

Study on the dual impact of Informal Spaces in Ho Chi Minh City

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ABSTRACT

This study analyzes the impact of Informal Spaces (IFS) in Ho Chi Minh City (HCMC), Vietnam. It evaluates a new system for categorizing IFS from an urban aesthetic and management perspective. The research scrutinizes informal settlements, including shantytowns, temporary markets, and unauthorized constructions, examining their implications for urban aesthetics, public security, environmental quality, and traffic flow. While often perceived as problematic due to inadequate management and associated social challenges, these spaces also hold intrinsic value as reflections of local culture, providing critical affordable housing and entrepreneurial opportunities that underpin the informal economy. Challenging the notion of wholesale eradication, this study advocates for a nuanced approach that recognizes the multifaceted nature of informal urban spaces. It proposes targeted interventions aimed at upgrading infrastructure, improving management practices, and strategically leveraging these spaces to create valuable community assets. By offering a balanced perspective and suggesting pragmatic solutions, this research contributes to a more comprehensive understanding of informal urbanism and advocates for sustainable urban development strategies that address both the challenges and potential inherent in these spaces.

Keywords: IFS, Alley, Underpass, Apartment building rooftop, Railway

1. RAISING THE ISSUE OF IFS IN URBAN AREAS

1.1. Definition of Informal Space

Informal Spaces (IFS) refers to spaces that are not officially planned within the urban environment. This is an important aspect of the urban landscape, especially in developing countries. These spaces often form spontaneously and exist outside the framework of formal planning [1].

1.2. *The differences between the concepts of Informal Space (IFS), Informal Settlement (IS), and Informal Area (IA)*

IFS focuses on specific spaces that are not formally planned, which can be public or semi-public spaces. IFS include vacant lots occupied for trading, areas encroaching on rivers and canals, or spaces in alleys and corridors between official buildings that are occupied for living and business activities (Diagrams 1&2) [2].

Informal Settlements (IS) focus on residential areas where people live without official management or planning. IS often have

high population density, poor infrastructure, and lack public services. These areas are also prone to natural disasters or environmental issues. They could be makeshift houses on the outskirts of major cities or along canals where people migrate from rural areas to cities for work. These are often areas of land encroachment, either public or private, without building permits for residency.

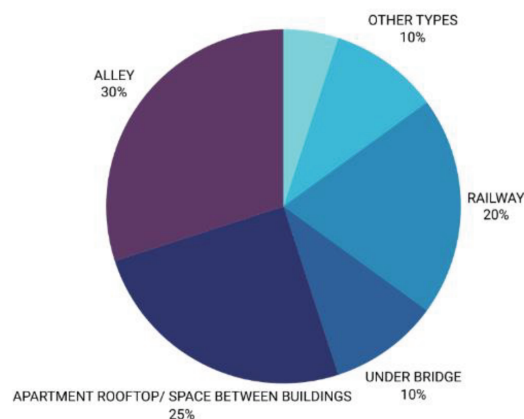


Diagram 1. Distribution ratio of IFS types according to the Ministry of Construction's survey in 2024 (General Statistics Office 2024) [3]

Informal Areas (IA) is a broader concept that includes both spaces and informal settlements, reflecting the lack of management and planning in a larger residential area. Observations from Diagram 2 show that IA also include elevated areas, such as rooftops and vacant spaces between buildings.

A survey on IFS in Ho Chi Minh city (HCMC) was conducted over a 3-month period, from June to August 2023. The survey targeted residents living in the city's IA, with an estimated sample size of around 150-200 people. The main survey methods included direct interviews and survey forms. The respondents were evenly distributed by gender and diverse in age, with those over 35 years old making up the largest proportion

(31%). Most participants had a university degree or higher (67%) and an average income of 5-12 million VND per month (40%). Their awareness of IFS was relatively high (63%), with primary uses for recreation (23%) and daily activities (31%). Residents expressed a relatively high level of satisfaction with the quality of IFS and showed strong support for their development, while also suggesting improvements to the infrastructure of these spaces (Diagram 3). Awareness of IFS was not uniform, with 37% of the population still not fully understanding these issues. Additionally, the use of IFS for different purposes is still unbalanced, with significant disparities in the rapidly developing urban context like HCMC.

