferences may also be important, influenced by Chinese traditional culture and past socialist egalitarianism (Yu et al. 2019). Under the influence of Confucian culture, income inequality may be disliked and homogeneity valued to a much greater extent. Yang et al. (2019c) have argued that while being an individual of lower status is inherently hurtful and has detrimental consequences for health and well-being, the context within which the status is produced and maintained matters even more. In particular, lower status individuals in a *homogenous context*, that is, where everyone is more or less similar in status, suffer fewer of the undesirable health effects exerted by low status. Some indication of the impact of social comparisons in provoking stress and increased smoking is evident in Kuo et al.'s (2013) study of working-age Taiwanese men. While higher income inequality produced increased depressive symptoms, it also produced higher rates of smoking, thus suggesting that psychosocial stress was an important factor in these relationships.

Social comparisons are also affected by other contextual variables such as the degree of economic development of a region or level of rurality. For example, a number of studies have shown that the effects of income inequality on health are most damaging for lower-income groups and that the effects are worse in rural areas (e.g. Wang et al. 2015a; Tan et al. 2018). In such situations it could be argued that the social context is less fluid and chances of social mobility are lower, thus leading to greater negative perceptions on the part of lower-income groups of their life chances. The harmful effect of social comparison may be also amplified for low-income individuals in rural areas because of the paucity of supportative resources and agencies that are otherwise available in larger financially healthier cities to selectively assist with poor people's living.

In more fluid urban situations, with greater social mobility, it is likely that income inequality will have less impact on perceptions of well-being, future life chances and health behaviour outcomes. This is the basic tenet of the 'tunnel hypothesis' which posits that the poor may not build up a sense of dissatisfaction when they compare their incomes to the rich. This hypothesis suggests that high inequality

associated with rapid economic development may initially be tolerated in a society where economic and social changes are accompanied by positive expectations about the future (Cheung 2016), greater life chances and increased social well-being (Zhang and Churchill 2020). This situation perhaps will be most typical of urban migrants and those in provincial situations undergoing rapid change. However, if income disparities persist and little change occurs, then the impact of the 'tunnel effect' on health can soon change from positive to negative. The tunnel effect also appears to apply to rural areas. Knight et al. (2009) found a positive correlation between both past and expected future relative incomes of rural residents and social well-being, suggesting that people saw higher levels of income inequality as an opportunity for social advancement.

To date there have been insufficient studies of the long-term impact of the 'tunnel effect' on health outcomes, but two pieces of evidence suggest that its effect is transitory. First, compared to other national contexts, income earning potential is rather unstable in China, and incomes earned this year are a poor predictor of incomes earned in subsequent years (Chan et al. 2019). Second, while some cross-sectional studies show support for a 'tunnel effect' (among migrants) (Yu et al. 2019), as a general explanation, this is not sufficient given that the positive effects of income inequality on health can soon turn negative. This suggests that migrant expectations have not been met and that other contextual influences may be more important in influencing smoking and health outcomes. The 'tunnel effect' has been shown to be less important in Western China indicating that the rate of economic development also has an effect on perceptions of income inequality. As actual social mobility has also been shown to be lower in more economically developed cities (Chen et al. 2018a), where competition is fierce, this suggests that the relationship between income inequality and health outcomes is curvilinear. Such findings thus point to the need for more detailed work to be undertaken on the significance of psychosocial processes and smoking, not just among different types of migrant populations but also among lower-income Chinese in a variety of contextual settings.

6.4.2.2 Social Capital

The loss of social capital has also been advanced to explain the adverse effects of income inequality on health. In transitional societies, such as China, with high rates of population mobility, changes in community social structure and social connectedness, such factors assume even more importance. High rates of social mobility may cause an erosion of mutual trust, once so common in rural communities, but may also affect positive expectations about the future especially in urban situations where new social networks need to be established. While an increasing literature has devoted itself to the evolution of different forms of social capital in China and their links to general, physical and mental health, there has been little attention to how social capital has been a mediating factor in limiting the adverse impacts of income inequality. Generally it has been shown that while social capital is protective of general and mental health (Meng and Chen 2014; Wang et al. 2018; Zhang

and Jiang 2019), this depends very much upon social position. The transient lifestyle and difficulty to establish stable networks at a place led migrants to be frequently characterised by lower levels of trust both within their communities and with local residents (Wang et al. 2009). Levels of trust also reduce levels of happiness especially in places where income inequality is higher (Chen et al. 2012).

Western social scientists have frequently proposed that inequality damages social relations, but few Chinese studies have explored the extent to which social capital mediates the relationship between inequality and well-being. Du et al. (2019), for example, found that income inequality, when measured at the provincial level, was not associated with the quality of social relationships and levels of trust. However, when measured at the urban scale, Dai et al. (2020) report that residents in cities with greater inequalities (in housing assets) had lower levels of trust. Nevertheless, there is increasing evidence that, at the individual level, those with higher rates of trust will have healthier lifestyles, and are more likely to be non-smokers (Xue and Cheng 2017; Sun and Yuan 2019). Overall it is surprising that, given recent concerns with high rates of income inequality and its effects on health in China, more attention has not been directed to the mediating role of social capital.

