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Configurations and morphological characters of new urban centres in Hanoi

HA MINH THAI 1, & HYUNG MIN KIM 2,

1 RMIT UNIVERSITY, MELBOURNE, AUSTRALIA

2 THE UNIVERSITY OF MELBOURNE, AUSTRALIA

ABSTRACT

This research investigates the spatial characters of new urban centres in Hanoi, Vietnam, by employing space syntax and morphological mapping. Hanoi was a monocentric city centred on the Old Quarter, but rapid population growth and new economic activities have expanded the city. Like other East Asian cities, it has created 'amoeba'-like urban forms in its periphery, often dubbed desakota, where modern planned neighbourhoods exist next to, or even mix with former villages and agricultural lands. Although informality appears a significant element, Hanoi has seen unprecedented growth of formally planned residential areas, called New Urban Areas (NUAs) that have emerged in response to population growth. At the city scale, this research examines the spatial configuration of street networks in Hanoi, and the integration of these NUAs into the system. It compares the configuration of the NUAs with their surrounding neighbourhoods that have been spontaneously developed. At the neighbourhood level, the analysis explains the attractiveness and performance of streets, movements of pedestrians, motorbikes and cars, maps and compares the morphological features of various NUAs in Hanoi. Findings reveals that these NUAs are not well integrated into the spatial network of the city. The analysis at a neighbourhood level sheds light on private vehicle-favoured urban environments of these NUAs away from comfortable pedestrian movements, causing a less-vibrant street life. The research informs practices from urban planning and design to development and management on the significance of both top-down and bottom-up forces in shaping urban centres and new lifestyles in Hanoi.

KEYWORDS

Space syntax, Urban morphology, New Urban Areas, Urbanisation, Hanoi

1 INTRODUCTION

Like many other East Asian cities, Hanoi – the capital of Vietnam – has witnessed an unprecedented growth in its population caused by an influx of rural-urban immigrants. The inward flows of foreign direct investment to the region, welcomed by the Government's open-door policy, have been a global force leading to the changes in the city's spatial structure as well as its dwellers' ways of living (Thai et al., 2020). The availability of land and the easiness of land pooling and compensation have been important factors leading to the emergence of new residential areas and commercial centres on the periphery. Greenfields and under-utilised industrial areas are the most attractive targets for real estate investors' land acquisitors. These areas are transformed into New Urban Areas (NUAs), described as self-contained, compact settlements following imported models of 'Western modern city'. The NUAs usually contain a mix of (prominently) residential, commercial, leisure land use, and may also have childcare, a primary school, clinics and hospitals. During the 1990s, the NUAs of Hanoi were considered ground-breaking innovations, introducing modern ways of living that is far different from the over-crowded living environment of residents of the long-established neighbourhoods such as the Old Quarter, the French Quarter, urbanised villages and the Soviet-style collective living quarters (Luan, 2014). After approx. 30 years of being seeded into the city structure, the NUAs are no longer seen as exotic neighbourhoods but spatial units constituting the morphological mix of the city's 'desakota' (McGee, 2002), an Asian type urban sprawling area where urban residential and agricultural land uses are intermingled.

The paper employs space syntax and Conzenian urban morphology to compare the configuration and morphology of these NUAs in relation to their surrounding spontaneously grown neighbourhoods. It aims to reveal how this imported, exotic urban form has caused significant changes in the dwellers' lifestyle, social cohesion, health, and their impacts on the city's pathway to a more sustainable future.

2 LITERATURE REVIEW

While cities are building better networks of public transport and promoting local shopping strips to encourage walking and reduce the number of people's everyday trips made by private vehicles, there exists a 'last meters' problem that is connecting people from their homes to local destinations (van Nes, 2021). While the multi-scalar configuration of streets can contribute significantly to the attractiveness of these everyday walking routes to foot traffic, the local morphological characters can shape spatial conditions of these 'last meters' linkage and make them appealing (or not) to pedestrians (Hillier and Vaughan, 2007, Sevtsuk et al., 2016). Through 'movement economy' theory, Hiller (1996) underline the importance of street network in shaping city's functions. This is aligned with Alexander's 'City is not a tree' argument (1965) where he underlines the capacity of city's structure in organising functions, which is a key factor that makes a city safe and economically lively.

