



# Villages-in-the-city in China and Vietnam: Comparative morphological transformation and incorporated process in Kunming and Hanoi

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## ARTICLE INFO

### Keywords:

Villages-in-the-city  
Urban village  
Chengzhongcun  
Làng trong phố  
Urban morphology  
Morphogenesis  
Informal urbanism

## ABSTRACT

This paper examines the morphologies of Villages-in-the-City (ViCs) in Kunming in China and Hanoi in Vietnam, that are undergoing rapid urbanisation and urban transformation. In China, the term Chengzhongcun refers to development of rural settlements that have been included in the urban districts arising from city expansion. Meanwhile, in Vietnam, the phrase Làng trong phố is used to describe settlements in urban areas that used to be rural villages. Both types of settlements share many common characteristics linked to rural background, and to social and economic policies in these two countries. The findings illustrate that spatial transformations are generated by fundamental economic and social changes, and that the influences of land policies and roles played by local government in each country have significant impacts on the formation of the ViCs. Although the planning processes are managed through top-down systems, the diverse practices and small scale and cost-effective tactics contribute to the transitions of the ViCs. The morphological differences between ViCs development in two countries are due to differences in management modes and land use rights. The outcome of this paper contributes to the deeper understanding about similarities and differences of ViCs in the Global South.

## 1. Introduction

Within ongoing process of urbanisation, informal settlements have quickly emerged to accommodate more than 1 billion people (UN-Habitat, 2022). The majority of studies have mainly focused on the theory of urban informality and the upgrading of informal settlements; the role of former rural settlements within the influence of urban expansions remained underexplored. Recent studies have illustrated that village settlements in many countries, such as China (Al, Shan, Juhre, Valin, & Wang, 2014; Chung, 2010), Vietnam (Thinh & Kamalipour, 2022; Thinh, Kamalipour, & Gao, 2023), Egypt (Hareedy & Deguchi, 2010), Indonesia (Mulyasari, Sihombing, & Iinaeni, 2017) and India (Van Oostrum & Dovey, 2022), have been surrounded by urbanised landscape and have become Villages-in-the-city (ViCs). The existence of ViCs in metropolises has become a unique feature as a hybrid between informality and formality. It is important to separate ViCs from other forms of urban informality as incremental developments in ViCs took place in private plots rather than in unused and public spaces. A definition of slum by UN-Habitat (2003) focused on a range of housing conditions, such as lack of basic services and location on hazardous land. While ViCs are not classified as a slum according to this definition, the

living environments in ViCs have been criticised for the inefficient infrastructure and unregulated housing that potentially cause health and safety problems (Wu, 2016). Since ViCs are not formally planned neighbourhoods, they are frequently seen as undesirable neighbourhoods that provide no benefits for long-term urban development (Liu & He, 2010; Wu, Zhang, & Webster, 2013). As knowledge of morphogenetic process is crucial for better design interventions, there is a growing need for planners and policymakers to have better understanding of the transformative processes of ViCs in order to integrate the settlements into urban areas.

Studies that systematically explore the formation and incremental development in ViCs, remain fragmentary (Van Oostrum & Dovey, 2022). As the majority of research investigations into ViCs have been carried out in Chinese cities (Wang, 2022), it is misunderstood that the phenomenon of ViCs is unique to Chinese urban development (Leaf, 2007; Van Oostrum, 2018). Some studies illustrate differences between ViCs in the Chinese context, and informal settlements and the model of an urban village in Western countries (Chung, 2010; Lueder, 2018; Myers, 2020; Ren, 2018, 2020), but those studies overlooked different variations of ViCs in the Global South. Such a bias reduces the phenomenon of ViCs to the specific institutional and socio-economic

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characteristics in China. Perhaps due to different languages, various terms have been used to describe ViCs (Van Oostrum & Dovey, 2022) resulting in uncertainties in classification of ViCs. In particular, *Urban Kampung* or *Kampung Kota* are frequently used in Indonesia and Malaysia to highlight rural settlements that exist outside the controls of urban planning in metropolitan areas (Ghazali, 2013; Lathif, 2020; Octifanny & Norvyani, 2021). Meanwhile, the term *Làng trong phố* is commonly quoted in the newspapers and media to identify those village characteristics in Vietnamese cities (Thinh et al., 2023; Thinh & Kamalipour, 2022) while *Chengzhongcun* is frequently used to address the rural settlements that are under control of village collectives within Chinese cities (Chung, 2010; Lin, Meulder, & Wang, 2012; Wang, Wang, & Wu, 2009). Even within a single country, various terms exist. Taking India as an example, *Abadi* in Hindi, *Gamtal* in Gujarati and *Gramathana* in Kannada are used to describe village settlements. The diversely transformed spatial structures of rural settlements under impacts of rapid urbanisation and globalisation in different contexts need further investigation.

This study explores the influence of rapid urbanisation on incorporated processes and incremental transformations of ViCs in the context of China and Vietnam. These countries are selected for study owing to their shared common political and socio-economic background. During the twentieth century, both countries underwent two great transformations. Firstly, socialist ideology was adopted in both countries during the 1940s and the 1950s. Secondly, economic reform policies were introduced in 1978 in China and in 1986 in Vietnam. Since then, both countries experienced rapid urbanisation, which has significantly affected changes in rural settlements (Leaf, 2002). The term *Chengzhongcun* is frequently used to address the village's structure within Chinese cities (Lin et al., 2012; Lin, De Meulder, & Wang, 2011; Lin, Meulder, & Wang, 2011; Wang et al., 2009). *Chengzhongcun* used to be rural village settlements where residents were involved in agricultural activities. Following the urbanisation process, many rural settlements have eventually been surrounded by urban landscape and developed dual urban and rural characteristics (Gao, Pitts, & Jiang, 2023). Meanwhile, The Vietnam phase *Làng trong phố* is commonly used to identify the former village settlements located in the urban areas (Nguyen, 2006; Pham, 2015). In Vietnamese cities, although the rural villages have been integrated with urban areas, various traditional features of villages, such as temples, pagodas, wells, village gates and communal houses, are still well preserved, and the usage of public spaces retains its traditional characteristics.

Despite certain similar socio-economic background, urban development and policies with regard to ViCs are vastly different between China and Vietnam, particularly since the economic reforms in the 1980s. Studies on ViCs in China and Vietnam have focused on two aspects of urban development: the transformation of rural settlements and conversion of agricultural land into newly built urban areas. Recent Chinese studies generally focused on transformative processes and an urban image of isolated patches of informality with a reference to formal redevelopment approaches. On the other hand, issues relating to land conversion are mainly explored in the Vietnamese context. In China, all areas, which are collectively managed by village committees, are typically described as ViCs; in Vietnamese discourse, only historical residential areas are considered as ViCs.

The comparative study of ViCs in China and Vietnam can highlight the common patterns of urbanisation with countries that share many aspects of economic and social background. On the other hand, historical events, and their influence, together with contemporary needs such as for attracting investments have led to more independent individual cities that are more distinctive from each other. The authors' hypothesis is that development strategies of ViCs depend on a better understanding of the ways ViCs are perceived and conceived within the urban field. As there is lack of comparative studies about ViCs in the Global South, the analysis in this article is based on experience of the authors while the databases come from satellite images, relevant studies and reports, and

planning documents. The main research questions in this study are: (1) What are main differences between *Chengzhongcun* and *Làng trong phố* regarding spatiality and transformative processes? (2) How do the differences in socio-economic background, land policies and modes of governing have impact on distinctive spatial characteristics in *Chengzhongcun* and *Làng trong phố*? The aim of this paper is not to provide a specific development strategy, but to provide a broad overview and a theoretical framework about spatial characteristics of ViCs in China, Vietnam and other contexts, which may be useful for further study and analysis. The following sections include a review of relevant literature on formation and incremental development of ViCs, research methods and detailed analysis of six case studies in two cities: Kunming (China) and Hanoi (Vietnam).

## 2. ViCs in the context of China and Vietnam

Previous studies have shown that the transition of rural landscape in China and Vietnam are considered projects of state visioning that involve negotiation, resistance, and compromise by all scales of government, agencies, and businesses that are driven by socio-economic goals (McGee, 2009; Nguyen, Duan, & Zhang, 2018). In this process, the state defined urban and rural space, and the control of spaces through regulations and planning tools in attempt to bring modernization, and local officers are pressured to promote urban development projects to meet financial obligations. At the same time, the transformation of village settlements closely associates to villager's livelihood and their rights to use the land (Friedmann, 2011; Leaf, 2011; Nguyen, Duan, & Zhang, 2018). For this reason, it is important to review how different factors influence rural settlements in urbanisation processes in these two countries.

### 2.1. Land policies and urban planning

ViCs are different from other informal settlements because their spatial development is not entirely illegal. While various forms of informal settlements are based on appropriation of public spaces and unused land (Dovey & King, 2011, 2012; Dovey, van Oostrum, Chatterjee, & Shafique, 2020), the formation of ViCs in China and Vietnam is directly linked to land policies and socio-economic changes. In the middle of the twentieth century, only about 10 % of people in China and Vietnam lived in urban areas (Friedmann, 2005; UN-Habitat, 2014). Both countries were perceived as nation of villages, and state policies in China and Vietnam were aimed to control labour forces and land. Movement from rural to urban areas had to be approved by the authority; otherwise, it was impossible to access essential services. As a result of strict controls, the rate of urbanisation before the economic reforms in the 1980s was very low. In the pre-socialist period, the agricultural land was not equally distributed among the population; thus, the state's visions had shaped the attitudes about public control over use of land (Tria Kerkvliet & Selden, 1998). Collectivization transferred authority over agricultural land and labour from rural households to local authorities. Despite the meaningful aims, economic stagnation prompted the governments to modify their policies, and the economic reforms have been introduced in both countries around the 1970s and 1980s in China and Vietnam respectively (Nguyen, Duan, & Zhang, 2018). Since then, new laws have dismantled agricultural collectives, and farmers are more directly responsible for agricultural products. Also, land ownership and land use rights are separated, and farmers obtain land use rights for homestead and farmland.