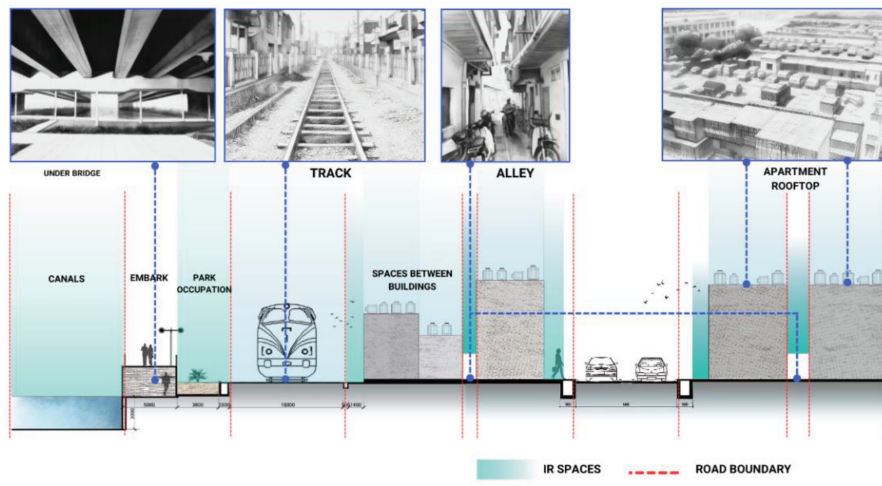


Diagram 2. Diagram showing the distribution of IFS within an urban area. Source: Authors

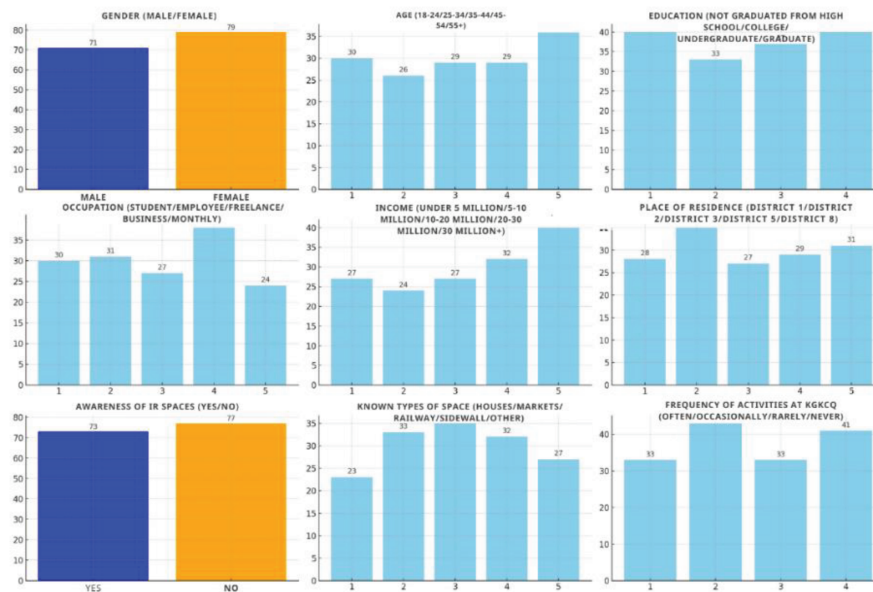


Diagram 3. Statistical chart of the survey on the distribution ratio and awareness of IFS among residents in HCMC. Source: Authors

1.3. International Studies on IFS

A study by historian Roy highlighted the negative aspects of IFS. However, she did not deny that these spaces have also provided economic and social opportunities for disadvantaged communities [4]. A major concern about IFS is their impact on the aesthetic aspects and safety of urban spaces. Two Belgian journalists, Turner and Halley, argue that these areas often contribute to the degradation of urban infrastructure and can worsen the overall image of the city, even hindering investment and tourism (Image 1a & 1b) [5]. Safety issues are equally urgent because these spaces often lack many public amenities, leading to higher rates of crime and community health risks [6].



(a) Water tanks on the roof (b) Panoramic view of the city
Image 1. Rooftops of old apartment buildings have become areas for water tanks, unintentionally degrading urban aesthetics. Source: Authors

International studies consistently emphasize both the challenges and potential of IFS. These spaces are not legally designated for a specific function, but are instead used by individuals for various activities. IFS exist in both urban and rural areas, and can be either public or privately owned. They are more common in developing countries like Vietnam [7]. However, these IFS serve as important economic centers for residents. They provide low-cost housing and business opportunities for poorer segments of the population [8]. Moreover, these spaces often demonstrate community spirit and adaptability to difficult conditions throughout the cohabitation process.