In Hanoi, the movement economy is clearly demonstrated. The spontaneity and informality of Hanoian's everyday livelihood are justified by a long tradition of people's self-help practices to sustain their family financially, while formal jobs are scarce and out of reach. Locations of movement-benefiting activity, such as retails and services, are strongly influenced by pedestrians and motorbike movements, rather than cars and the service catchments around carparks. In this context, the introduction of NUAs and car-dominated lifestyle are novel to most Hanoian and also to the city's existing structure, which process of growth is still spontaneously.

3 METHODS

This paper examines the configuration of 6 completed NUAs in Hanoi established more than 5 years: *Trung Hoa Nhan Chinh*, *Linh Dam*, The Manor, Royal City, Times City and Green Bay. Due to the dominance of motorbikes as a popular type of private vehicle in Hanoi, as well as the advantages that it offers to Hanoian's everyday activities, such as its small profile, ease of parking, high mobility, this paper uses combined space syntax local integration and global choice analyses (Thai et al., 2021). Global choice analysis of Hanoi indicates the potential distribution of vehicular traffic. While this measure might not be significant in predicting the potential distribution of movement-benefiting land uses such as retail which in turn attracts foot traffic, it can be relevant in the context of urban Hanoi where the motorbikes allow riders to park and shop easily. This makes major vehicular routes in Hanoi still very vibrant with economic activities and full of pedestrians. Local integration analysis is conducted within an 800 metres radius, suggesting the distribution of pedestrian movements within a comfortable 10-minute walking distance.

Figure 1 reveals the attractiveness of streets in Hanoi to both pedestrians within their 800-metres-walking radius and motorbikes in the entire city. It allows the comparison of the configurations of chosen NUAs with each other and to their surrounding neighbourhoods.

Morphological mappings of these samples demonstrate the similarities and differences of the built forms of the selected NUAs and their neighbouring spontaneously urbanised areas. The analysis focuses on major morphological variables, including street widths, street block sizes, building density and building heights.

4 RESULTS

Global choice analysis shows that all identified NUAs are located near major roads highly attractive to through-movement, which are city's ring roads and major radial roads (Figure 1a). Under such conditions, NUA residents can easily reach other areas using their private vehicles, predominantly motorbikes, and increasingly cars. Within the NUAs, the integration of streets is much lower compared to long-established urban centres, which are the Old Quarter and French

Quarter (Figure 1b). Compared with their surrounding neighbourhoods, mostly spontaneously urbanised villages, street networks of NUAs are less attractive to movements due to the lower street density (Figure 1c). The NUAs have clear and hierarchical structures, characterised by a few long and straight street segments forming a grid and plugging into the broader system via the ring and radial roads. The urbanised villages, in contrast, have a grass-roots-like network involving a few long and straight segments branching out to a larger number of short segments. Under such conditions, the streets of NUAs appear in space syntax maps as less attractive to both to- and through- movements.