Since the economic reforms, both China and Vietnam have gradually moved towards marketization while retaining some socialist planning characteristics (McGee, 2009). Before the economic reforms, the planning system in China and Vietnam principally focused on capacity of central government while local governments had little autonomy in urban development. Local urban planning was used to implement socio-economic plans and policies determined by higher levels of government.

This centralised planning system was extremely rigid due to command-type decision making and local government had to depend upon state allocations for urban development funds (Kuo, 1989; Logan, 1995). Since the economic reforms in the 1980s, marketization has become major driver for the transformation of urban planning systems in China and Vietnam. As local government become less dependent on funding from the central government, urban planning has become an important instrument to pursue urban development (Nguyen, Duan, & Liu, 2018; Qian, 2013). Practically, local government have used planning as a tool to attract investments from private sectors and international sources. Subsequently, large-scale planned zones and mega-projects have been strategically used to enhance their competitiveness and world fame, and there are increasing demands for conversion of relatively low productivity rural land to higher productivity urban, industrial, and commercial areas (Liu & Zhang, 2020; Nguyen, 2009). In order to acquire finance and spaces for urban projects, rural land has been converted to urban land by local governments through planning tools, and land use rights are given to developers through different mechanisms such as tender, auction and negotiation (Labbé & Musil, 2014; Liu & Zhang, 2020; Nguyen, Duan, & Liu, 2018; Nguyen, Duan, & Zhang, 2018). Nevertheless, developers generally avoid development in existing residential villages to reduce costs of land acquisition and resettlement which led to the formation of the ViCs.

Despite the similarity around socialist ideology relating to land management and planning system, there are different attitudes concerning land ownership between China and Vietnam (Nguyen, Duan, & Zhang, 2018). In the Chinese context, *Chengzhongcun* is a neighbourhood in an urban area owing to its special rural status. Since the People's Republic of China was established in 1949, the country has applied two-separated land systems for urban and rural areas. Since the economic reform in China in the 1980s, the dual land system has been retained. Urban land is owned by the state and managed by municipality; thus, the land use rights can be leased to users in exchange for payment. Meanwhile, collectives own rural land, but there are restrictions for their land to be sold on the general land market. Villagers obtain farmland use rights and residential plots from the collectives according to the rural Households Responsible System. These land use rights can only be transferred among villagers or rented to outsiders. As a result, the dual land system creates an invisible boundary between rural villages and urban areas (Buckingham & Chan, 2018; Wang et al., 2009; Wang, Zhang, Wu, & Skitmore, 2015). Within urban development process, the first stage is to convert rural land belong to the village collectives to state-owned urban land before it can be used for other urban purposes. However, before the land is expropriated to be urban land, the physical layouts of village's settlements are kept, and they maintain collective ownership (Liu, He, Wu, & Webster, 2010).

While the distinction between state-owned and collective-owned land is widely seen as a key driver for the formation of *Chengzhongcun* in China, the incorporated process of villages to Vietnamese cities is mainly based on changes in land use and administrative boundaries. During the 1950s and the 1960s in the North of Vietnam, all the private property and land was gradually brought under collective ownership. After the reunification in 1975, the agricultural collectivization was introduced to the South while the central administrative system made decision for all aspects of planning. Since the adaptation of economic reform in the late 1980s, which included the newly adopted constitution and introduction of the Law on Land, land systems have been reformed. All the land belongs to the people within the management of the state (Nguyen & Kammeier, 2002; Suu, 2009). Since the land allocation in 1993, farmers have land use rights for agricultural plots and residential land for their homestead in accordance with the revised Land Law. The land use rights of residential areas can be transferred or leased to others as appropriate while the land use rights of agricultural land can only be transferred to farm users in the same communes and townships. The conversion of agricultural land to other land uses must be authorised at the relevant administrative levels. During the city expansion process,

agricultural land is subject of conversion for new urban spaces while the residential areas are generally kept due to high costs of compensation and resettlements. As a result, *Làng trong phố* emerges when communes in rural districts are transferred into wards in urban districts, and new urban areas are spatially built up over farmland around the village settlements (Bousquet, 2016; Labbé, 2011; Leaf, 1999).

## 2.2. Modes of governance and informal housing in ViCs

In China, there are three administrative levels including provincial level, county level, and township level. Within the township level, there are autonomy divisions: village committees for rural communities and resident committees for urban communities. They manage local affairs and public welfare, mediate disputes among locals and make suggestions to the people's government. During the development process when the local government requisitions farmland, because of the lack of the capital to compensate the relocated villagers, the local government allows the farmers to retain their collectively owned property rights in the village (Wang et al., 2009). Meanwhile, Chinese villagers have the freedom to build and use their houses according to their needs. Although each village has more than one master plan set up in different periods, those are rarely followed because of the rapid changing situations during the urbanisation process. Thus, *Chengzhongcun* are frequently considered as places providing cheaper accommodation for the urban population and development within the village is less controlled by urban planning (Liu et al., 2010). In addition, cities like Shenzhen and Guangzhou have formally approval processes for constructing buildings, but in *Chengzhongcun*, most buildings fail to comply due to a lack of effective administrative organisations to implement them (Lin et al., 2012; Lin, De Meulder, & Wang, 2011; Wang et al., 2009).

In Vietnam, there are three administrative levels including provincial level, district level and commune level (Koh, 2006; Leaf, 1999)00. The lowest level consists of wards in urban districts and communes and townships in rural districts. In urban planning process, provincial and district levels make key decisions on planning aspects while the ward level acts as mediators between government and residents (Koh, 2006). Research on the regulatory context in Vietnamese cities has generally focused on self-organised practice and incremental development. Due to effects of wars and lack of financial resources, urban development in Vietnam during the 1980s and 2000s, was less planned by the state and was driven by individuals and households (Geertman, 2007). It was estimated that self-built housing contributed around 75 % to 90 % of housing stock in Vietnamese cities during the late 1990s and early 2000s (Geertman, 2007; Koh, 2006; UN-Habitat, 2014). Theoretically, all buildings have to following building codes; however, majority of self-built buildings have been built without following formal procedure (Leaf, 2002). Self-built practice is popular in village settlements (Geertman, 2007; Le, Nguyen, & Quang, 2023; Leaf, 2002; Nguyen, Duan, & Liu, 2018).

*Chengzhongcun* not only inherits the village-style of self-organisation, social and cultural traditions in China but also strong collective economy. Theoretically, during urbanisation process, units of organisation in the rural villages including party organisation, villager' committee and economic organisation, which have responsible for political, social, and economic affairs of villages, should have gone through radical changes. However, in practice, these village units have been retained in *Chengzhongcun*. Cities like Guangzhou have developed a reserved land policy that require a proportion of land to be returned to villages for commercial and industrial development during land requisition (Lin et al., 2012; Lin, Meulder, & Wang, 2011; Wang et al., 2009). Due to lack of capital, the collective organisations frequently rent out collective properties or join with private sectors to create joint-stock companies, which acts as the management bodies of properties and local affairs within *Chengzhongcun*. Villagers can receive an amount of cash from their collective properties each year. The company may also set up some non-profit institutions to provide social welfare and construction of



public spaces and facilities for villagers.

While village organisations in China play important roles in socio-economic development, the built environment of *Làng trong phố* in Vietnam is significantly influenced by villagers and newcomers. Within Vietnamese administrative hierarchy system, there are several quasi-levels including residential clusters and resident groups (*Tổ dân phố* in urban areas and *Thôn* in rural areas), but the roles of these groups are limited to manage local affairs and to inform local needs to administrative levels (Koh, 2006). Thus, local residents have to rely on their own resources to make new livelihood. During urban expansion processes, rural agricultural land is requisitioned for new urban projects while residential areas have generally been avoided as they are perceived as inherited ancestral land, and demand high compensation rate and resettlements. Villagers generally received an amount of compensation, but this does not mean the villagers rise out of poverty. Recent studies shown that livelihoods of villagers are more fragile, un-sustainable after land acquisition (Anh, 2019; Binh, 2017; Nguyen, 2004; Suu, 2009). Due to lack of experience and financial management, landless villagers, who have become rich virtually overnight from transferring the agricultural land to developers, are unable to invest wisely in resources that would sustain their families and new livelihood for the long run (Nguyen, 2004). The government theoretically has to assist farmers after the land acquisition. Such assistance includes financial subsidy to find alternative work, vocational training, and job creation for the land-lost villagers. In practice, the training programmes for villagers have not yet offered optimistic solutions (Suu, 2009). The entrepreneurs who use the acquired land are required to employ a certain percentage of farmers, but due to lack of skills and education, there is little opportunity for villagers to be qualified to work in formal sectors. Thus, they mainly focus on informal home-based businesses such as opening shops at home (Fanchette, 2016; Suu, 2009). As land use rights of residential areas can be leased or exchanged to outsiders, villagers frequently divide their residential areas and gardens into smaller plots and distribute those plots to their heirs or sell to outsiders. The self-organised activities result in fragmented landscape in *Làng trong phố*.

The built environment in *Chengzhongcun* and *Làng trong phố* is also influenced by rural migrants. Since the economic reforms, in both countries, the household registration (*Hukou* in China and *Hộ Khẩu* in Vietnam) is no longer an instrument for the state to prevent rural migration (Nguyen & Locke, 2014). While rural migrants can move to cities, the opportunity to legally settle down is selectively narrow. Therefore, the major economic resources for villagers in China and Vietnam are also generated from room rental (Hao, Sliuzas, & Geertman, 2011; Suu, 2009).