6.4.2.3 Lack of Institutional Resources

Institutional resources that serve the poor tend to be lacking in unequal economies. The importance of the institutional arrangements, however, will depend upon the relative power of central and subnational governments in addressing inequality concerns. In China the State Council of the PRC in the Twelfth Five-Year Plan in 2011 emphasised the need to reverse the widening income gap as soon as possible (State Council 2011). Its subsequent actions, relating to income tax reform, labour market minimum wage policies, rural poverty relief and expansion of medical care coverage, have all contributed to the reduction of income inequality observed in recent years (Jain-Chandra et al. 2018). Despite such moves on the part of central government, subnational governments also affect the degree of inequality. China, as part of its economic reforms, devolved fiscal authority from central to provincial governments which are now responsible for more than half of total spending (Cevik and Correa-Caro 2019). However, Hao et al. (2020) using data for 23 Chinese provinces showed that fiscal decentralisation increased income inequality and was detrimental to public health. This reflects the nature of public spending, especially in less economically developed provinces, and in rural areas, where the focus was largely on infrastructure investment and public administration rather than social protection or health care. These results confirm the findings of Shi and Starfield (1993) in the United States where they found that higher state investment in primary care mediated the negative impacts of income inequality on health. Such findings are particularly important for smoking in China especially given lower health spending in rural areas.

Thus, certain types of subnational government spending appear to worsen inequality more than is compensated for by central government transfers. What is

not clear, however, is the extent to which the presence of high social inequality at the provincial level affects local political decisions regarding the nature and location of public spending. The extent to which this occurs is likely to reflect the nature of the local political leadership and the extent to which income inequality and its social consequences are major policy concerns. Zhang et al. (2020) found that cities that had 'local' leaders were more (almost 6%) likely to have redistributional policies that targeted social transfers to low-income households, compared to cities where leaders had been transferred from other places. They suggest that while mass cadre transfers of non-local personnel between localities may have limited the formation of local interest groups and enhanced government efficiency, they also appear to have prioritised economic over social concerns, compared to situations where 'local' leaders were more attuned to local needs. The effect of income inequality on patterns of local spending is also likely to reflect the ideological orientations of local leaders and the extent to which they attribute poverty and disadvantage to individual 'failure' or wider structural patterns of disadvantage (He et al. 2020).

The effect of institutional explanations on the link between income inequality and health also extends to the urban-rural divide where differences in smoking prevalence are obvious. Despite increased public intervention since 2003, public financial support to rural residents for health care is meagre compared to that for their urban counterparts, resulting in higher smoking rates and other adverse health outcomes. To illustrate this point, Fan et al. (2020) examined how the effects of income inequality on depression among older adults of differing social status from both urban and rural areas were mitigated by public health investment. They found that while income inequality resulted in increased depression, public health investment tended to reduce it, but the effects were different between urban and rural areas and by social group. Public health investment had its greatest impacts in reducing depression in urban areas and among the nonpoor. By contrast in rural areas public health investment had no significant impact, suggesting that lack of rural resources may have played a part in this outcome.

6.5 Chinese Urban Development and Its Implications for Smoking

The previous section has shown that the rise of income inequality is an important process affecting smoking in China. Following our model in Fig. 6.1, however, we also need to consider the interrelationships between neoliberal changes and patterns of urban growth. In western countries the advent of neoliberal governments in the 1980s and 1990s had profound implications for the health of cities, especially their lower-income populations. Heightened urban inequality, coupled with increased disadvantage, raised levels of urban stress and helped entrench smoking in many poor and minority communities. These issues have been discussed in detail elsewhere (Barnett et al. 2017), but have received little attention in China.

Before examining the social distribution of smoking in Chinese cities (Sect. 6.6), we step back to take a broader perspective on the urbanisation processes in China that may have implications for smoking. Using four brief case studies, we then demonstrate how the growth of urban inequality, and other associated political and social processes, is likely to invert traditional patterns of smoking resulting in higher consumption on the part of lower-income groups.

6.5.1 Patterns of Urban Development

As was emphasised in Chap. 4, studies of the impact of neighbourhood conditions on health and smoking are sorely lacking in China. Yet the pattern of neighbourhood development has created many of the preconditions for poorer health outcomes along with high rates of smoking and other forms of substance abuse. Particularly important here have been the growth of urban poverty and the social polarisation of urban space. While attention has been increasingly directed to the health effects of these different trends, smoking has received little attention.

In western market economies, increased poverty and income inequality were intimately related to neoliberal policies of economic restructuring and the contraction of the welfare state. These trends were instrumental in leading to the growth of spatial concentrations of poverty and extreme disadvantage (Wilson 1997). The effects of such policies were evident in numerous multi-level analyses which showed that area-level deprivation had emerged as a significant predictor of smoking prevalence above and beyond the significance of individual-level factors. For example, in a case study of Scotland, Barnett et al. (2017, pp. 93–94) showed that area-level differences in deprivation were most evident for current smokers compared to ever-smokers and particularly for females.