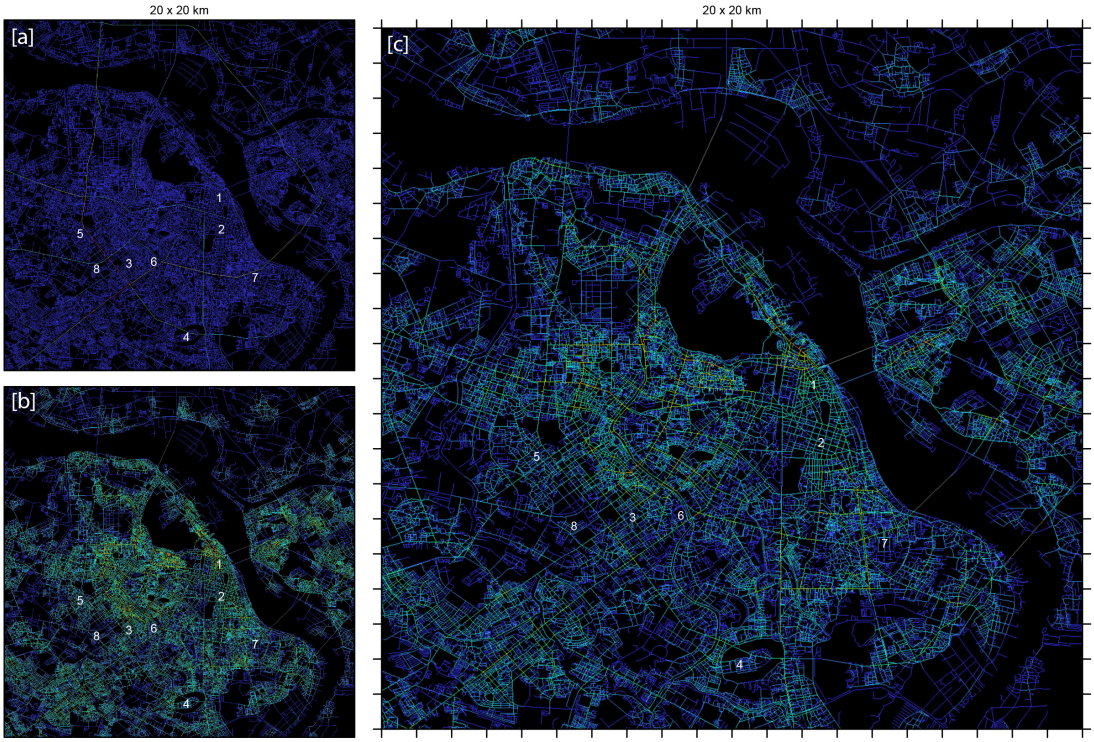

Figure 1: Configuration of street network in Hanoi. A = Choice Rn; B = Integration R800m; C = Combined integration R800 and choice Rn. Annotations: 1 = Old Quarter; 2 = French Quarter; 3 = Trung Hoa Nhan Chinh; 4 = Linh Dam; 5 = The Manor; 6 = Royal City; 7 = Times City; 8 = Green Bay

Error! Reference source not found. shows the coarse grains in most chosen NUAs, except for *Linh Dam* and Green Bay where a handful of arrays of luxurious detached villas add fine-grain buildings to the landscape. The wide streets and varying, spacious setbacks in front of each building are not an ideal condition to form shopping strips. Although the ground floor of most high-rise buildings (between 10 and 40 storeys) is designated for commercial activities, they are suitable for formal, high-yield businesses requiring large business premises, such as supermarkets and offices, rather than small-scale businesses. Only a few small business proprietors can afford and compete for a limited number of kiosks, where they can operate their family-owned stores, selling breakfast or drinks, or providing services such as hairdressing or photocopying. Many residents of the NUAs are loyal customers of small-scale street-front shops, informal marketplaces, affordable restaurants and cafés. They usually find the providers of their needs in surrounding neighbourhoods where urban management is less strict allowing the formation of

outdoor trading venues, and there are abundant small street-front kiosks suitable for low-yield businesses offering a wide range of affordable goods and services.