In China, before the land is converted to urban land, villagers in the urban areas very often rent their houses to urban low-income population because they generally provide cheaper accommodation and easy access to urban areas. Before the relaxation of the restrictions in small and medium-sized cities in 2019, China's household registration system categorised cities into urban and rural residents of a particular location (Huang, Dijst, van Weesep, & Zou, 2014). The 2019 Urbanisation Plan suggested relaxing *Hukou* restrictions in some cities, and further changes were also enacted in 2020 to direct local governments to promote basic public services for permanent residents and improve urban infrastructure for increased urban populations. However, many migrants from rural villages still cannot gain *Hukou* in the urban areas in which they work (Zhang, 2019). Without urban *Hukou*, migrants cannot rent in the formal urban housing market; thus, the only option for affordable shelter is found within *Chengzhongcun* (Hao, Geertman, Hooimeijer, & Sliuzas, 2013). In rural villages in China, each household has plot (*Zhaijidi*), which is generally set up as 150m<sup>2</sup> in official documents, including the courtyard areas and dwellings (Wang et al., 2009, pp. 960). The residential plots are marked by network of surrounding small alleys. During the urban development process, the spatial arrangement between residential plots remains unchanged, but villagers added several-storey constructions on their original houses; some extending to six to nine

storeys to maximise returned profits from renting (Wu, 2016). Owing to densification process and self-built practice, although there is a network of alleys to separate buildings from different families, in practice, the gaps between two buildings are too small, and the majority of construction in *Chengzhongcun* are referred to 'handshake' or 'kissing' buildings as buildings are too close to each other (Chung, 2010; Lin et al., 2012).

In Vietnam, the conversions of agricultural land for new urban projects have shortened the distance between villages and urban areas. As roads have been built or upgraded, rural migrants and students come to villages to hire accommodation. At the same time, villagers need to find new sources of livelihoods. Realising benefits of building rental accommodation, villagers have invested in building constructions for rent in courtyards, gardens and ponds (Fanchette, 2016). Recent studies (Le et al., 2023; Suu, 2009) estimated that about 60 to 80 % of households in the village lease accommodation. Since 2014, the Vietnamese government has lifted restrictions of registration status for migrants. They can buy or rent social housing in cities. Despite that, due to rising demand for accommodation, social housing is almost out of reach for rural migrants. As villagers want to maximise number of living spaces for renting and commercial activities, there is almost no gap between buildings in *Làng trong phố*.

### 3. Research methods

This study explores morphogenesis of ViCs in the Chinese and Vietnamese contexts, and the key data source is Google Earth along with relevant database including maps and planning policies, which are digitally published. While numerous studies have examined Chinese ViCs, such study mainly focused on context of large metropolitan such as Shenzhen, Guangzhou and Beijing. Satellite images in the early 2000s in those cities are rarely illustrated original spatial characteristics of ViCs. In Vietnam, the study of ViCs is rare although the phenomenon has frequently been highlighted in newspaper and local studies. Based on informed approach and experience of researchers, the authors selected 6 case studies in Kunming (China,) and Hanoi (Vietnam). In these cities, urban development can be more easily tracked in recent years and produces relevant materials and reports of ViCs that allow observation of the physical transformation of ViCs.

There are several criteria to select study areas. Firstly, case studies should represent different development stages, and locating in urban areas. Previous studies have shown that there are different stages of transformation (Hao, Geertman, Hooimeijer, & Sliuzas, 2012; Wang et al., 2009). Each stage might be associated with overlapping changes including expansion, densification intensification (Hao et al., 2013). In each city, three case studies have been selected in urban districts to represent different stages of development including those demonstrate: full integration (Villages that are fully surrounded by urban projects with no farmland left), villages in peri-urban areas (Villages that are partly surrounded by urban projects and have a small amount of farmland), and initial transition (Villages, which are generally surrounded by farmland). Secondly, to enable comparative study, particular conditions of ViCs in selected cities such as ViCs in hillsides or in flood prone areas have been avoided. All case studies are situated in relatively flat terraces and surrounded by farmland in the early 2000s. Also, as ViCs in historical city cores might be transformed differently due to policies and development approaches before the economic reforms, ViCs in the city cores were excluded in this study. Thirdly, a reasonable high-quality satellite images should be available for the selected study area.

As size and growth of ViCs are diverse, each frame (1 km × 1 km) must include village building layout, key access networks. The footprints of building and access networks were tracked for 3 different time periods with intervals between 7 and 9 years since the early 2000s to illustrate the transformative process. The distinctions of building footprint and access networks have been colour-coded (red, orange, and yellow) in each map.



Given that the objective of this study is to analyse the morphogenesis of ViCs using the Google Earth and relevant street view database, it is essential to highlight the accompanying methodological challenges. There are three approaches to extract data from satellite images: visual interpretation, pixel-based approach, and object-based approach. Visual mapping interpretation is more accurate than automated methods (Baud, Kuffer, Pfeffer, Sliuzas, & Karuppannan, 2010). This approach is also a learning process that reveal morphological patterns. Nonetheless, this approach is fraught with danger. Examples of this include vegetation that obscures the objects of interest, narrow alleys or buildings, unclear roofing materials, shadow, and upper-level cantilevers. As a result, a completely unbiased digitization is impossible. Because the mapping procedure is heavily reliant on satellite image quality, any findings may be influenced. Second, previous studies have identified various types of incremental adaptations in ViCs, such as modifying domestic spaces and adding temporary structures to the roof and balcony (Van Oostrum, 2018; Thinh and Gao, 2021). As this study focuses primarily on the neighbourhood scale, it is outside the scope of this study to analyse micro-scale construction increments. Even though the socio-economic conditions can be reviewed in the literature, it was difficult to track tenant conditions, legal status of buildings, and plot features across study locations due to limited data availability. Thus,

additional morphological studies are required to corroborate the findings.

#### 4. Morphological characteristics of ViCs in China and Vietnam

##### 4.1. Spatial transformations of ViCs in Kunming, China

Kunming (Co-ordinates: 25°02'33"N 102°42'58"E) is a socio-cultural and economic centre and provincial capital of Yunnan province in Southwest China with a population of approximately 4.2 million in 2018 (United Nations, 2018). The city is situated in the Yunnan-Guizhou Plateau with an elevation of 1890 m above sea level next to Dianchi Lake. Despite the city was surrounded by mountains and lake, traditional trade routes connected Kunming to other regions through the ancient Southern Silk Road (or Tea and Horse Road). The Yunnan-Vietnam Railway, built in 1910, also promoted the vigorous development of trade in commodities and cultural exchanges between Kunming and Hanoi, and had significant impacts on the transformation of Kunming city. The Kunming city core was developed over a long history. In the Ming Dynasty (1368–1644), Kunming grew as a political centre in the region with ceremonial significance and gained more orders of the streets' arrangement in the city planning within the walled areas; there

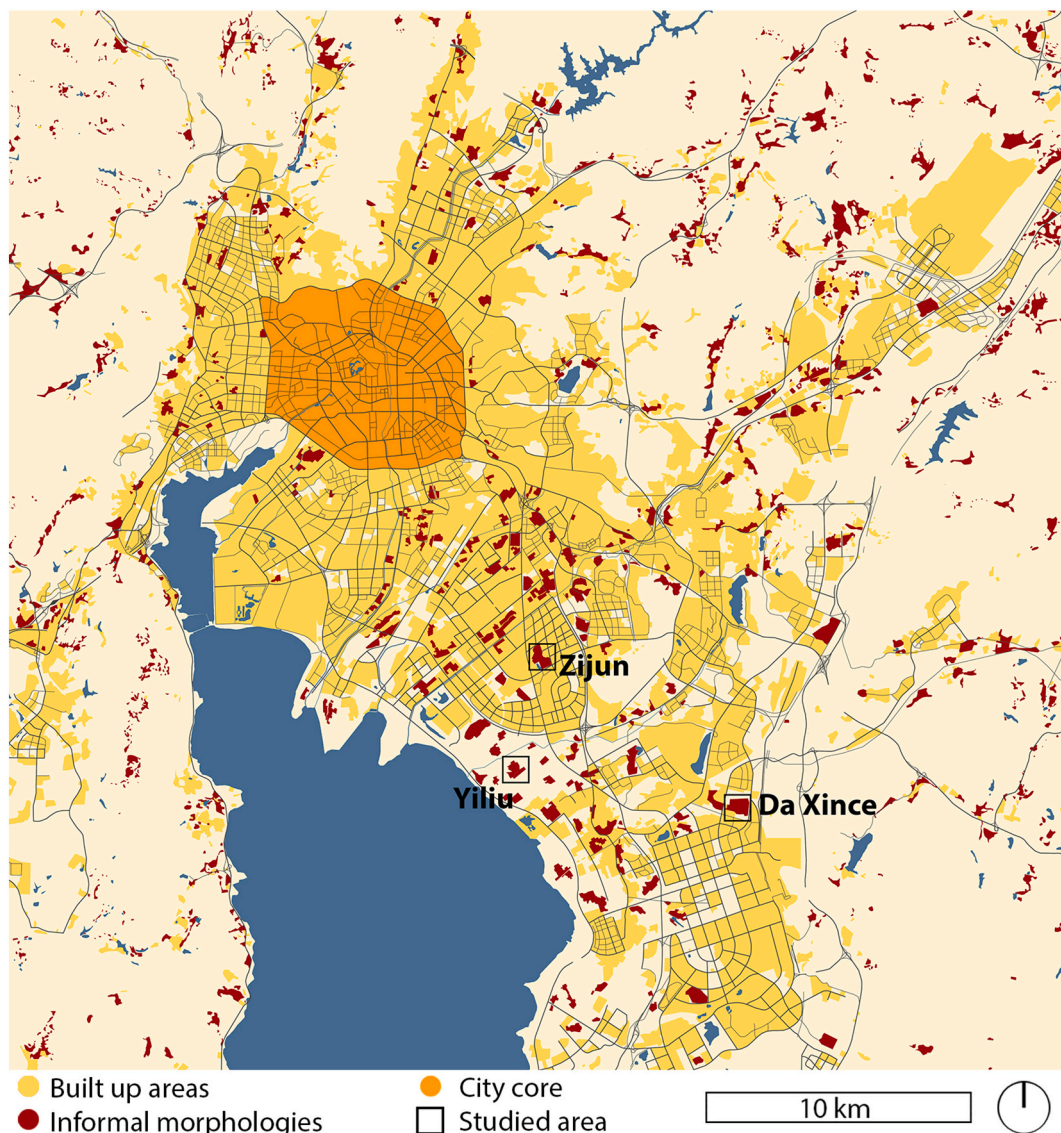


Fig. 1. The spread of ViCs in Kunming (40 km × 40 km) (Based on the morphogenic features showing on satellite image in 2021).

were also residential areas situated outside the walled areas, mostly on the south side of the city. After the city walls were eventually demolished starting from the 1930s the city core expanded and currently consists of historical town and urban areas within the ring road 2 (Fig. 1) (Gao & Temple, 2018). The city has experienced rapid urbanisation and urban development in recent decades, driven by economic development, transportation system improvement, and local planning policies (Schneider, Chang, & Paulsen, 2015; Vandamme et al., 2019). Due to rapid changes, various ViCs can be found across the city (Gao et al., 2023).