Recent studies call for a re-evaluation of urban planning approaches to IFS. Instead of viewing them merely as problems to be eliminated, as per the old perspective, there

is growing consensus that these spaces should be integrated into broader urban development strategies. These new approaches may include upgrading infrastructure, legalizing some spontaneous areas, and providing basic public services such as parks, healthcare, and playgrounds [9,10].

2. OVERVIEW OF IFS IN ASIAN CITIES

2.1. Overview of IFS in Asian Cities

In recent years, comprehensive studies on the topic of IFS in Asian urban areas have sparked a debate. Many researchers question whether eliminating and replacing these spaces with modern structures would result in the loss of traditional values that still exist in the context of industrialization through these IFS.

According to a survey on the proportion of industrial zones in Asian cities, Vietnam ranks fourth in the region with 9.8% of total industrial space, after China (26.0%), India (20.2%), and Indonesia (11.5%). This reflects the strong development of Vietnam's industry, while also suggesting the pressure of urbanization and increasing housing demand, which may lead to the formation and development of IFS (Diagram 4). In their 2011 study on IS in Southeast Asia, Dovey and King argued that these areas often represent social structures with complex economic supply and demand networks, contributing to the vibrant lifestyle of cities [11]. They assert that IFS have the potential to promote creativity and adaptation, rather than being solely associated with societal risk issues. This study delves into analyzing their impact on sustainable urban development.

In 2005, historian Roy explored the urbanization process caused by IFS in India. She emphasized the role of IFS in addressing shortcomings in formal urban planning [12].

Furthermore, she argued that informality is not the root cause of urban problems, but rather a form of urbanization that requires a nuanced understanding of the development process

of indigenous culture. The UN-Habitat study in 2015 on IS acknowledged the existence of potential problems but argued that these risks are often exaggerated, with the main focus being on public health concerns [13]. According to this report, community cohesion in IFS can sometimes lead to better social control compared to formal urban planning. Authors Brillembourg and Klumpner argue that IFS in Asia are inherently unattractive in form but have potential for environmental regeneration [14]. Their research in Latin American urban

areas shows that IFS can also be improved to some extent, while creating a unique landscape style for cities, such as graffiti art. This lesson can also be applied to Asian cities. However, it should be noted that not all studies paint a positive picture. In the famous study “Planet of Slums” published in 2006, Davis emphasized the significant difficulties faced by IFS, such as the dangers of exploitation and ethnic conflicts [15]. Based on these studies, the authors have proposed specific solutions to integrate IFS into overall urban planning.

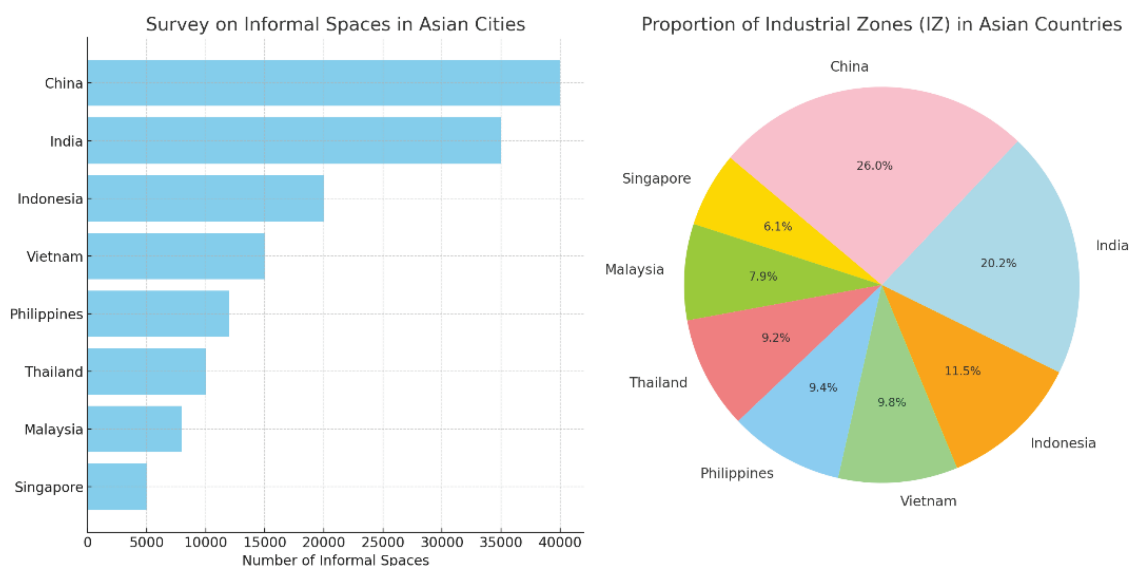


Diagram 4. Chart showing the number of IFS and the proportion of industrial zones (IZs) in Asian cities according to the Ministry of Construction’s 2024 survey (Ministry of Construction 2024)[16]