In transitional economies, such as China, the question remains regarding the extent to which patterns of urban development are leading to a spatial concentration of disadvantage and associated patterns of smoking. In the following sections, we briefly review the extent to which spatial concentrations of poverty may be occurring with respect to different local urban processes: the growth of urban poverty, the extent to which there is an increased social polarisation of urban space and the role of housing booms in limiting the residential choices of Chinese urban residents.

6.5.1.1 A New Urban Poverty

The adoption of neoliberal policies in China's new economic order has been evident with the dismantling of state-owned enterprises which, like many of their counterparts in the western world, were overstaffed and lacked technological innovation and market efficiency. A sharp rise in urban poverty and income inequality was the inevitable result of these changes.

The new urban poor include two main groups, affected by different institutional arrangements: the permanent urban poor and the migrant poor (Liu et al. 2008c). The permanent poor largely consist of a group of workers made redundant by the collapse of former state-owned enterprises, but who may have been partially absorbed into the informal sector (Liu and He 2017). Many of these workers were once part of state work units (*danwei*), which prevailed from 1949 until 1998 and were, at the time, the basis of urban community formation and governance (Wang and Murie 2000; He 2013). Many *danwei* built their own residential compounds creating live-work communities that encompassed employment, housing and welfare (Kan et al. 2017). Each *danwei* compound was managed by a state-owned enterprise. Thus, as in the former Soviet Union, housing segregation reflected different economic sectors rather than social segregation. The marketisation of the Chinese economy, however, resulted in the gradual dismantling of the work-based welfare system (Liu et al. 2008a, 2008b). Today many of these former *danwei* areas are comprised of poorer-quality public housing with many units rented on a short-term basis (Kan et al. 2017).

As was pointed out in Chap. 5, the migrant poor is differentiated from permanent urban poor because of the effects of the discriminatory *hukou* system which excludes them from social services and from formal urban employment. Many are, therefore, forced into the informal sector, often competing with laid off workers (Liu et al. 2008a). In common with the situation in many LMICs, they live in urban villages, commonly on the urban periphery and known for their substandard housing and low-quality built environments. In a study of Nanjing, Liu et al. (2008a) found that, compared to the urban poor, the migrant poor tended to be younger, have less education, have higher job turnover and residential mobility and were more likely to live in the private rental housing sector. Despite these material differences, the authors report that they had a higher level of satisfaction with their living conditions, often comparing their current situation to that of their previous living environment in rural areas. However, such conclusions need to be treated with caution given extensive evidence of the marginalisation and poorer health of rural migrants especially those with rural *hukou* status (Fu et al. 2007, 2018; Yang et al. 2018). In addition, younger migrants are also those more likely to suffer a decline in health following migration, a trend partly reflecting changes in their emotional state and residence in high turnover neighbourhoods lacking social capital and trust (Lu et al. 2020). It is not surprising that such groups experience higher levels of life and work stress and consequently higher levels of smoking (Cui et al. 2012).

6.5.1.2 The Social Polarisation of Urban Space

The question immediately arises regarding the extent to which the emergence of poor neighbourhoods in Chinese cities represents the formation of a new polarised urban structure. This is an important question, since new patterns of segregation might affect perceptions of inequality, social capital formation, smoking and other health outcomes. As Liu and He (2017, p. 296) have noted, ‘to date there have been

few efforts to form a spatial understanding of China's new urban poverty and the significance of their neighbourhoods to different poverty groups remains unclear'. For example, in western cities disadvantaged neighbourhoods are frequently stigmatised resulting in increased feelings of social alienation and an oppositional relationship to tobacco control initiatives (Factor et al. 2011). Smoking thus often becomes part of a local neighbourhood identity with the result that, as was emphasised in the previous section, both individual- and community-level socio-economic status have independent effects on smoking and its continuance. However, area stigmatisation, as yet, does not appear to be significant in Chinese cities. Liu and He (2017), in a study of 25 poor neighbourhoods in 6 cities, found that most residents (94%) did not perceive their neighbourhood to be stigmatised and that there was little variation in this perception between the 4 different types of neighbourhoods studied (old city neighbourhood, workers' village and inner and peri-urban migrant neighbourhoods). The lack of stigmatisation of poorer neighbourhoods was attributed to their recency of development compared to more deprived neighbourhoods in western cities. Of course, differences in stigmatisation also reflect the spatial concentration of poverty which is likely to be much greater in western cities.

High levels of spatial social segregation, comparable to western cities, are not yet evident in China. Instead, as Li and Wu (2008) demonstrated in the case of Shanghai, residential segregation is mainly tenure based, especially in terms of public housing rentals and commodity housing, rather than socio-economically based. Although spatial segregation (as measured by the index of dissimilarity) existed between groups with the highest and lowest levels of education, the difference was modest (0.325) with substantial mixing occurring between high and middle levels of education (0.276) and especially between middle and low education groups (0.078). By contrast much higher levels of segregation occurred between different housing tenures, particularly between public rental and purchased housing (0.682) and rented commodity housing (0.506).