Before the economic reform in 1978, the central government gave priority to cities in coastal and central regions (Schneider et al., 2015). As an inland city, the development of Kunming mainly focused on industrial construction (Wu, Cheng, Liu, Han, & Yang, 2015). Since the economic reform, Kunming has become one of the key Chinese cities in attempts to forge a regional sub-grouping with neighbouring countries and act as gateways to other countries in Southeast Asia and South Asia (Wu et al., 2015). In this regard, numerous projects have been implemented to transform the landscape and infrastructure. From 1996 to 2010, major developments included the renewal of the city core, and urban expansions. The city has been rapidly expanding since the World Horticultural Expo in 1999, when many new roads, bridges and buildings were constructed for the Expo. The expansions included the development of four sub-cities, and these new urban areas and the historical core are being inter-connected by a robust transit network (Liu, 2002). In 2003, a new strategy was approved outlining development strategy for the period 2008–2030. The strategic framework defined the increase in built-up areas in the southeast, northwest, and northeast of the city core; together with the modification of the industrial structure and rapid development of tourism-centred industries. New Kunming City has been designed as the culmination of a number of urban expansion plans. In the urban development process, many urban projects are locked in competition with nearby cities and/or regions to attract investments. To build infrastructure, the local government has a reliance on extra-budgetary sources of income which might come through projects using rural land (Wu & Waley, 2018).

Similar to other Chinese cities, the planning approach in Kunming is to redevelop rural areas into newly built neighbourhoods under the control of municipality (Gao et al., 2023). There are about 380 *Chengzhoncun* in the greater urban area of Kunming and plans are set to redevelop those into fully urbanised areas. Local government took the leading management role on clarify the ownership and compensation to villagers on the requisition of rural land. Recently, various *Chengzhoncun* have been totally redeveloped. Fig. 1 illustrates the distribution of remaining *Chengzhoncun* which has informal morphologies, and locations of study areas.

Zijun Village is located in Guandu District (Co-ordinates: 24°57'05.55"N 102°46'22.10"E), 9 km away from the city centre of Kunming. In 2009, the developer who won the bid for the reconstruction project made plan for the development of the Zijun Village. The plan was to invest 5 billion RMB to relocate the villagers and develop the area as an urban complex consisting of residential areas, commercial areas, and office buildings, with a total development area of about 0.75km<sup>2</sup>. The development of the project would be governed by guiding principles set up by the Planning and Design Institution of Kunming to put emphasis on 'renovation' and 'reconstruction', and to consider optimal urban structuring as the top priority of urban village renovation projects. The proposed projects also need to maximise the overall profits of the renovation project and adopt the 'one village one strategy' approach according to the government Suggestion (Gao et al., 2023). For the stage of demolishing the existing buildings, the requirements for the developers include negotiating and signing off the demolition and resettlement compensation agreements with all villagers. The relocation projects for villagers, however, were affected because people who were in charge of the demolition company were suspected of criminal offenses, so the contract was terminated (Kunming Tendering Website,

2021). In addition, due to a large gap between compensation fee and market price, there would normally be an extended period of negotiation of the accepted compensation rate for relocation project (Wu & Waley, 2018). In 2001, there were two morphogenic patterns of buildings and access networks in the village (Fig. 2). The historical core of village had informal layout in the Northeast, while previous extensions had regulated layout in the South and West. The courtyard house built using earth and wood was main building typology in the village. Building plots in the historical core in the village had a size of about 90m<sup>2</sup> to 120m<sup>2</sup> while plots in extensions had a common size of 100m<sup>2</sup>. In 2010, a number of new projects had been built around the village over the previous farmland and woodland. Also, villagers also started to renovate their house from wooden and brick courtyard houses to brick-concrete houses. In order to meet the demand for high quality dwellings and the improved environment, new extensions were developed on collective plots that were adjacent to the old village. Each plot in the North had a regulated size of about 150m<sup>2</sup> while housing plots in the East had a size between 100m<sup>2</sup> and 110m<sup>2</sup>. Alleys in new extensions were designed for car access with a common width of 4 m. In 2018, the village was fully surrounded by new urban projects including new sports stadium and residential areas. Building density was relatively high due to densification and intensification development. Street view from Baidu reveals that buildings along key alleys had commercial activities on the ground floor.

Da Xince Village is located in Chenggong District (Co-ordinates: 25°54'12.75"N 102°50'42.21"E), the largest of the four planned new towns with New Kunming City. In 2003, Kunming Government launched the development of Chenggong District. According to the plan, rural settlements in the district would be redeveloped, and villagers would be relocated into new neighbourhoods around their former residences (Wu & Waley, 2018). Despite the redevelopment plan, the organic structure of ViCs is largely retained, while new extensions have been built in different parts of villages (Fig. 3). In 2001, most of buildings were mainly wood structure houses, built over plots of 120m<sup>2</sup> to 200m<sup>2</sup>. A small extension had been built in the Northeast of village. In 2010, new housing layouts were built around the village. Each building in extension had a regulated size of around 200m<sup>2</sup>. Alleys built in 2010 extensions were wider than those in previous extension and historical core. In 2018, the majority of building were constructed using concrete while some original courtyard houses were retained. Evidence from the street view shows that shops were generally found in key alleys around village core.

The third case study in Kunming is Yiliu Village (Co-ordinates: 24°54'50.25"N 102°45'47.21"E), which is located in Guandu District, about 1 km away from nearest urban areas. There is no large-scale urban development project nearby, and several different morphological patterns exist in this village (Fig. 4). In 2001, extension areas were built in the North and the South of village core. While the north part of village was developed, the width of alleys was around 2.5 m, which was relatively small for car access. In 2010, new extensions had been developed and the access networks were connected to previous extensions. The plots in extensions had a common size of about 100m<sup>2</sup> to 110m<sup>2</sup> with many buildings in the south facing east-west directions. As new roads had been built and widened to boost connectivity between the village, highways, and urban areas, alleys in 2010 extensions were planned with 2 lanes for cars. In 2018, most of courtyard houses had been redeveloped into new multi-storey buildings. Street view data suggests that various shops could be found along key alleys around historical core and extensions.

#### 4.2. Spatial transformations of ViCs in Hanoi, Vietnam

Hanoi (Co-ordinates: 21°24'N 105°50'23"E) is a national capital city in Vietnam, home to about 4.2 million people in 2018 (United Nations, 2018). The city is situated in a centre of the Red River Delta, 90 km away from coast. Due to its strategic location, the city has become socio-



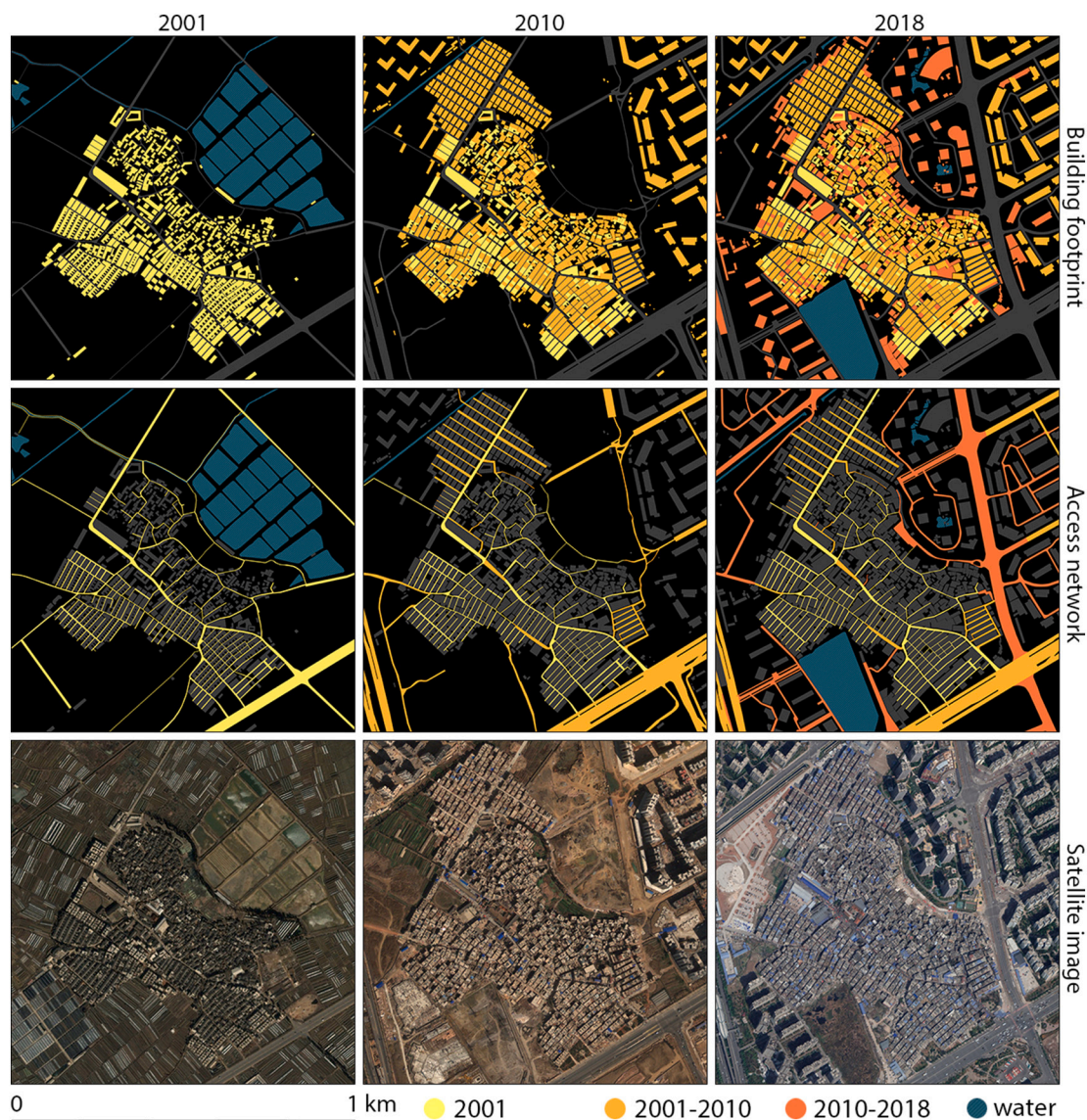


Fig. 2. Morphological transformation of Zjiun Village (Satellite image: Google Earth).