2.2. Socio-economic impacts

IFS in Asian cities play a crucial role as a “pressure release valve” for rapid urbanization. According to Saunders’ 2019 study, these spaces often function as a “stepping stone” for rural migrants, helping them gradually integrate into urban life [17]. Socially, cultural researcher López-Morales argues that IFS serve as “cultural buffer zones” where rural beliefs and urban lifestyles intersect. This contributes to the diverse and rich cultural identity of major cities [18].

2.3. Urban management challenges

Integrating IFS into formal urban planning processes poses significant regulatory challenges. In his 2017 doctoral thesis, Wang noted that the lack of official recognition for these spaces often leads to gaps in urban management,

exacerbating social welfare risks [19]. Additionally, researchers Li and Fong discuss the complexity of legal policy frameworks in Asian cities struggling to balance economic development and heritage preservation [20]. They recognize IFS as a long-term issue to be addressed rather than a temporary, short-lived spontaneous phenomenon.

2.4. Urban development strategies

There is growing public support for policies to improve IFS through infrastructure upgrades and legal recognition. In their research on urban reconstruction projects, authors Kim and Park detail successful research initiatives in Seoul. IFS have been transformed into integrated, multifunctional urban spaces with significantly improved living conditions [21]. Finnish author Kumar emphasizes the role of stakeholders, including

communities in IS, in timely replanning and intervention in the context of global urbanization [22]. International studies have shown the complexity and diversity of IFS in Asian cities. This confirms the crucial socio-economic role of IFS in maintaining effective urban planning policies. This also serves as a premise for the development of urban management models in Vietnam.

3. IFS IN HCMC

3.1. Research methodology

The study uses both qualitative and quantitative methods to ensure a comprehensive, objective view of issues related to IFS. Field surveys and in-depth interviews provide a multi-dimensional perspective from residents and experts. Questionnaires allow for broader data collection on public perceptions of IFS. This consultation method ensures that the research is practical and closely aligned with reality. Through a comprehensive survey in HCMC, the authors compare formal and IA in urban planning.

This survey was conducted from May to July 2023. This period coincides with the dry season in HCMC, facilitating access to areas with difficult conditions. This timing is also less affected by major holidays, contributing to the representativeness of the survey sample.

Survey locations were chosen in four districts: Districts 4, 7, 8, and Binh Thanh. District 4 represents an old urban area with many IS. District 7 stands out with the contrast between the new Phu My Hung urban area and old residential areas. District 8 has many areas along canals and embankments encroached by IS. Finally, Binh Thanh District combines both new and old planned areas, with diverse housing types. This selection aims to ensure the survey sample reflects the urban morphological characteristics of HCMC. Survey subjects include residents living in both formal and IA, with a total sample size of 1,200 people. The data collection method combines direct surveys, in-depth interviews, and field observations.

The software used for data collection and analysis is Qualtrics. Results show significant disparities between the two areas in many aspects (Diagram 5). While formal areas have advantages in sustainable structure (79%) and secure ownership (70%), IA show a relatively low rate of access to clean water (58%). Notably, the HIV infection rate in IA (3%) is twice as high as in formally planned areas (1.5%). This reflects the lack of public health care in IS. These findings emphasize the urgent need for new planning policies to improve living conditions and reduce inequalities between urban areas.