Traditionally housing and neighbourhood differences have reflected the importance of *danwei* work units, but these no longer play a significant role in post-reform China with cities transformed as a result of economic restructuring and the privatisation of many former state-owned enterprises. Consequently new forms of commodity housing, built by real estate developers, have emerged as the dominant tenure (He and Wu 2007). Between 1985 and 2010, the proportion of public rental housing dropped from 70.7 to 3.4%, while that of privatised public housing and newly built commodity housing increased from zero to 42.6% and 50.6%, respectively (He 2013, p. 253). Of the houses built from 2000 to 2007, 80% were in gated commodity housing estates. This new structure has sustained former patterns of privilege with leaders, managers and professionals benefitting most, industrial workers less and migrants the least. The reconstitution of housing markets is likely to accentuate urban social-spatial polarisation as workers remaining in poorer public housing are differentiated from those doing better. For migrants not eligible for public housing, the result is likely to be the same. Currently the post-socialist housing transition in China is closely related to pre-existing institutional patterns which have yet to reconstitute themselves. However, as Li and Wu (2008), and others (Hao

2015; He et al. 2015; Wu 2016), have speculated, in the long term tenure-based segregation is likely to find a greater spatial expression as developers focus on more preferred urban locations and different social groups begin to congregate in different residential areas.

6.5.1.3 Housing Booms and Increased Inequality

The recent restructuring of urban space also reflects the influence of housing booms as a contributing factor to urban stress and the growth of urban inequality. Rampant expansion of real estate ventures since the 1990s has fuelled the Chinese economy and GDP growth. Monetary policy after the 2009 global recession injected four trillion Yuan into the Chinese market to help business with leverage and consumers with expenditure. However, instead of reviving manufacturing, much of this money flowed into real estate, including both commercial land use and residential housing. Consequently residential property prices tripled or quadrupled across much of China (Wang et al. 2012). Soaring prices were experienced mainly by properties in 'good areas' with access to schools, whereas the development of houses in less desirable areas merely kept up with market performance.

The health implications of the housing boom are receiving increased attention. Compared to income inequality, a perhaps more serious but often neglected aspect of inequality is property inequality (measured by the Gini coefficient in housing values) which rose dramatically following the economic stimulus package applied by central government in the wake of the 2008 global financial crisis (Dai et al. 2020). The authors found that higher levels of property inequality lessened trust, with this most evident among individuals whose fathers were Communist Party members, who saw inequality as unfair and a signal of exploitation. While the authors did not specifically address personal responses, such as smoking or drinking, it is likely that high housing prices are implicated as a result of the increased stress of living in an increasingly unequal urban environment.

High housing prices are also implicated in other changes in the built environment, particularly the loss of green space. Public green spaces have not been considered an integral part of the public infrastructure of Chinese cities, with commercial and residential developments often seen as more attractive by boosting local economic growth (Chen and Hu 2015). Chen and Hu also found that local government dependence on land finance exerted a negative influence on the provision of urban green space, especially in cities in the eastern coastal and central regions where land demand was highest. While evidence for the impact of urban green space on smoking in China is largely non-existent, important relationships have been shown between green space and stress (Yang et al. 2019b), itself related to smoking and a range of other negative health outcomes (Chen et al. 2020; Leng et al. 2020; Wang et al. 2017).

6.5.1.4 Landscapes of Change

To illustrate the new social differentiation which appears to be emerging in urban China, participant observation fieldwork was undertaken in neighbourhoods in four Chinese cities. While not exhaustive, the four case studies nevertheless give some indications of recent neighbourhood trends and their likely smoking consequences. The case studies are Sanhe, an urban migrant neighbourhood (in Shenzhen), a previous migrant neighbourhood which has undergone some gentrification (in Changsha); Gudang, a socially mixed established neighbourhood (in Hangzhou); and Songshan Lake, a more affluent neighbourhood (in Dongguan).

The first image (Fig. 6.2) shows a lane in the Sanhe migrant enclave on the outskirts of Shenzhen City, part of the special economic zone. The area, now undergoing gentrification, still has many contractors who hire day labourers en masse. At the turn of the century, the city's migrant worker population was located downtown, but as manufacturers, such as Foxconn Technology Group, relocated closer to the urban periphery, recruiting stations were established at Sanhe in Longhua District. A new congregation point for migrant workers emerged, making it a magnet and transfer station for unskilled labourers across Shenzhen and all over the country (China Daily 2017).