economic and cultural centre in Vietnam for many centuries. The Hanoi city core (Fig. 5), which includes four historical urban districts, is located on the South bank of the Red River. In 1010, Ly Thai To decided to move the royal city from Hoa Lu to Thang Long (Ancient name of Hanoi), significantly contribute to the urban transformation of Hanoi city. The Thang Long citadel was built with two layers of wall. The outer wall was shaped by three surrounding rivers and also functioned as a dyke to protect the city from seasonal flooding while inner wall was built to protect royal families. Between the walls, there were a historical market town and craft villages. During city expansion process, particularly in the colonial period (1984–1945), the city walls were mostly demolished while the craft villages were incorporated into city (Fig. 5). In the last few decades, the city boundary and urban built-up areas have been expanded several times (Nong, Lepczyk, Miura, & Fox, 2018) resulting in various patches of village settlements across the city (Fanchette, 2016; Leaf, 2002; Thinh et al., 2023; Thinh & Kamalipour, 2022).

During the central planning period (1954–1986), the state gave priority to industrial areas and residential areas namely Khu Tập Thể (KTT) in Hanoi. As state had special construction teams to build housing in urban areas, no private houses were allowed due to strict regulations and licences. Since the economic reform, Hanoi has been planned to

become the economic, cultural, and political centre of Vietnam. From 1986 to the 2000s, several master plans were introduced but these plans were not fully implemented. In 2010, a new master plan was introduced to expand the boundary of Hanoi. The aim of the new plan was to develop infrastructure within historical core and develop urban expansions and five satellite towns (The Prime Minister, 2011). To avoid informal development that emerged during the 1990s and the 2000s and to create an urban vision of order, civilization and modernity, a series of directives in encouraging private investment have been applied. Through public-private partnership model, land has been generally used by local government as a form of payment for constructions of large-scale infrastructure and public facilities (Labbé & Musil, 2014; Nguyen, Duan, & Liu, 2018).

As the cultural and political centre of Vietnam, Hanoi confronts the challenges of redeveloping its image on the international stage since the period of the economic reform. In the 2000s, Hanoi was at a competitive disadvantage compared to other mega cities in Asia to host international events and attract investments; therefore, the city needed to cultivate a regional identity to facilitate and expand capital investment. Due to historical interconnection between the city core and traditional craft villages in peri-urban areas (Logan, 2000), villages settlements have been kept as conservation villages during the planning process, not only



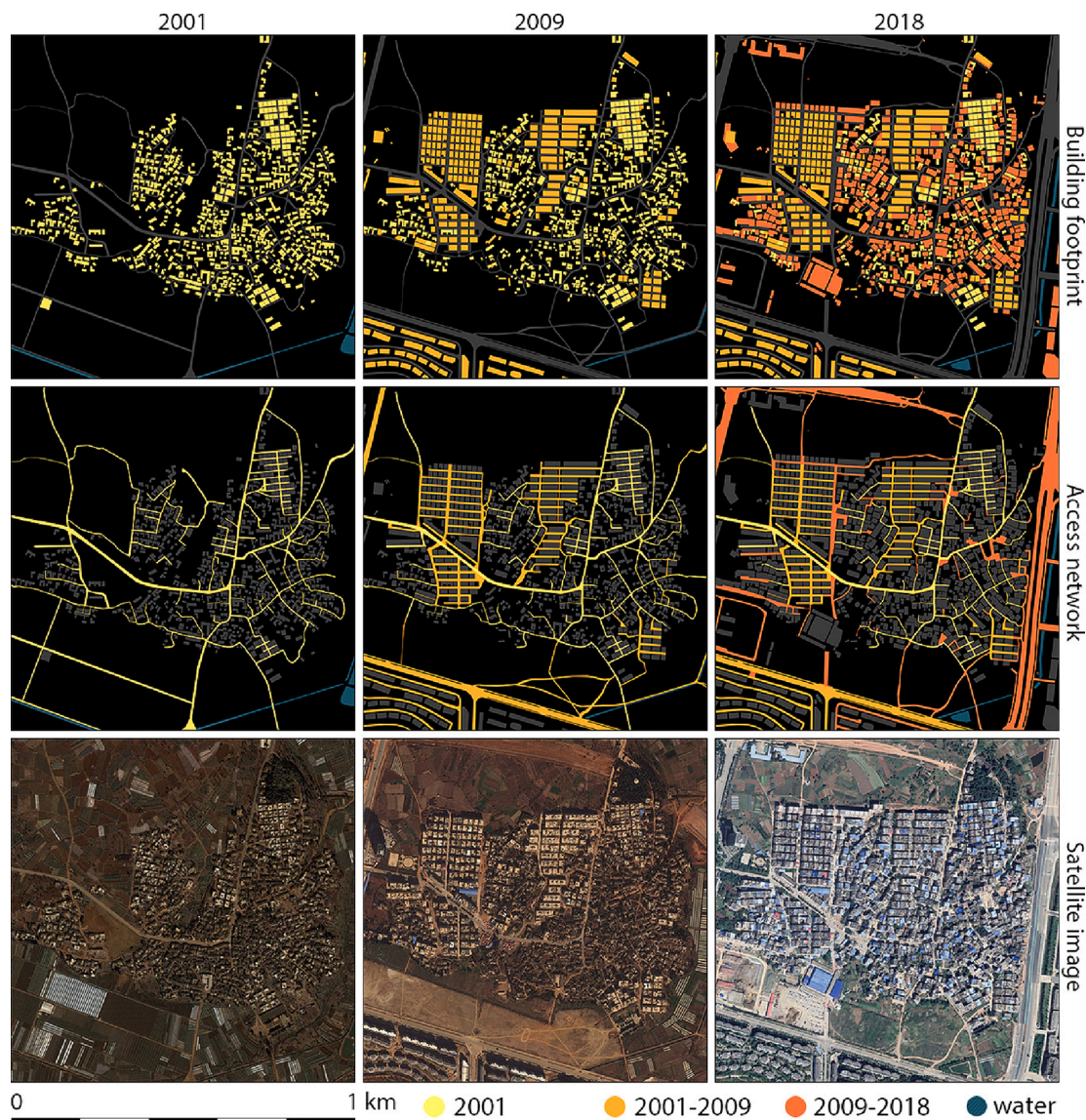


Fig. 3. Morphological transformation of Da Xince (Satellite image: Google Earth).

to reduce compensation costs but also to promote village cultures as symbols of historical development of Hanoi (van den Berg, van Wijk, & van Hoi, 2003; Nguyen, 2021). Despite that, no clear detailed planning has been created for village settlements while zoning plans simply set boundaries of existing village settlements and control parameters for the population, site coverage and building height. An absence of detailed planning means that the control mechanism that focus on population or building density are not relevant in practice and local officials have few effective planning tools to control development in their areas (Nguyen, Duan, & Liu, 2018). Fig. 5 highlight the informal morphologies and location of study areas in Hanoi. The village settlements can be easily identified through informal access networks and varied building typologies.

Van Phu village is in Phu La ward, Ha Dong district and is 11 km away from historical centre (Co-ordinates: 20°57'26.15"N 105°46'02.94"E). The village is surrounded by Van Phu new urban area as developer avoid development in existing residential villages to reduce costs of land acquisition and resettlement. Van Phu new urban area was designed to include housing, offices, schools, parks, and shopping centre. During compensation process, plots of *đất dịch vụ* (service land) were distributed to village households for economic development. The plot was only allocated if the agricultural land seized accounted for more

than 30 % of the total agricultural land of households. Fig. 6 illustrates the spatial changes of access networks and buildings in study areas since 2002. In 2002, most of buildings were traditional courtyard houses built using timber and bricks while some new buildings were built using concrete and bricks and appeared around the villages. The Van Phu NUAs started to be constructed from 2007; therefore, in 2009, new roads and buildings started to emerge around the village. Several lakes and ponds have been filled and replaced by new residential buildings by villagers. In 2018, new constructions including high-rise apartment, villas, and row houses had completely been built around the village. The size of buildings in the service land was 50m<sup>2</sup> while sizes of buildings in the village varied due to subdivisions over gardens, yards, lakes, and ponds by villagers. Buildings built by developers had larger sizes of around 90m<sup>2</sup> to 250m<sup>2</sup>. Most shops can be found along large alleys in the edge of the village.