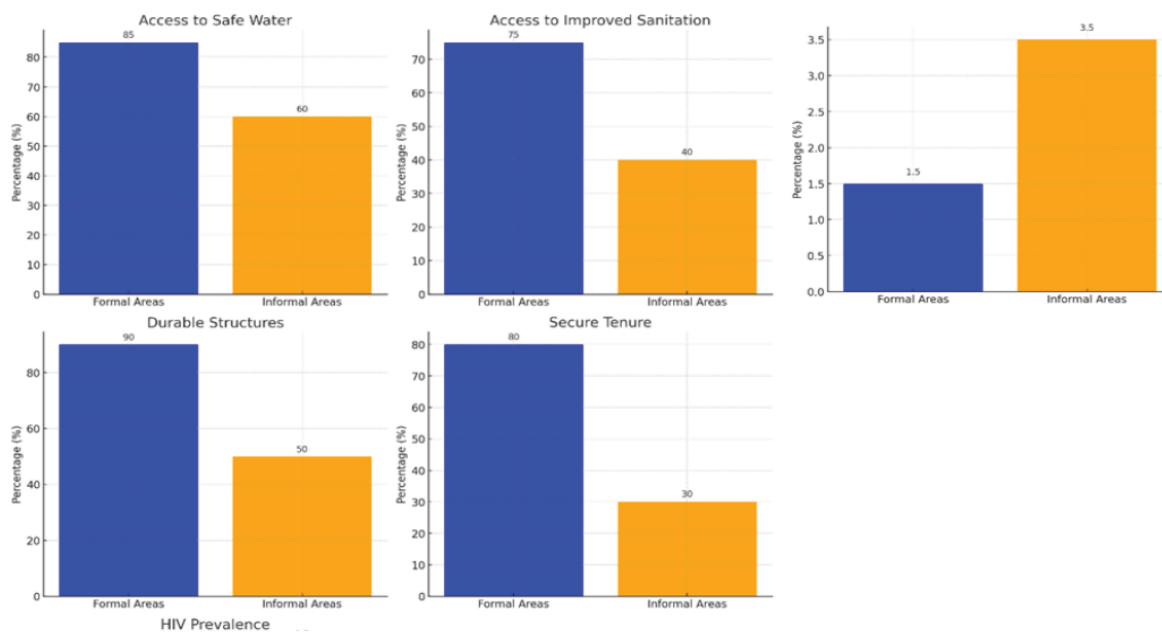
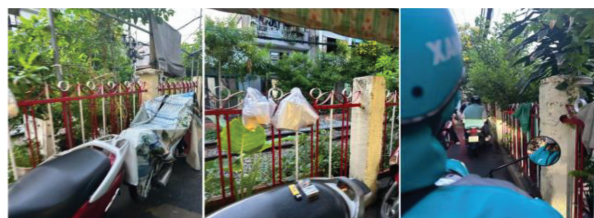


Diagram 5. Statistical chart of the community’s awareness of various issues related to IFS during the last three months (from May to July 2023). Source: Authors

3.2. Current Status of IFS in Certain Areas of HCMC



(a) Parking Lot (b) Garbage Dump (c) Clothes Drying Area

Image 2. Areas around railway tracks enclosed by fences are appropriated for various purposes by local residents: laundry drying areas, waste collection points, parking lots, etc. Source: Authors

In HCMC, the overuse of public and semi-public spaces has led to the increase IFS. Everyday business and living activities encroach on sidewalks, commercial corridors, and even public areas like railway tracks (Image 2).

Consequently, these spaces turn into makeshift, semi-permanent architectural clusters. Alleys and side streets, instead of being open passageways, are being used as dumping grounds for trash, leading to environmental pollution and obstructing traffic. Illegal encroachment on vacant lands and parks also occurs frequently in the context of urbanization. Even in apartment complexes and collective housing, communal spaces are often misused. Shared corridors are turned into personal storage areas or even used for business purposes. These issues not only diminish the quality of life for urban residents but also create significant challenges for sustainable urban management and development in the future.

3.3. Challenges in Urban Regulation and Planning

Table 1: Statistical table on the development of IFS and average housing area per capita in HCMC classified by Year and Type of Housing (from 2014-2022) [23]. Source: Ministry of Construction 2024

Year	Estimated Number of IS	Average Housing Area per Capita in HCMC by Type of Housing (m ²)		
		Semi-permanent Housing	Temporary Housing	Rudimentary Housing
2014	13981	19,0	16,3	29,6
2016	15793	18,3	12,9	18,0

2018	20135	19,8	20,9	17,5
2020	29102	19,5	22,0	14,8
2022	32182	20,7	0,0	20,0

Currently, there are no official statistics on the total area of IFS in HCMC. However, according to expert estimates, this area may account for 30-40% of the city’s total built-up land area. IFS are scattered throughout the districts of HCMC, concentrated in areas along rivers, canals, resettlement areas, and old residential areas. Many of these spaces are concentrated in suburban districts such as Binh Tan, Binh Chanh, and Hoc Mon. They are associated with simple and semi-permanent housing types (Table 1).