Sanhe is known for harbouring transients who cannot, or will not, find stable jobs elsewhere, and people who live in exile because of criminal records or bad credit ratings. It is the stereotypical migrant enclave where the neighbourhood is crowded and unsanitary. Most buildings are multiple-family households rented as packed dimly lit dormitories. When you enter these dormitories, you are likely to see many strangers, along with mice and cockroaches and in some places up to eight people share the same dark smelly room. Amid the smell of human odour, pungent shoes, rancid food and mould emanating from the crevices of aged buildings, a catch of tobacco smoke is actually quite refreshing and aromatic. The environment itself invites the use of tobacco and alcohol to numb the senses after a day's hard work. In addition, packing into a room with strangers is itself a stressful routine experience. Under such circumstances people often resort to substances like tobacco to relieve their stress, and consequently smoking prevalence rates are very high among certain groups of migrants. Living in a neighbourhood like the one pictured also fully exposes you to a smoking environment. Most of your friends will be male smokers, people spend their leisure time smoking, and friendships are built and strengthened by both smoking and drinking.

The scene depicted in Fig. 6.3 was taken during fieldwork on urban development in Changsha. Changsha is a developed provincial capital but does not enjoy the same level of foreign investment in manufacturing and salaries comparable to megacities such as Beijing and Shanghai. The photo shows an old community uplifted and refurbished from a migrant urban village. Compared to the Sanhe migrant enclave, the Changsha neighbourhood caters more to lower- to middle-income family groups. The infrastructure in this neighbourhood is still very poor with power wires haphazardly laid in the air. The road pavement is uneven with lots of potholes and untidy piles of garbage on the roadside, but building quality is solid. Apartments

Fig. 6.2 Sanhe migrant enclave, Shenzhen. (Day labourers resting and smoking in an urban alley. Empty tobacco packages were littered on the ground. Credit: Authors)

are spaced at a standard distance from each other. Some apartment owners even decorated their doors and windows and beautified them with ferns. Shops and stalls on the roadside also operate in compliance with local hygiene and housing ordinance. In this type of community, it is possible that the environmental stress resulting directly from the unpleasant living space and building structure is much alleviated. Due to a greater physical distance between strangers and an appropriate social space reserved for residents, the transmission of smoking by sight and smell is weaker. Tobacco smoking is still endemic in this neighbourhood, but the causes of smoking likely differ from that in urban slums. Social capital will be higher in this type of neighbourhood with higher levels of trust and public participation (Zhu and Fu 2017). In such situations social contact between neighbours may encourage smoking and the sharing of cigarettes.

The Hangzhou neighbourhood of Gudang (Fig. 6.4) is more affluent than that of Changsha, but is still relatively socially mixed. The area's development is likely to

Fig. 6.3 A smoker passing an old neighbourhood in Changsha. (Credit: Authors)

have benefitted from its close proximity to Zhejiang University. Smaller apartments are frequently seen above shops along the main commercial throughfares which also contain many tobacco outlets (see Chap. 1). As it is an older established neighbourhood, with good access to green space and characterised by some pleasant tree-lined streets, property prices will be higher than average as will social stability and neighbourhood social capital. The neighbourhood contains important role models of tobacco control, and in Hangzhou such networks have been shown to be particularly important in enlisting support for smoking bans (Yang et al. 2014). It is noteworthy that in 2019 Hangzhou was one of the first cities in China to ban the use of e-cigarettes in public places (CGTN 2019). Because of its neighbourhood educational profile, smoking rates are likely to be much lower than the average for the city as a whole (26.2% in 2011) (Yang et al. 2015, p. 165). Lv et al. (2011) showed for Hangzhou that adults with the highest levels of education were those most likely to have healthy lifestyles, including lower levels of smoking and being more physically active. Because Hangzhou has paid particular attention to improving access to greenspace areas (Wolch et al. 2014), neighbourhoods such as Gudang will become

Fig. 6.4 Gudang neighbourhood, Hangzhou. (Credit: Authors)

more desirable to Chinese adults seeking healthy lifestyles. Such trends thus are likely to accentuate urban social differences in smoking prevalence.

Not all more affluent neighbourhoods, however, have lower levels of smoking. As a stark contrast, to traditional views of much of urban China, the fourth picture (Fig. 6.5) was taken from the spectacular balcony in an upscale villa in Dongguan City north of Shenzhen. The city's growth owes much to the growth of low value-added manufacturing and being the largest importer and exporter of goods in China. In 2012 Guangdong Province had more billionaires than any other province in China. It indicates how disparately urban development has benefitted people of privilege compared to those without. In 2000 current smoking rates among males (65.2%) were recorded as being among the highest in China with many smokers indicating that their main reasons for starting were their responses to social pressure, to get rid of feelings of fatigue and increase the efficiency of their work (Zeng and Lin 2000). The picture in Dongguan emphasises the different impacts of income and education in influencing smoking (see Chap. 2). In Hangzhou the urban residents with the most healthy lifestyles were from higher educational groups. By contrast adults with the highest asset index had only moderately healthy lifestyles (Lv et al. 2011).