The second case study in Hanoi is Phu Thuong Village, (Co-ordinates: 21°05'14.60"N 105°48'16.35"E) which is situated in Phu Thuong ward, Tay Ho district, 8 km away from city centre (Co-ordinates: 21°05'14.60"N 105°48'16.35"E). As the village is located in the upstream area and proximity to Ho Tay Lake, the surrounding areas were very attractive to developers during the 1990s. In 1996, the Vietnam government announced the approval of the largest foreign investment



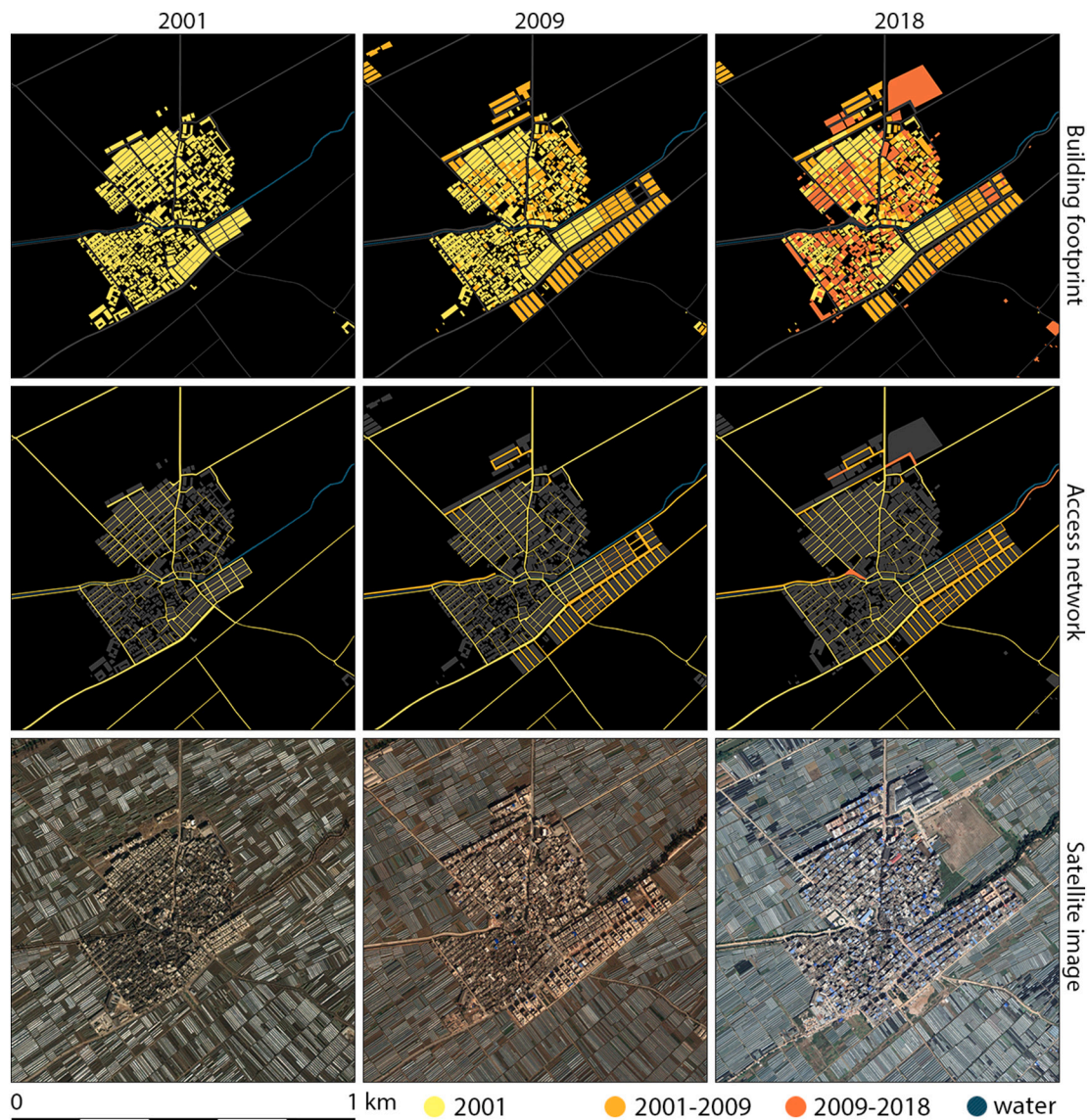


Fig. 4. Morphological transformation of Yiliu Village (Satellite image: Google Earth).

project at the time for Ciputra Westlake City to be built on 4km<sup>2</sup> hectares of agricultural land (Leaf, 1999, 2002). The project was organised around a central golf course, with lavish recreational, hotel, offices, and commercial facilities. The proposal even included a new international school, shopping centre and a hospital to ensure that the project can work as self-contained enclave. To smooth the land requisition process, the developer offered high rates of compensation and upgrading infrastructure and services in the village (Leaf, 2002). Fig. 7 illustrates the changes in the study area in Phu Thuong ward. Due to the Asian financial crisis in 1997, the Ciputra project was not started until 2002. Thus, in 2000, the village was still surrounded by farmland. Most of buildings in traditional villages were courtyard houses. The size of housing varied depending on historical context. Most of buildings had a size between 60m<sup>2</sup> and 80m<sup>2</sup>. In 2009, new facilities including schools, nursery, market, and administrative buildings were built next to the village. Along with new built-up areas, residential areas within the village also experienced changes. Many new houses, which had a size of around 25m<sup>2</sup> to 30m<sup>2</sup>, had been built around the villages. To increase living spaces, new concrete buildings had been built with 3 to 5 storeys. In 2018, buildings in the Ciputra project were still under construction, but the density of buildings in the village had been significantly increased while a number of shops emerged along key alleys.

The third case area in Hanoi is a hamlet in To 4, Cu Khoi ward, Long Bien district (Co-ordinates: 21°00'00.17"N 105°54'14.40"E). As the settlement is located in the alluvial deposits of the Red River, there are currently no large-scale urban projects nearby. Fig. 8 illustrate the transformation of the settlements between 2002 and 2018. In 2002, the density of buildings in the settlements was relatively low. Most of buildings were courtyard houses, surrounded by open spaces and gardens. In 2009, new building typologies and forms had started to emerge within the village boundaries. In 2018, a golf course had been built in the South. The street view shows that there were not many shops, but various workshops had been built within the settlement.

### 5. Discussion

The initial review in Section 2 illustrates some of the similarities and differences in land policies, urban planning, and visions of cities, modes of governance, and informal housing in ViCs in China and Vietnam. This study illustrates six selected case studies in Kunming and Hanoi regarding buildings and access networks (Fig. 9). It raises two key questions which will be discussed in section below. What is the role of ViCs in urban planning? How does incremental development in ViCs differ across cities and/or regions?

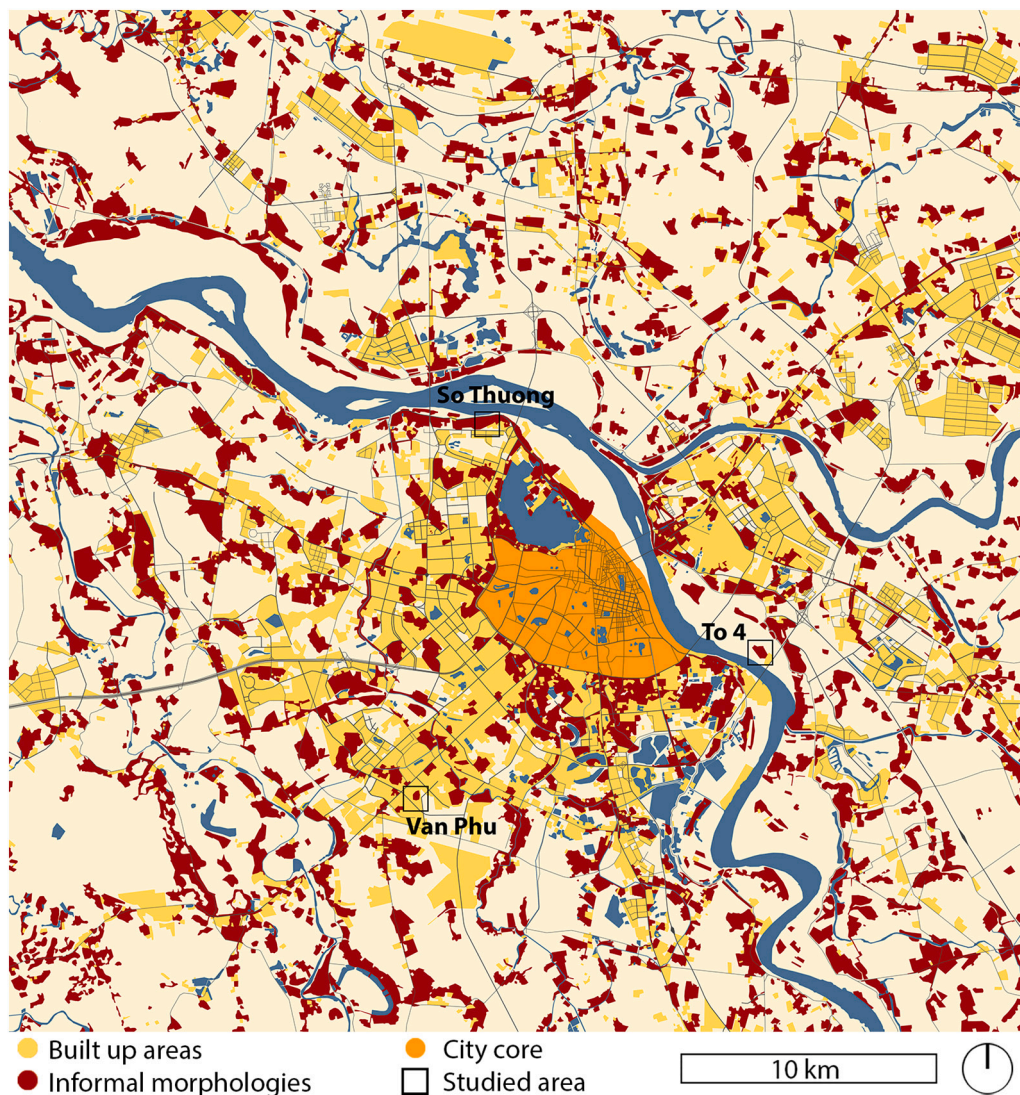


Fig. 5. The spread of ViCs in Hanoi (40 km × 40 km) (Based on the morphogenic features showing on satellite image in 2021).