Based on the surveyed data, we can observe that there is a clear correlation between the development of IFS and the increase in industrial land area in HCMC from 2008 to 2022 (Table 2). Both indicators have increased significantly, with the estimated number of IFS rising from 10,710 to 32,182 (nearly tripling) and the industrial land area increasing from 1,500 ha to 3,100 ha (more than doubling). Notably, the period 2018-2022 witnessed strong growth in both factors, indicating a close relationship between industrialization and the formation of IFS.

Table 2: Statistical table on the development of IFS according to industrial land area in HCMC [24]. Source: Ministry of Construction 2024

(from 2008 - 2022)

Year	Estimated Number of IS	Industrial Land Area in HCMC (ha)
2008	10710	~1,500 ha
2010	12220	~1,700 ha
2012	15920	~1,800 ha
2014	13981	~1,900 ha
2016	15793	~2,100 ha
2018	20135	~2,400 ha
2020	29102	~2,500 ha
2022	32182	~3,100 ha

However, the rate of increase in IFS

is faster than that of industrial land area, suggesting that there are other factors influencing the development of IFS beyond the industrialization process. This indicates that industrialization is an important factor influencing the migration process of people from rural to urban areas. This situation has had a strong impact on the city’s population in particular and urban management in general.

In urban lifestyles, there is still a lack of understanding among residents about the use of common spaces. Typically, individuals show a lack of awareness in environmental protection, not complying with legal guidelines related to construction and land use. The vast majority still prioritize personal needs over community benefits and social welfare. Management, inspection, and handling of violations are still limited. Corruption and lack of transparency in management lead to delays in resolving issues related to IFS. Functional agencies have not coordinated closely and synchronously in monitoring and handling violations, resulting in shortcomings in urban management.

3.4. *Reasons for leading to the Emergence of IFS*

The population explosion process is one of the leading causes affecting urban aesthetics and causing negative consequences, especially in IA.

Dead-end alleys are an important feature in the urban structure of HCMC. As illustrated in the Binh Dong area (District 8), alleys account for up to 75.6% of the total traffic area, reflecting spontaneous urban development and high land use demand (Diagrams 6,7,8 and Table 3). The complex alley network has created a unique living environment but poses many potential risks. The sizes of dead-end alleys vary, from narrow pedestrian paths to wide roads for vehicles, depending on plot size and urban planning. Specifically, with a total alley length of up to 4.7 km in a small area like Binh Dong, the process of traffic regulation and ensuring area security becomes an extremely complex issue. This requires creative urban planning and management solutions, especially in the

context of rapid urbanization and increasing housing demand in HCMC.

Dead-end alleys provide residents with a quiet and isolated environment while improving connectivity between residential areas. However, they can also cause difficulties for traffic and become focal points for social evils, potentially leading to issues such as theft or robbery.

Table 3: Statistical Table of Road Lengths in the Binh Dong Area, District 8 – HCMC.

Road Type	Street Name	Road Length (km)	Total (km)
Inter-area Traffic Road	Binh Dong Street	0,45	0.45
Internal Traffic Road	Luong Van Can Street	0,37	1,07
	Luu Huu Phuoc Street	0,33	
	Nguyen Nhuoc Thi Street	0,37	
Internal Traffic Road	Alleys	4,7	4,7
Total Road Length (km)		6.22	

3.5. *Multidimensional view of IFS in urban areas.*

IFS create a series of significant challenges for urban management and development. Firstly, they significantly hinder the process of reviewing and collecting planning data. Urban areas often allocate significant resources to comprehensive development strategies aimed at optimizing land use, ensuring adequate infrastructure, and promoting sustainable regeneration.



(a) Tangled electrical wire (b) Air conditioner outdoor units

Image 3. The space between closely spaced high-rise buildings is often called “urban voids,” covered by tangled electrical wires and air conditioner outdoor units. Image source: Authors