In summary, the four case studies illustrate some of the divergent patterns of neighbourhood change in Chinese cities. It is evident that spatial differences in neighbourhood social status exist, but it is still not clear how much urban spatial segregation is occurring in different socio-economic groups. In western cities this was often a post-World War II phenomenon reflecting state production of social housing followed by its subsequent privatisation which helped entrench social disadvantage. In China urban housing changes are more recent; given the importance

Fig. 6.5 Patio view from a luxury old villa in Dongguan. (Credit: Authors)

of private agents affecting urban development, it is likely that social differences between more and less preferred neighbourhoods will become increasingly apparent.

6.6 Urbanisation and the Social Distribution of Smoking

Historically, urbanisation has been a process that has powerfully reshaped ways of living. It has been intimately associated with the radical economic restructuring that transformed China over the last few decades and which has produced its own set of inequalities. However, it would be a mistake to simply attribute changes in the social distribution of smoking to urban economic changes. Rather it has occurred as a result of multiple socio-economic and political factors, including the effects of urban poverty, stresses associated with urban migration and discriminatory institutional policies, as well as the effects of rising incomes and tobacco advertising that encourage consumption. Such trends, however, have been countered by increased education and awareness of tobacco harm, better access to health advice for smoking cessation and increased levels of tobacco control, particularly in larger cities. Thus, it is necessary to examine economic and social aspects of urbanisation that have affected the social distribution of smoking.

In terms of economic processes, scholars have suggested that urbanisation may directly or indirectly increase population-level substance use as a result of the economic expansion and the laissez-faire marketisation experienced during economic reforms in transition economies such as China. Some studies have observed a positive correlation between economic growth and substance use (Ruhm 2005; Stevens and Caan 2008). Increased demand may occur because of rising incomes and the increased availability and affordability of goods. Commercial outlets quickly multiply during economic booms as the production and transaction of goods seeks to meet demands in an enlarged market, especially if the area under consideration has undergone a period of commodity shortage. In China nightclubs, restaurants, dive bars, vendor stalls and supermarkets appeared in multitudes in the post-reform period, and acquiring alcohol and tobacco had been never easier, particularly as more citizens became able to afford such goods. In addition, as we saw in Chap. 3, many provincial and local governments, in pursuit of faster economic growth, manipulated local demand by encouraging consumers to buy local cigarettes. Other transition economies, such as countries in Eastern Europe and the former Soviet Union, also witnessed large increases in smoking, but unlike China, this was largely due to the activities of transnational tobacco companies and weakened regulatory government involvement than the effects of economic growth itself (Gilmore and McKee 2004; Perlman et al. 2007).

In China, the literature has consistently shown that individual socio-economic status is associated with smoking (see Chap. 2). However, such an association is likely to depend on community-level social and economic development. According to rational choice theory, compared to the poor, people with more disposable income will be less likely to spend money on recreational substance use when the economy

thrives, since the opportunity to allocate their resource has been diversified (Buchmueller and Zuvekas 1998). Therefore, the social distribution of smoking will be different in more urbanised communities compared to rural areas. In more traditional societies, we would expect to see substance use to be higher among people of more advantageous social status, for whom smoking, drinking or dietary patterns are markers of conspicuous consumption.

Despite the arguments presented above, other aspects of urbanisation, such as the development of social services, health facilities and sanitary improvements, may counter the positive effects of economic urbanisation on smoking. The modern welfare system and investment in public goods have not only produced visible material outcomes but also increased awareness of tobacco harm (Anderson 1990; Bambra 2007; Bayer and Stuber 2005). Tobacco control efforts, which have had a largely urban focus, have banned smoking from the public spaces of many Chinese cities (see Chap. 9). Despite reservations at local administrative levels, public health practitioners and social workers at universities and centres for disease control have long advocated for smoke-free legislation (Ngok and Li 2010). The goal of both education and regulatory actions is to promote denormalisation of smoking and increase its stigmatisation. However, because of their lower levels of education and income, the poor are less likely to be aware of smoking-related harms or to be able to afford, and access, smoking cessation services (see Chap. 8). They are also more likely to suffer from greater psychological stress and have lower life satisfaction.

The social dimension of urbanisation also includes lifestyle that depends on positive relationships, instead of a cohesion consolidated by participation in risk-taking rituals. It could be argued that urbanised and more individualistic lifestyles are less supportive of the types of ritual drinking and smoking, typical of many rural communities.

In summary, as a community develops, economically and socially, we expect to see changes in social patterns of smoking. While urban economic developments may provide increased opportunities for substance use, the impact of social and regulatory changes is likely to do the reverse. However, despite the importance of these processes, Yang (2017) has observed that they have received little attention in the global literature. As was highlighted in Chap. 2, models of the smoking transition, for example, do not explicitly examine subnational variations and largely ignore processes of urbanisation and socio-economic change, the effects of which will vary across different communities. Thus, it is important to consider how community socio-economic change affects smoking, independent of individual characteristics. We turn to this issue in the following section.