### 5.1. ViCs as a mode of urban development

Both *Chengzhongcun* and *Làng trong phố* are not built by developers, and both these settlements used to be rural villages. Although the expansion of city territory is not a new phenomenon, there is a growing concern about the implication of rapid urbanisation in developing countries has been shaped by the modernist development. Thus, this phenomenon raises a question about visionary of city in countries in the Global South. Increasing economic and cultural linkage through globalisation may have greatly influenced the image of cities. Such images attempt to create world-class standards. In this regard, the decision-making is not just on the local constitutions, but also as part of conscious strategies aims at attracting capital investment through the increased amenity value from building the modern cities (Leaf, 2007). This practice converted large amounts of conversion rural land into industrial, commercial, and urban residential areas. These might be termed eco cities, hi-tech cities and smart cities that allow for efficient city management and urban order while the conservation of rural identity and spatial characteristics in former village settlements are not clearly identified. Yet, considering their roles as sources of shelters for urban poor and socio-cultural identity, their invisibility in development plans and policies of upgrading during the city expansion process is remarkable. Many of the ViCs are being envisioned as a waste of spaces

as demand for urban land has risen, and suggesting they should be totally replaced by modern building complexes as part of long-term development.

Previous research has demonstrated that the state has the power to determine what is informal and what is not (Roy, 2005). While ViCs are not created by architects or planners, living conditions can be improved if responsive measures are used. In formally planned areas, planners, urban designers, and architects systematically determine land use, street configurations, and building architecture. In contrast, the characteristic order of informal settlements tends to be challenging to identify and may be misinterpreted as disorder (Marshall, 2009). Informal urbanism in ViCs comply with unspoken rules, social norms, local knowledge, topography, the availability of tools and materials. Misconceptions that ViCs are chaotic reflect views about local governments as controller rather than as facilitator. Informal development within ViCs is similar in form and process of development to the natural growth of historical cities and towns before the introduction of industrial revolution and social engineering into city planning. They are similar in a number of ways to organic towns, which one first evaluation appears to be chaotic but actually is highly ordered. The concept of regulations in urban planning should not be restricted to the geometry of urban spaces but should also include the coherence between community needs and the configurational structure of such areas. In this regard, it is important for





Fig. 6. Morphological transformation of Van Phu (Satellite image: Google Earth).

local governments to recognise ViCs as mode of urban development (Dovey, 2019; Harris, 2018; Roy, 2005) in which architecture and urban design are co-evolved over time in respond to local needs, and different set of regulations can be applied to improve living conditions in ViCs during city expansions.

Buildings in both *Chengzhongcun* and *Làng trong phố* are primarily developed in response to socio-economic changes rather than following regulatory framework and planning. In both cities, the planning process is managed through top-down system to attract investments and develop newly built urban areas. The local governments play monopolised role in planning process and make decisions to convert rural areas into urban areas. In response to socio-economic changes after land acquisition, local residents modify their houses through self-built practices to meet their needs and to accommodate commercial activities (Fig. 10). Three cases in Kunming illustrate that most buildings in the early 2000s were wooden houses while buildings in 2018 were mostly built by concrete and brick. New buildings often had 3 to 6 storeys with different functions. Previous studies have shown that in *Chengzhongcun*, households generally occupied one floor and the remaining spaces are leased out (Wu, 2016). Similar conditions can also be found in *Chengzhongcun* in Kunming (Gao et al., 2023). Since leasing space for shops generates higher rental income than renting residential accommodation, ground

floors in key alleys and streets are commonly used as local shops such as for groceries, books, video-CD, or furniture while upper floors are used as living spaces and rental accommodation. In Hanoi, during the early 2000s, most buildings were one-storey courtyard houses built using timber and brick. Since 2009, a number of newly built buildings constructed using concrete have started to appear in different parts of the study areas. If the houses are located in the main alley or streets, villagers generally set up the shops including convenient stores, grocery shops, café, small restaurants, hair salons in their houses.

Despite the fact that ViCs were not planned by architects and city planners, various aspects of ViCs are associated with more sustainable forms due to their diverse densities and building typologies, walkability, and functional mix which support local needs. Due to various narrow alleys and no turning points in village cores, there is limited car access in ViCs. It means that residents rely on motorbikes and walking. Most alleys in ViCs are shared by residents who maintain and supervise their use and are engaged in cleaning the public spaces. Therefore, narrow alleys remain protected from strangers and allow them to function as extensions of the home. More importantly, it helps to build community ties. Residents can chat while children can play along the alleys. Those social aspects present in ViCs are exactly what city planners, urban designers and sustainable agendas are calling for in community design.





Fig. 7. Morphological transformation of Phu Thuong (Satellite image: Google Earth).

The criticism of ViCs was mostly directed at two issues: unregulated housing outside of the regulatory order and ineffective infrastructure and facilities. The majority of buildings in ViCs are often built without following proper procedures. Households frequently add more stories or cantilevers without the required structural supports. Furthermore, many buildings lack access to daylight and ventilation. The amenities are inadequately built. The appropriation of public spaces in the alleyway restricts access for public vehicles and emergency access such as for fire engines. Meanwhile, ViCs have small and dark alleyways that are excellent for illegal trading, prostitution, and crime due to a lack of appropriate supervision. All these factors contribute to the negative images of ViCs in the mass media that push local authorities to take more aggressive actions (Chung, 2009; Zhang, Zhao, & Tian, 2003). Nonetheless, making premature assumptions about the quality of the living environment in ViCs might lead to a loss of local identity, and affordable housing for low-income groups. The number of ViCs is likely to increase in the next few decades as cities in the Global South continue to grow in size and population. Demolition and resettlement plans are not the best options because planners rarely consider the actual livelihood strategies of the urban poor, and it also accelerates incremental development in settlements in peripheral areas (Wu et al., 2013). As such, it is crucial for cities in the Global South to seek a better understanding of morphologies

of ViCs before deciding any conclusions regarding how they can be redeveloped and upgraded.

### 5.2. Regional variations

The dynamics of buildings and access networks in ViCs are not strongly associated with the development stages. Previous studies suggest that the rural landscape around cities have been quickly transformed while local livelihoods are no longer dependence on farming activities (McGee, 1991; McGee & Shaharudin, 2016). This study confirmed that due to socio-economic changes since the economic reforms in 1980s, village settlements in China and Vietnam have radically changed in response to new living conditions, and most importantly there is no clear distinction regarding morphological transformation between villages in peri-urban areas and villages surrounded by urban areas within each city.

While noting striking similarities regarding rural background and incremental development of ViCs, there are prominent differences between *Chengzhongcun* and *Làng trong phố*. In China, rural land use is legally divided into three types: farmland, homestead land and collective construction land. The size and location of homestead land are fixed and allocated by township government. The sizes of building plots are

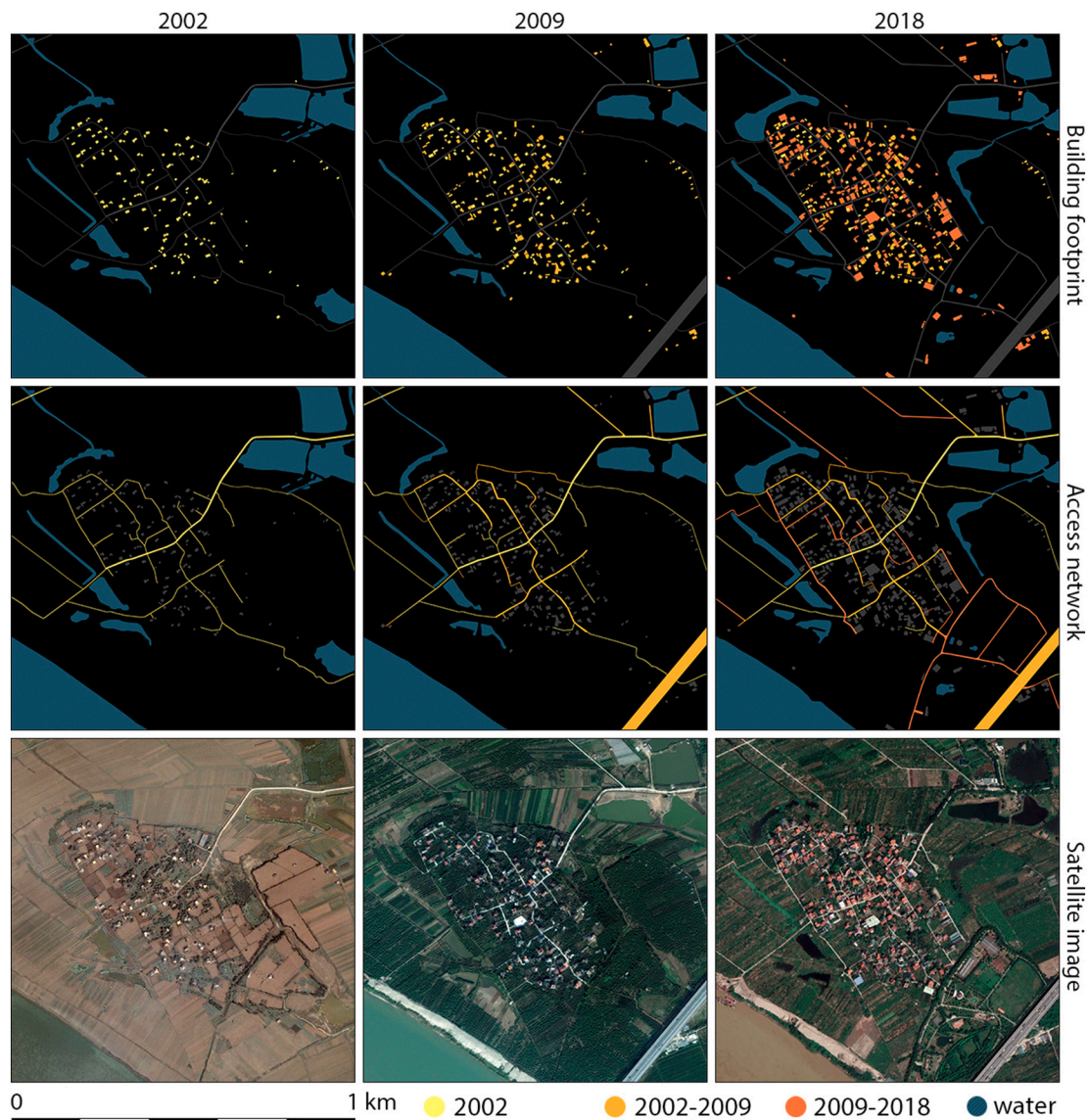


Fig. 8. Morphological transformation of To 4 (Satellite image: Google Earth).

between 90m<sup>2</sup> to 150m<sup>2</sup>, covering all housing plots. Due to urban development process and natural growth of population, a percent of agricultural land will be redistributed to villagers for housing development via collectives (Smith, 2014; Wang et al., 2009). As presented in this study, new expansions in *Chengzhongcun* in Kunming have been arranged in orderly rows and fully provided with services. The housing plots in expansions are slightly larger than those in historical core. Over time, the gross coverage increased from 1.2 to 1.6 times in selected case studies. The alleys in new extensions are well connected to allow car access while access networks in historical cores are mainly cul-de-sac alleys with no turning points. The relations between extensions, village cores and surrounding neighbourhoods are varied depending on socio-cultural conditions. Although villagers' self-construction and redevelopment activities significantly change the built environment in the village settlements, the housing plots and access networks are still organised and managed within the scope of the village management system (Gao et al., 2023). In surrounding urban development projects, developers have to follow guiding principles for urban areas since agricultural land have been converted from rural area to urban area.