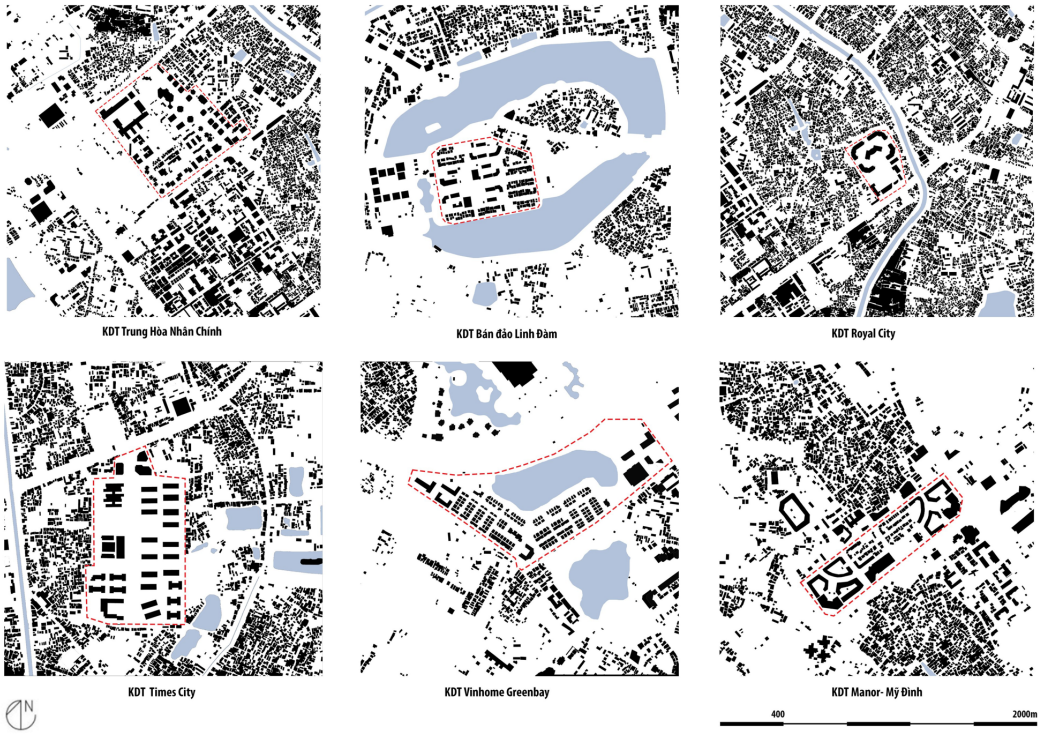

Figure 2: Urban morphology of sampled NUAs (mapped by Hiep Che, 2021)

While the networks of public space in all these sampled NUAs are not very walkable, they offer economic opportunities: high density of inhabitants generating high consumer demands, and spacious communal open spaces that are (informally) borrowable by businesses. In *Trung Hoa Nhan Chinh* and *Linh Dam* NUAs, it is not uncommon to find business activities spill over onto sidewalks and occupy open spaces. The wide sidewalks and large playgrounds are borrowed by street front café and sometimes street vendors. Locations of these pop-up, informal activities are not always aligned with the high connectivity of street, but they are often found in more quiet, segregated location, where these activities don't interrupt movement flows and targeted customers are usually local residents and workers. In the other NUAs, such informality does not exist due to strict public space management policies and enforcement made by the developers, who define these NUAs as high standard.

Over time, the spatial boundaries between NUAs and their surrounding neighbourhoods which are recognisable through the distinctive patterns of their building footprints, become blurred. This results from the 'penetration' of NUA-type high-rise buildings into urbanised villages through infilled developments on vacated factories and left-over green fields. The interfaces between NUAs and their surroundings are the most vibrant areas where small-scale, affordable shops and services flourish. Small street-front houses offer affordable premises for many family-

owned or home-based businesses, serving the overflowing customers from the NUAs, who seek more affordable goods and services provided in independent stores.

5 CONCLUSIONS

Most focuses given to sustainable cities, especially on their built environment, are on building materials and energy consumed by building functions. Inadequate attention is given to the way in which urban voids, that are streets, squares, and all other types of public open spaces, should be arranged to make them naturally attractive to pedestrians, spontaneously supportive to small-scale local businesses, and friendly to non-car-dependent lifestyles. Cities in the East are becoming more ubiquitous, catching up with the modern world, but at the same time, they generate outdated problems which many other Western cities are attempting to solve, e.g. car dependency and pedestrian-unfriendly environment.

This paper highlights the configurational and morphological characteristics of an emerging typology of urban form in Hanoi, underlines the shortcomings of these models against the criteria of sustainable development goals. It calls for better ideas to develop more suitable forms of settlement for residents in the East, who have long traditions of fine-tuning and self-organising their city, living small and healthily.

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