To test the theoretical expectations on urbanisation's impact on individual smoking behaviour, Yang (2017) used longitudinal data from the China Health and Nutrition Survey (CHNS) that tracked 12,432 respondents from 9 Chinese provinces over the course of 20 years from 1991 to 2011. The study used multi-level growth curve modelling to test how economic and social service urbanisation affected individuals' frequency of tobacco and alcohol use. For economic urbanisation, the study adopted several indicators related to the modernisation of the economy, including the typical wage of a manual worker and the number of people

working in nonagricultural sectors. At the same time, urbanisation in social services was measured by indicators reflecting the adoption of modernised modes of public resource distributions, such as health-care coverage, child-care provision and welfare provision, among other items that a traditional agrarian community tends to lack. Besides household and individual surveys, separate data was collected at the community level to enable a multi-level analysis.

When community-level social and economic measures of urbanisation were introduced into the model, Yang (2017) found that, of the two measures net of the effects of other control variables, economic urbanisation had no independent effect on individual smoking. However, improvements in social services in urban areas significantly dampened the association between income and smoking. This was also true for drinking. This means that in communities of low social development (the dotted line in Fig. 6.6), rich people are more likely to smoke (and drink) than less affluent people. By contrast, higher-income people living in an economically modernised community with better social services (the solid line in Fig. 6.6) are much less likely to smoke than their lower-income counterparts in those communities.

The gender pattern of smoking was also reversed by social development. Yang (2017) showed that, in contrast to males, females tend to smoke (and drink) more in communities of high levels of social development. Smoking and drinking in transition economies can help construct an independent and liberalised female identity,

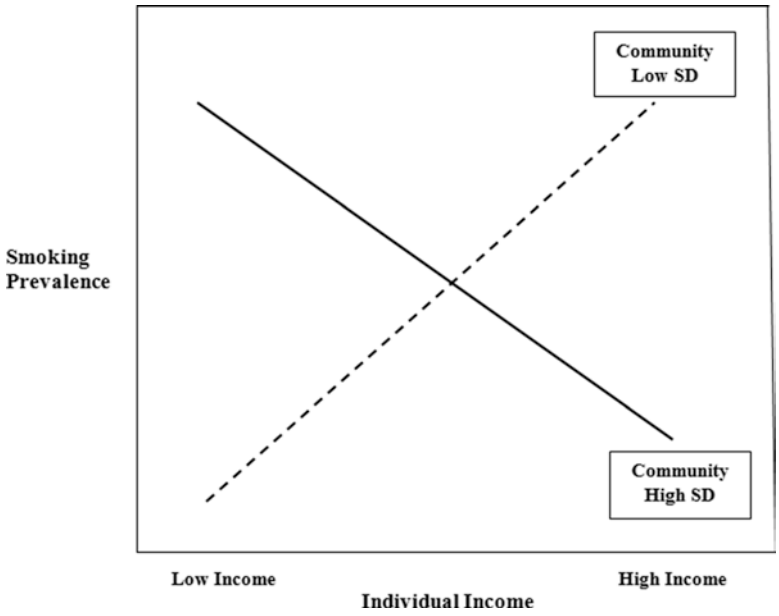

Fig. 6.6 Cross-level interactions between individual income and smoking prevalence by level of community social development (SD = social development. Credit: Authors. Modified from Yang 2017, Fig. 2)

while on the other hand, the need to demonstrate masculinity through risk-taking behaviour and substance use becomes less pressing.

Taken together, these findings stress the importance of urbanisation, as a process of community-level social development, in reversing traditional patterns of smoking. Community-level development has contributed to less smoking overall, but its effects are divergent, depending on gender and income. This is also true of other health behaviours such as drinking, and complements other work on obesity in China which has challenged uniform descriptions of the social patterning of the growing obesity epidemic (Tang et al. 2019; Zhou et al. 2017). As in the case of smoking (and drinking), within less educated areas of China, higher BMI is characteristic of those of higher social status with the opposite being true in more educated (urbanised) areas. Such findings are indicative of the diversity of health transitions at different stages across China's vast landscape, just as they are internationally. By virtue of changing the cultural norms, improving health education and promoting an individual-oriented market-based rational behavioural mode, in which other forms of consumption become more important than substance use, social urbanisation has tended to reverse the traditional relationship between socio-economic status and smoking. Tian and Wang (2013) have similarly noted that the deterrent effects of education on smoking were far more pronounced in urban compared to rural areas, an effect which became more apparent over time (1993–2009). This suggests that traditional western patterns of increased smoking among more deprived and socially disadvantaged groups are likely to become more common in China, in a similar fashion to other Asian UMIC countries, such as Korea and Malaysia (Chang et al. 2019; Mariapun et al. 2019), especially in urban contexts.

6.7 Conclusions

This chapter has explored the growth of urban inequality and urbanisation on smoking and the likely impacts of current trends in urban development. With respect to all three processes, research on their health behaviour impacts is in its infancy. This is surprising given the significance of urban change in post-reform China, not only in terms of health outcomes but also because of the way state policy is implicated. The results of this chapter suggest three main findings.