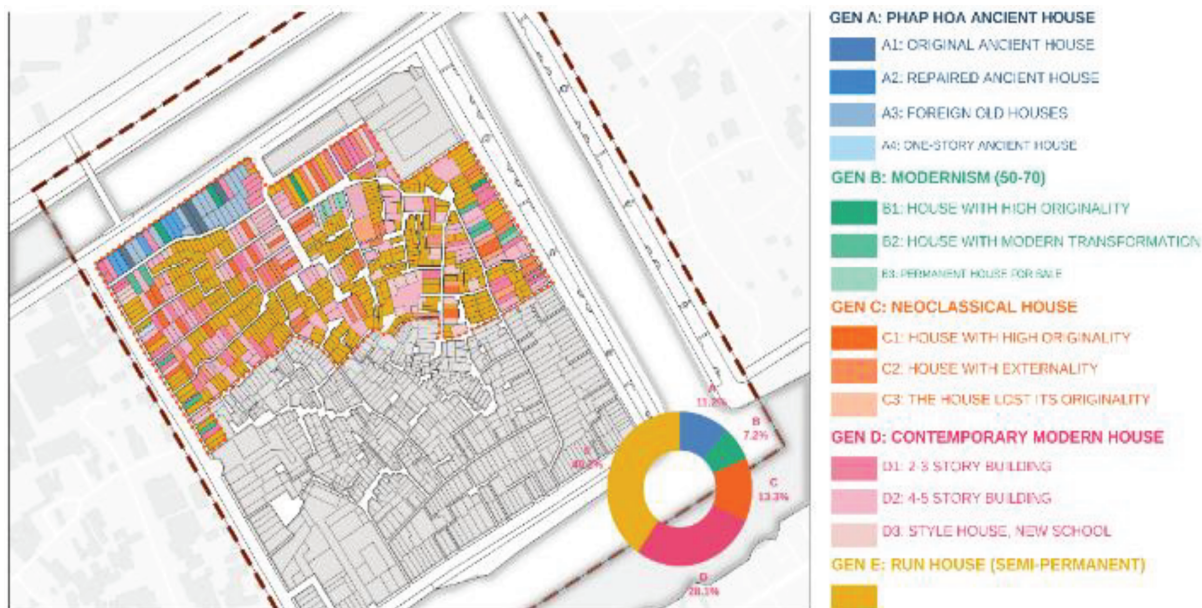


Diagram 6. Statistical table of the urban morphology of the Binh Dong area in District 8 - HCMC. The population explosion in HCMC (over 10 million people by 2024) has gradually led to the appearance of alleys, resulting in a significant increase in the number of semi-permanent and rudimentary housing (accounting for 40.2% of the total). Source: Authors

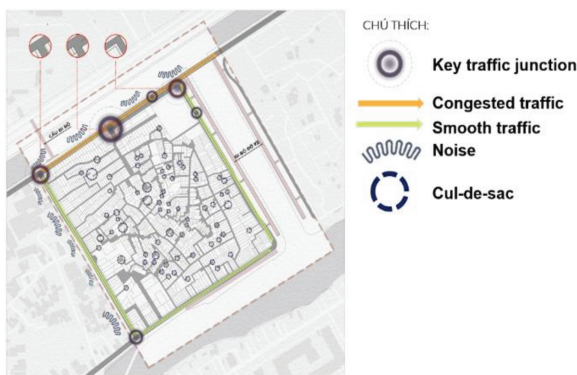


Diagram 7. Statistical table of the urban transportation system of the Binh Dong area in District 8 - HCMC. Source: Authors



Diagram 8. Statistical table of the proportion of urban roads in the Binh Dong area in District 8 - HCMC. Source: Authors

However, the widespread existence of IFS undermines these efforts. These areas

often lack sanitation, electricity, and water infrastructure, putting pressure on the city’s existing technical systems. Moreover, the lack of technical systems to handle organic waste can pose health risks, thereby facilitating the spread of diseases in the community. In terms of public safety, IFS cause relatively serious problems. Due to lack of regulations, these spaces often do not meet basic safety standards (Image 3). Unauthorized construction of buildings without adequate technical supervision can increase the likelihood of building collapse or fire hazards. Lack of street lighting and the presence of security forces can make it easier for criminals to operate in these areas.

From a social perspective, IFS contribute to exacerbating class inequality. Although providing housing for low-income people, IFS trap them in a vicious cycle of poverty. People living in IS face difficulties in accessing high-quality health services, education, and stable livelihood opportunities. The existence of IFS also leads to spatial division in urban areas. This can create slums like Kowloon Walled City in Hong Kong in the 80s-90s. As a result, these social classes are significantly hindered in their ability to reintegrate into society.

However, besides the above-mentioned problems, IFS also bring positive contributions to urban areas. The existence of these spaces has painted an urban landscape picture with vibrant and distinctive cultural features (Images 4a & 4b).



a) Pagoda on apartment rooftop b) Temples on apartment rooftops

Image 4. Images of temples or villas on the rooftops of apartment buildings. This is a new trend applied in major cities. Source: Author.