In Hanoi, it seems that a clear boundary of residential areas has been set to limit the growth of homestead land, but a property market plays significant role in morphological transformation in *Làng trong phố*. To

avoid informal development, since the 2000s, a conversion of agricultural land to residential land should be permitted by the local authorities and developed by developers. Thus, there is no large-scale expansions by villagers over farmland. Despite that, there are incremental developments over gardens, and ponds within the residential plots. As the incremental development is based on self-divisions by individuals and households, there are no clear patterns for housing plots and building typologies, but it seems that a majority of new buildings have tube shape typologies, which is long and narrow. Over time, original plots have been divided into smaller housing plots, and villagers would frequently sell these plots to outsiders or distribute their residential plots to their heirs. As the incremental development in *Làng trong phố* is aimed to maximise benefits from property sale, villagers have little interests in investment on new access networks within residential plots. The gross coverage in Vietnamese villages increased from about 2.2 to 6 times over 20 years. The densification process in selected study areas is very similar with other villages in Hanoi (Thinh & Kamalipour, 2022). Although some alleys have been upgraded and widened over time, the organic layout of alleys remain unchanged.

In order to explain the morphological differences, it is important to note that there are different land policies and management modes with regard to ViCs in China and Vietnam. As highlighted in Section 2.1,



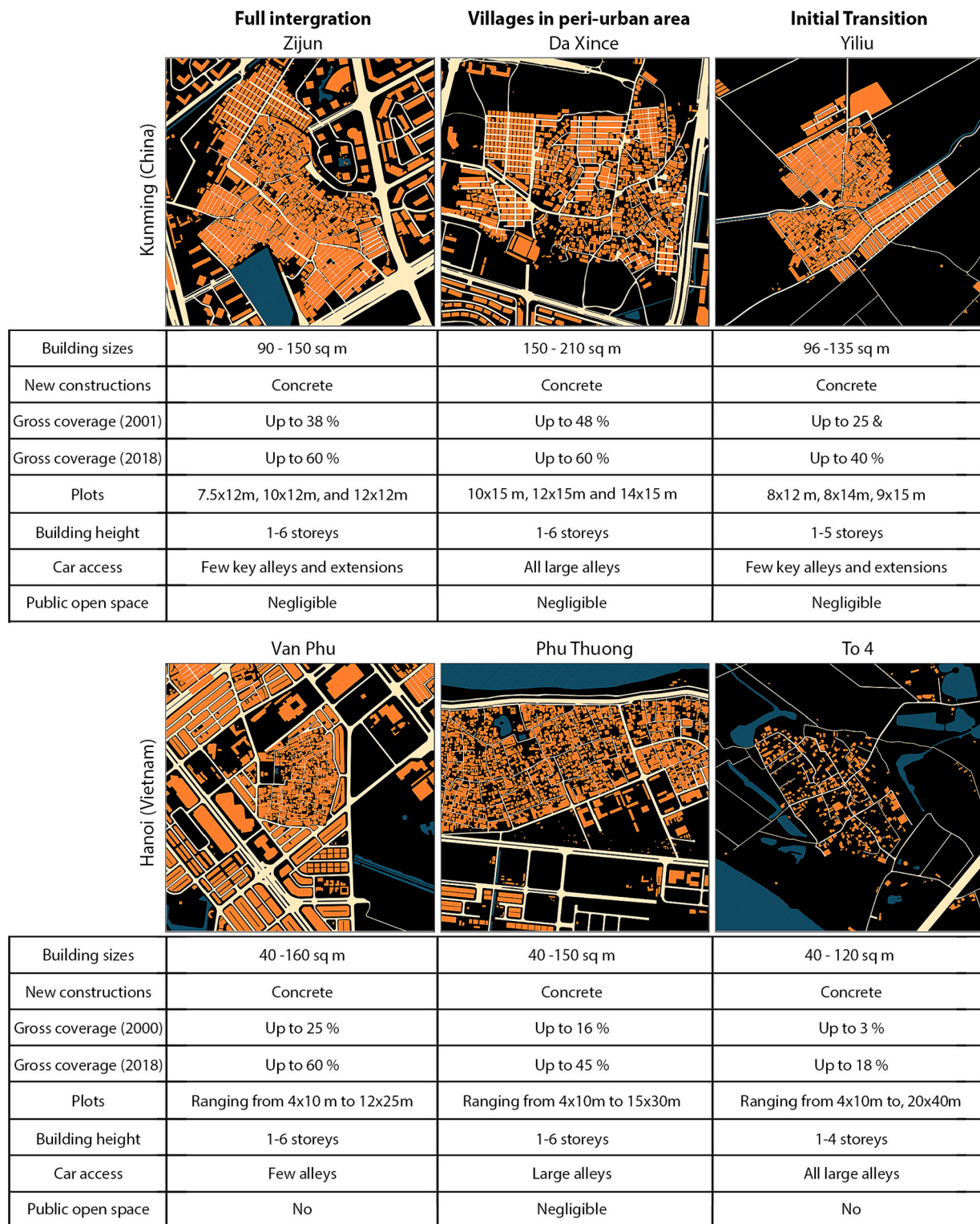


Fig. 9. Comparative morphogenesis of ViCs in Kunming and Hanoi.

although the ideology of land belongs to the people have been introduced in both China and Vietnam, in practice, the ways of how land use rights and management modes work are slightly different. In China, the planning generally aims to redevelop ViCs through large-scale projects, but rural land has been transformed into urban land when those urbanisation projects are implemented. Meanwhile, owing to collective ownerships, the village committees act as representation of villagers to manage collective properties and negotiate with local government. In

many cases, the developers also need to provide facilities that are benefit the local communities as part of the development projects. By contrast, the planning power in Hanoi has been exercised with much greater resistance. As land use right is assigned for each household since the economic reform, land use rights within village settlements can be legally transfer from villagers to other. Compensation process is based on one-to-one negotiation. As a result, it is challenging for local governments to redevelop village settlements since each household has its own



Fig. 10. Buildings and alleys in Chengzhongcun in Kunming (Top) and in Làng trong phố in Hanoi (Bottom).

requirements and expectation about compensation rate. To avoid compensation cost, developers tend to avoid village settlements. Since the rural village settlements has been transformed into urban areas, local authorities have responsibility to improve facilities and living conditions.

## 6. Conclusion

ViCs development in Kunming (China) and Hanoi (Vietnam) play important roles in providing shelters for diverse communities during the rapid urbanisation processes. Although the planning processes are managed through top-down systems, the diverse practices and small scale and cost-effective tactics contribute primarily to the transition from rural to urban live styles in both places. The differences between ViCs developments are due to different modes of management and land use rights. Housing plots and access networks in *Chengzhongcun* are organised by village collectives. In Vietnam, the main changes in *Làng trong phố* focus on increased densities of the houses due to self-divisions while there are few changes to access networks.

While the incremental development of access networks and buildings in *Chengzhongcun* in China and *Làng trong phố* in Vietnam share some parallels and differences, it is still too early to draw any generalised conclusion. As this paper primarily focus on three case studies in Kunming (China) and three case studies in Hanoi (Vietnam), the cases presented in this paper are not necessarily representative of each city/country as each village has its own historical development and morphological context (Thinh & Kamalipour, 2022; Wang, 2016). Also, politics of urban development and conversion of rural land to urban land vary over time and in different places resulting in various variations of ViCs, even within one country/city (Thinh et al., 2023; Wu & Zhang, 2022). Different functions and forms of surrounding urban designs, such

as education and art centres, and industrial and high-tech zones (He, 2015; Li, Cheng, & Wang, 2014; Lin, Meulder, & Wang, 2011), might influence morphological characteristics of ViCs in different ways. Meanwhile, socio-economic changes and rural migrants should be accounted for physical transformation of ViCs. Took Guangzhou and Xiamen in China for examples, the village land cover only about 17 to 20 % of total built up area but accommodate around 40 % of urban population (Lin & De Meulder, 2012; Tian, Yao, Fan, & Zhou, 2020). In Vietnam, the population density in ViCs is about 3 times higher than rural villages (Le et al., 2023). Although the functions and socio-economic conditions can be reviewed in the literature, there is no consistent database for ViCs. The information presented in this paper is not comprehensive, covering all aspects of ViCs. Thus, further studies are needed to explore impact of urban expansions on village settlements in different scales, land use types and socio-economic conditions. The extended studies should address following questions: (1) How visibility and morphologies of ViCs contribute to politics of upgrading in different countries? (2) How can local governments and communities effectively improve living conditions in ViCs? And (3) Can lessons be learned from particular context and then be applied to another?

## CRedit authorship contribution statement

**Ngo Kien Thinh:** Writing – review & editing, Writing – original draft, Visualization, Methodology, Formal analysis, Data curation, Conceptualization. **Yun Gao:** Writing – review & editing, Writing – original draft, Investigation, Formal analysis. **Adrian Pitts:** Writing – review & editing, Writing – original draft, Formal analysis.



## Declaration of competing interest

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

## Data availability

Data will be made available on request.

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