First, the growth of income inequality is a structural process intimately related to urbanisation and macroeconomic policies typical of transition economies. The evidence suggests that higher income inequality in China is related to smoking along with a series of adverse health outcomes, including depression, poorer self-rated health status and lower levels of subjective well-being. In this respect the findings for China are very similar to the past experience of western countries. However, there are also suggestions of differences between China and the western experience. The rise of income inequality in China has occurred at a time of rapid rural-urban migration and economic growth, the reverse of the experience in many western cities. The presence of a 'tunnel effect', indicating that migrants and other urban

residents perceived high levels of income inequality to be an opportunity for economic advancement, suggests that the health and social impacts of income inequality are partly context dependent being more likely to occur in regions and cities in China which are more economically developed. This is consistent with the findings of cross-national comparative research which suggests that the effects of rising income inequality are moderated by the level of economic development, with negative effects being most evident in richer countries (Ngamaba et al. 2018). Nevertheless there was still sufficient evidence of negative impacts of income inequality on smoking and other health outcomes, which were often most pronounced for lower-income groups, to suggest that there are certain similarities to the western experience.

In terms of the different pathways linking inequality and health, the evidence is less clear. With respect to psychosocial factors such as status comparisons, these are likely to become more important as urban development proceeds in China and residential differentiation increases. In the United States, Cheung and Lucas (2016) found that low-income individuals tended to report lower life satisfaction when they lived in richer counties with higher income inequality compared to high-income individuals. This is likely to occur at some point in China, depending upon the nature of urban development. In a similar way, the impact of income inequality on access to public resources, such as health care, is also likely to be context dependent. A growing body of evidence suggests that a strong health-care system, in particular improved access to primary care, may mitigate the adverse impacts of income inequality on population health (Detollenaere et al. 2018). Strong social capital will also play a role here, especially in rural areas where the adverse health effects of strong income differences may be countered by increased local support from friends and relatives. Much of the literature in China has emphasised the adverse impacts of poor access to health services on health (e.g. Zhang et al. 2017), but has not linked such outcomes to the presence of provincial or city policies or the extent to which these are an outcome of the income distribution in these areas.

The second main finding pertains to links between urbanisation and the social distribution of smoking. We have shown that when there is a greater community investment in urban social services, smoking prevalence tends to decline among more affluent groups, mimicking the pattern found in western countries. In the more urbanised regions of China, therefore, the social gradient of smoking has been inverted from that typical of rural areas, with consumption in urban areas being higher among more disadvantaged groups. This pattern is not surprising. It reflects not only the impacts of urban inequality upon more disadvantaged populations and the effects of *hukou* on restricting opportunities for poorer migrants but also the links between urbanisation and more progressive tobacco control policies.

There are also suggestions that the pattern in China is similar to that recently reported in South Korea where positive correlations between area deprivation and both male and female smoking were strongest at the metropolitan level and negative for rural areas (Kim et al. 2017, p. 107). The inversion of the social gradient in smoking between less and more urbanised areas deserves much more attention in different regions of China, especially those dominated by the tobacco industry.

There is also a need to explore the effects of both individual and area socio-economic status on smoking especially in urban China. As we have seen, in western cities it is common for area deprivation to affect smoking independent of individual SES. However, even though such trends (for administrative districts) have been reported for Korea (Yun et al. 2015), especially for males in urban areas, it is not clear whether this may also be true of China. The independent effect of area deprivation on smoking is most likely to occur in situations where structural forces, such as deindustrialisation, have affected community welfare and health behaviour. Within China it is likely that the higher smoking rate of some cities in the northeast 'rust belt' may reflect such trends, above and beyond individual social characteristics, especially since other evidence indicates that cancer mortality in northeast China is independently related to area deprivation (Kou et al. 2019).

Finally, urban development in China bears many similarities with other transition economies that have undergone economic and social reform. The pattern of urbanisation, once totally dominated by the state, now represents a quasi-market. State actors are still important in guiding urban growth, but development is now largely seen as the result of market processes. This is most evident in the housing market, and the reform of this sector has produced polarising property wealth gaps (Chen and Han 2014). Changes in the housing market are thus an increased source of stress reflected in unhealthy behaviour, such as smoking. In the future, spatial inequalities in housing segregation are likely to become more evident than inequalities based on a social hierarchy of different tenure categories. It is no accident that research on neighbourhood effects documenting the importance of residential context on health, independent of personal attributes, is largely absent in China. To some extent this reflects the past structure of *danwei* live-work communities embodying a certain degree of social mixing, but it also reflects the lack of neighbourhood social segregation and concentrated disadvantage. Nevertheless, even among more deprived migrant groups, neighbourhood level factors on self-rated health and psychological well-being tend to be weaker for migrants than more permanent residents. In Shanghai, for example, neighbourhood safety and social cohesion were health-promoting resources only for natives rather than migrants (Wen et al. 2010). Issues of neighbourhood stigma, for the present anyway, appear to be absent, and not a significant force affecting health behaviours as in western countries.

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