Image 5. Image of a green belt under a bridge. They bring biodiversity and reduce the urban heat island effect. Image source: Author.

Besides the landscape perspective, IFS also create a living context imbued with community cultural values. It's where people can interact and establish many symbiotic relationships between humans and nature. Environmentally, IFS contribute positively to the urban ecosystem. They often enhance biodiversity by recreating natural habitats for many species of flora and fauna (Image 5). The presence of trees and vegetation in these spaces helps improve air quality and mitigate the urban heat island effect. Additionally, these spaces create opportunities for street art forms to develop, such as graffiti art. However, they are only beautiful and appropriate when placed in the right location and context conditions (Image 6).

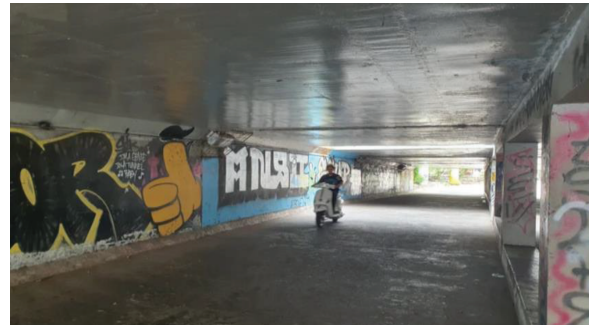


Image 6. IFS also contribute to the development of street art forms such as graffiti painting. Image source: Doan Hiep.

Structures on apartment rooftops not only help maximize space but also create practical values for the residential community inside the building. Besides providing green space and improving microclimate, these areas also become important community activity points (Images 4a and 4b). These are ideal spaces for organizing spiritual, educational, and artistic cultural activities. Some activities include outdoor yoga classes, small-scale exhibitions, community vegetable gardens, or even temples and pagodas to meet the religious and belief needs of the residential community. Notably, the combination of green technologies such as solar panels and rainwater collection systems on rooftops contributes significantly to sustainable urban development efforts.

4. RESULTS AND DISCUSSION

4.1. Research Results

Through the analyzed data, the research process has somewhat clarified the objectives and discussed the nature and impact of IFS from various perspectives:

(1) Analyzed the dual impact of IFS in HCMC, while assessing both their challenges and potential for urban development.

(2) Research results show that IFS occupy a significant proportion of the built-up land area in HCMC, with an increase closely related to the rapid industrialization and urbanization process.

(3) Although creating many challenges in planning and social welfare, IFS also contribute to cultural diversity and provide livelihood opportunities for low-income people.

(4) The significance of the study is to propose a comprehensive approach in managing IFS, rather than complete elimination. These spaces need to be integrated and improved, leveraging benefits while minimizing negative impacts.

(5) The study proposes developing community-based management models and assessing the socio-economic impact of renovation initiatives or new technology applications. The development of high-quality affordable housing and research on the impact of climate change also need to be focused on [25].

4.2. Discussion

Urban management always requires flexible adaptation to the economic and social context in urban areas. Community

participation is a key factor in this improvement process. Integrating knowledge from IFS into formal planning processes helps create more diverse and vibrant urban forms (Figures 7a & 7b). However, the handling process needs to carefully select between improving living conditions and preserving the social and economic networks that have formed in these areas.

The long-term existence of the Maeklong Railway Market in Thailand is evidence of effectively interweaving commercial activities and public transportation (Figure 8). This can help preserve local culture and meet the practical needs of the community. Although it improves the efficiency of urban space use, in this case, safety issues are still relatively limited.



(a) Building structure release for subway traffic



(b) Rooftop parking and roads

Image 7. Optimizing solutions for IFS. Source: Author.



Image 8. The Maeklong Railway Market in Thailand is still preserved and maintained to date.

Image source: Bulom Narongsinh

5. CONCLUSION

From an overall perspective, IFS in urban areas provide a great lesson on urban management for planning experts. The top priority is still the stage of analyzing urban models worldwide based on the cohabitation

process and indigenous cultural foundation to maintain and develop urban morphology in various aspects and distinct planning languages.

Managing IFS in a planned manner can create an attractive, safe, and hygienic urban environment. Limiting spontaneous expansion also helps effectively manage land resources and minimize negative impacts on the environment.

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